

Triathlon® Revision Knee System

Surgical protocol

Implants

Instruments



Compatibility

This compatibility chart applies to the X3 inserts with catalog numbers ending with the letter E. Please reach out to your Stryker representative for the compatibility of other Triathlon tibial inserts.

Femoral component/ insert compatibility

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

Femoral components	Insert type				
	CR	CS	PS	PSR	TS
TS cemented	No	No	✓	✓	✓

Femoral component/ patella compatibility

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

Femoral components	Patella type			
	Asymmetric	Asymmetric metal-backed	Symmetric metal-backed	Symmetric
TS cemented	✓	✓	✓	✓

Tibial insert/baseplate compatibility

Size matching: Size specific, e.g., size 4 insert to be used only with size 4 baseplate.

- ▶ **Note:** TS insert can only be used with the cemented Universal baseplate.
- ▶ **Note:** PS insert trial may be used to trial for PSR insert.

Tibial Baseplates	Insert type				
	CR	CS	PS	PSR	TS
Cemented Universal	✓	✓	✓	✓	✓

Triathlon TS Augments (for Triathlon PS and TS cemented femurs only)

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

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

Tibial Augments are size specific and come in left medial/right lateral or right medial/left lateral configurations and are only compatible with the cemented Universal baseplate.

Indications and contraindications

Indications for US and Rest of World:

General total knee arthroplasty (TKR) indications:

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

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

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

The Triathlon All Polyethylene tibial components are indicated for cemented use only.

Additional Indications for Posterior Stabilized (PS) and Total Stabilizer (TS) Components:

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

Additional indications for Total Stabilizer (TS) Components:

- Severe instability of the knee secondary to compromised collateral ligament integrity or function.

Indications for Bone Augments:

- Painful, disabling joint disease of the knee secondary to: degenerative arthritis, rheumatoid arthritis or post-traumatic arthritis, complicated by the presence of bone loss.
- Salvage of previous unsuccessful total knee replacement or other surgical procedure accompanied by bone loss.

Additional indications for Cone Augments:

- Severe degeneration or trauma requiring extensive resection and replacement.
- Femoral and tibial bone voids.
- Metaphyseal reconstruction.

Triathlon Tritanium Cone Augment components are intended for cemented or cementless use.

Indications for EU, EMEA countries requiring CE mark and Australia:

General Primary Total Knee Arthroplasty (TKA) Indications:

- Painful, disabling joint disease of the knee resulting from: noninflammatory degenerative joint disease.
- Moderate varus, valgus or flexion deformity in which the ligamentous structures can be returned to adequate function and stability.

Additional Indications for Triathlon Cruciate Retaining (CR) cemented femoral component, CS X3 tibial inserts, Primary Cemented Baseplate, Universal Baseplate, Cemented Symmetric and Asymmetric X3 Polyethylene Patellar components include:

- Revision of previous unsuccessful knee replacement or other procedure.

Additional Indications for Posterior Stabilized (PS) Femoral component, distal fixation pegs and PS/PSR tibial inserts:

- Revision of previous unsuccessful knee replacement or other procedure (cemented PS femoral and PS X3 tibial insert only).
- Ligamentous instability requiring implant bearing surface geometries with increased constraint.
- Absent or non-functioning posterior cruciate ligament.
- Severe anteroposterior instability of the knee joint.

Additional Indications for Posterior Stabilized (PS) Femoral components and PS/PSR tibial inserts when used with the Triathlon Tritanium Baseplate:

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

Indications for Total Stabilizer (TS) Components (TS femoral component, TS tibial inserts and TS accessory components, including stems, extenders and offset adapters):

- Revision of previous unsuccessful knee replacement or other procedure.

The following indications apply in complex primary and/or revision Total Knee Arthroplasty:

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

The Triathlon Tritanium Total Knee System Patellar and Tibial Baseplate components are indicated for both uncemented and cemented use in primary total knee arthroplasty.

The Triathlon Total Knee System beaded with Peri-Apatite components are intended for uncemented use only in primary total knee arthroplasty.

The Triathlon All Polyethylene tibial components are indicated for cemented use only in primary total knee arthroplasty.

Indications for Tibial and Femoral Bone Augments:

- Painful, disabling joint disease of the knee complicated by the presence of bone loss.
- Revision of previous unsuccessful knee replacement or other procedure, accompanied by bone loss.

Indications for Cone Augments (revision only):

- Severe degeneration requiring extensive resection and replacement.
- Femoral and Tibial bone voids.
- Metaphyseal reconstruction.

The Triathlon Tritanium Cone Augment components are intended for cemented or cementless use with the Triathlon TS Femoral component and Universal Tibial baseplate. The Cone Augments are cemented to the femoral or tibial component; the bone interface may be cemented or cementless.

Contraindications

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

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

Before using Triathlon instrumentation, verify:

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

For Instructions for Cleaning, Sterilization, Inspection and Maintenance of Orthopaedic Medical Devices, refer to LSTPI-B and SLI0001.

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This publication sets forth detailed validated procedures for using the Triathlon Revision Knee System. It offers instructions that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required.



Figure 1

Preoperative templates

The surgeon may apply the outlines on the implant acetate template to an X-ray image to assist in preoperative sizing.

Exposure

A standard anterior midline incision is utilized. Any previous incision can be used or incorporated to decrease the risk of skin slough. (Figure 1)

The capsule is entered through a medial parapatellar approach.

Component removal

When removing the components to be revised, great care must be taken to preserve as much of the remaining bone stock as possible and to avoid the risk of fracture of the residual bone. Bone preservation can usually be achieved through the use of small flexible osteotomes, saws and high-speed burring instruments.

Tibial preparation

Tibial canal preparation

Assemble the 8mm Starter Awl to either the T-handle or power unit using the Universal Driver.

Ream the tibial intramedullary canal. (Figure 2A)

Ream to the desired depth of stem or to a length of fixation preferred for tibial alignment. Grooves along the shank of the reamer indicate the depth of the reamer in the canal. (Figure 2D)

Progressively ream, increasing diameter in 1mm increments until cortical chatter is achieved, and leave the final reamer in the tibial intramedullary canal. (Figure 2B)

Technical points

1. A minimum depth of 125mm, corresponding to the tibial boss and a 100mm stem, is recommended to achieve tibial intramedullary alignment.
2. Tap the final reamer gently with a mallet to assure that it is firmly seated.
3. A tibial offset can be planned for by reaming an additional 25mm, for a total of 50mm greater than the desired stem length (stem + 25mm boss + 25mm offset).
4. If the reamer diameter is less than 16mm, prepare for the boss or offset of the tibial component by reaming over the top of the IM Reamer shaft with the Boss/Offset Reamer. (Figure 2C) Ream until the Boss depth groove lines up to the planned resected bone depth.

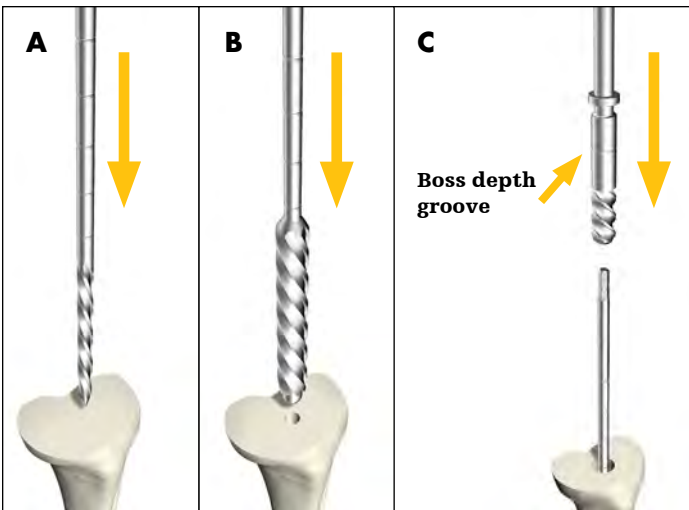


Figure 2

Stem	Tibia
50-100mm	125
100mm w/offset	150
Tibial cone	175
150mm	175
150mm w/offset	200

Figure 2D

Note:

When reaming with Stem Extenders, ream an additional 25mm or 50mm accordingly.

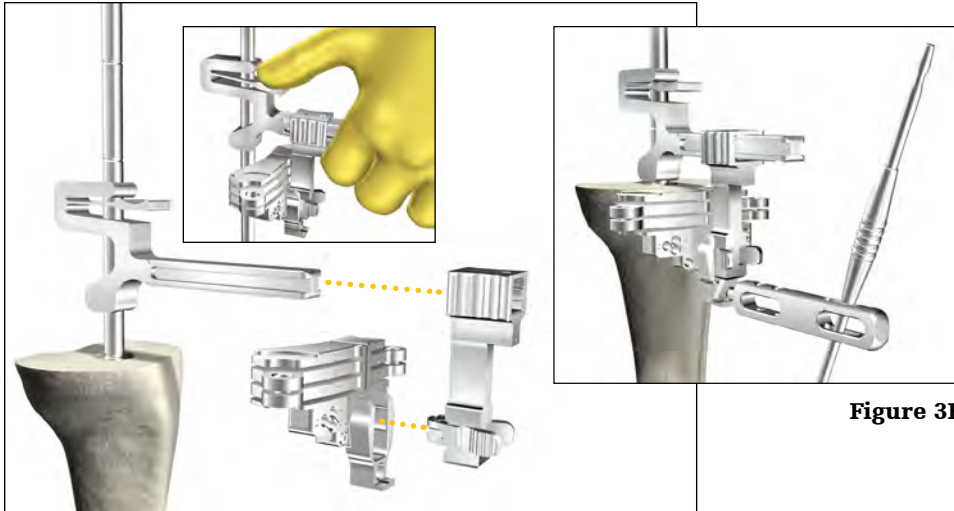


Figure 3A

Proximal tibial cleanup resection

Slide the Resection Guide Tower over top of the IM Reamer by depressing the finger tab as shown. (**Figure 3A inset**) Assemble the Revision Tibial Resection Guide to the Support Arm Assembly. Slide the assembly on to the Resection Guide Tower. Set distal/proximal resection level and rotation by depressing the finger tab on the Resection Guide Tower.

Use the Stop Plate or place the Blade Runner through the cutting slot to determine the resection level. When the appropriate resection level and rotational alignment have been determined, pin the Revision Tibial Resection Guide to the proximal tibia. The Universal Alignment Rod can be used to aid in setting the final component position by inserting it through the Universal Alignment Handle and assembling the Universal Alignment Handle to the Revision Tibial Resection Guide (**Figure 3B**).

Make a cleanup cut to produce a resected surface with a neutral slope.

5mm and 10mm tibial augment resections can be made at this point with the Revision Tibial Resection Guide.

Using a narrow, 15mm - wide, 0.050" thick oscillating saw blade, make a 5mm or 10mm augment resection as appropriate.

Using a reciprocating saw blade through the Revision Tibial Resection Guide, complete the sagittal augment resection. (**Figure 4**)

Figure 3B

Instrument bar

6541-4-801

Universal Driver



6543-7-508

8mm Starter Awl



6541-4-800

T-Handle Driver

See Catalog

IM Reamer



6543-7-527

Boss/Offset Reamer



6541-4-602

Universal Alignment Rod



6541-4-003

Headless Pins - 3"



6541-4-809

Headless Pin Driver



6541-4-804

Headless Pin Extractor

6543-7-601

Resection Guide Tower



6543-7-600

Support Arm Assembly



Left 6543-6-700

Right 6543-6-701

Revision Tibial Resection Guides - Slotted



6543-7-602

Stop Plate



6541-4-400

Blade Runner



6541-4-806

Universal Alignment Handle



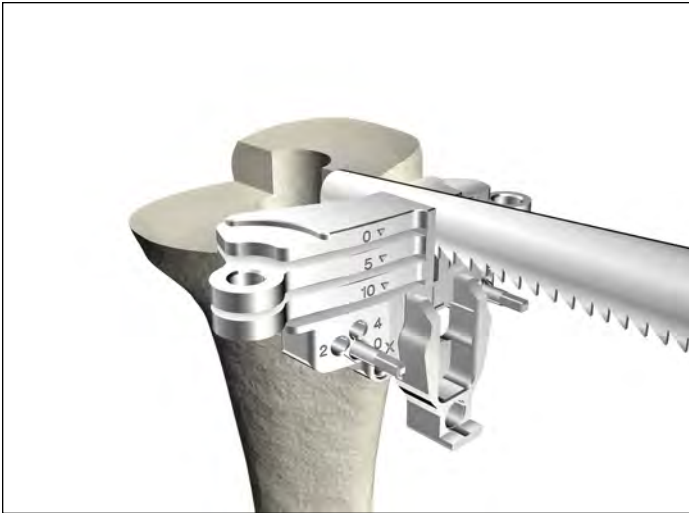


Figure 4

Technical points

The Stop Plate is calibrated to give 2mm resection.

Tip:

To help ensure easy removal of the Resection Guide Tower and Support Arm Assembly, place pins perpendicular to the bone.

Surgeons who prefer a non-captured cleanup cut can use the top of the resection guide. The cleanup cut slot and 5mm slot can then be used for 5mm and 10mm augment resections, respectively.

Note:

The 10mm slot should not be used in this case.



Figure 5

If desired, the Support Arm Assembly, Resection Guide Tower and IM Reamer can be removed before completing the tibial resections. To do so, depress the tabs on the Support Arm Assembly to disengage it from the Revision Tibial Resection Guide. Slide the Support Arm Assembly anterior. Depress the tab on the Resection Guide Tower and slide it off the IM Reamer. Use a T-handle to remove the IM Reamer.

Tibial component sizing

Size the proximal tibia with a Universal Tibial Template placed over the reamer and onto the resected surface of the tibia. (Figure 5)

Once sized, remove the Universal Tibial Template.

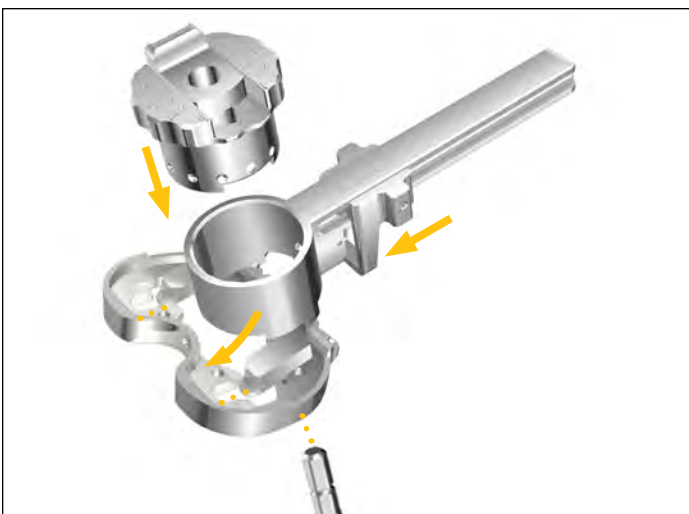


Figure 6

Tibial template positioning

Attach the Tibial Offset Bushing Guide to the appropriate size Universal Tibial Template. Assemble the Tibial Offset Bushing to the Tibial Offset Bushing Guide. (Figure 6)

Slide the entire assembly over the shaft of the IM Reamer.

Rotate the offset dial and translate the slider on the Tibial Offset Bushing until optimal coverage of the proximal tibia is achieved with the Universal Tibial Template.

Note:

If offsetting between sizes 1, 2 and 3, maximum offset achievable is 6mm.

Rotational alignment of the Universal Tibial Template should also be determined. The Universal Alignment Rod can be used to aid in setting the final component position. **(Figure 7)**

Pin the Universal Tibial Template to the proximal tibia.

Record the magnitude and position of the tibial offset from the Tibial Offset Bushing (e.g., 4mm offset at 3 o'clock). An offset may not be required to attain optimal tibial coverage. **(Figure 8)**

Remove the Tibial Offset Bushing Guide and Universal Tibial Template.

Use a T-handle to remove the IM Reamer.



Figure 7

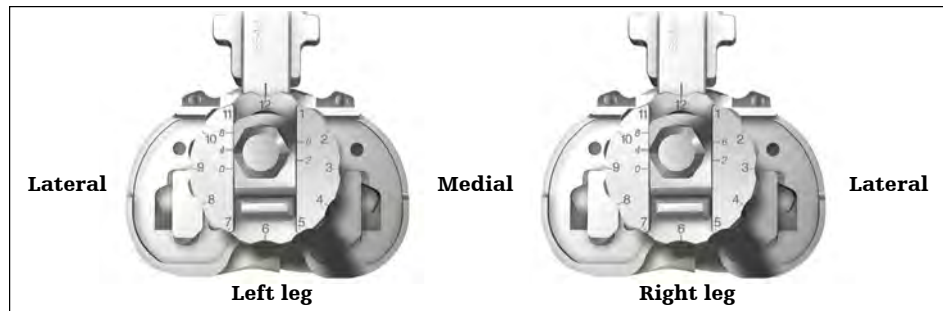


Figure 8

Tibial augment preparation

Augment preparation with offset press-fit stem

Note:

If no augments are needed, skip to the steps outlined in the section on keel preparation on page 10.

If tibia augments are needed, assemble the Revision Tibial Resection Guide to the Tibial Resection Guide Link.

Assemble the Tibial Resection Guide Link to the Universal Tibial Template. Pin the Revision Tibial Resection Guide to the proximal tibia. **(Figure 9)**

Remove the Resection Guide Link and Universal Tibial Template. Pins can be removed from the Universal Template using the Headless Pin Extractor.

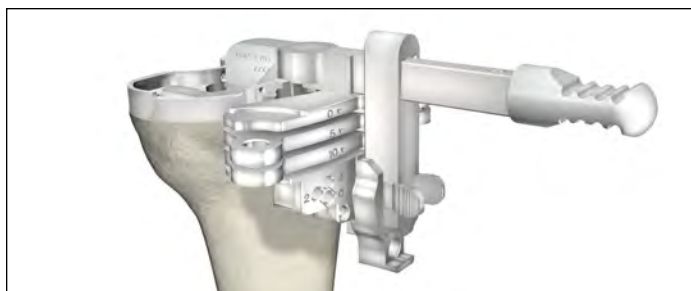


Figure 9

Instrument bar

See Catalog

Universal Tibial Template



Left 6543-6-700
Right 6543-6-701

Revision Tibial Resection Guides - Slotted



6543-2-703

Tibial Resection Guide Link



6541-4-515

Headed Nails - 1 1/2"



6541-4-575

Headed Nails - 3/4"



6541-4-300

Headed Nail Impactor/Extractor



6543-2-600

Tibial Offset Bushing



6543-2-601

Tibial Offset Bushing Guide



6541-4-806

Universal Alignment Handle



6541-4-602

Universal Alignment Rod



6541-4-800

T-Handle Driver



6541-2-807

Tibial Alignment Handle





Figure 10

Make the appropriate 5mm or 10mm tibial augment resections. (**Figure 10**)

Using a reciprocating saw blade through the Revision Tibial Resection Guide, complete the sagittal augment resection. (**Figure 11**)

Remove the Revision Tibial Resection Guide from the tibia.

Assemble the appropriate Tibial Augment Trials to the distal surface of the Universal Tibial Template.

Place the assembly on the resected tibial plateau and using the Headed Nails/Headless Pins, re-pin the Universal Tibial Template to the proximal tibia.

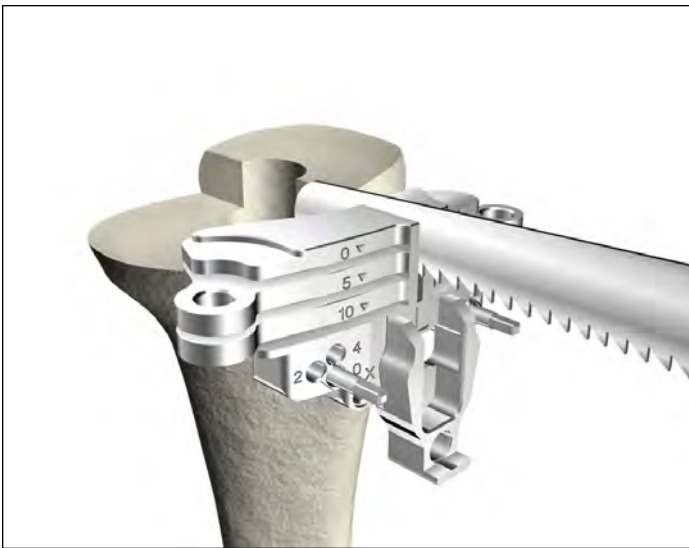


Figure 11

Technical points

Surgeons who prefer a non-captured cleanup cut can use the top of the resection guide. The cleanup cut slot and 5mm slot can then be used for 5mm and 10mm augment resections, respectively.

Note:

The 10mm slot should not be used in this case.

If desired, the Support Arm Assembly, Resection Guide Tower and IM Reamer can be removed before completing the tibial resections. To do so, depress the tabs on the Support Arm Assembly to disengage it from the Revision Tibial Resection Guide. Slide the Support Arm Assembly anterior. Depress the tab on the Resection Guide Tower and slide it off the IM Reamer. Use a T-handle to remove the IM Reamer.

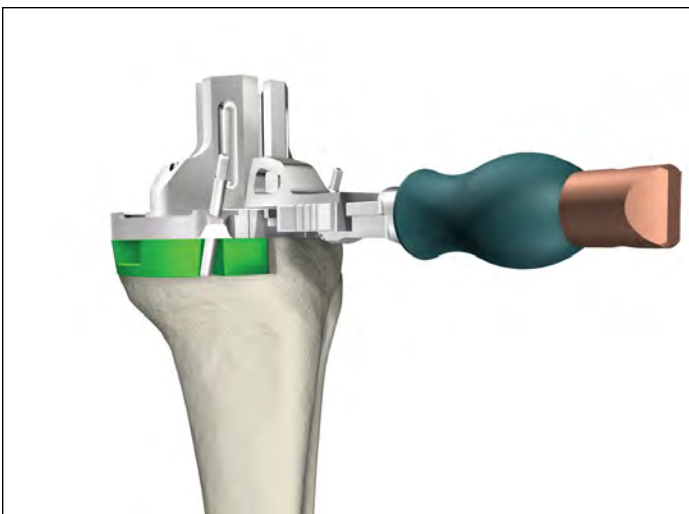


Figure 12

Keel preparation

Assemble the appropriate size Keel Punch Guide to the Universal Tibial Template by inserting, at a slight angle to the top of the Universal Tibial Template, 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 12**)

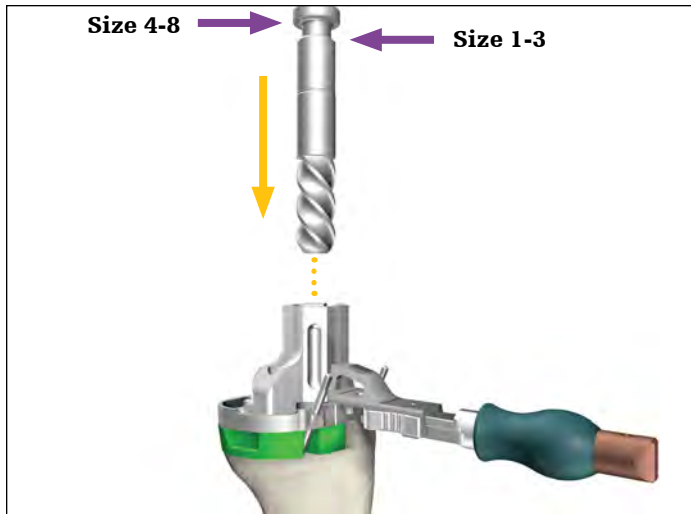


Figure 13

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. (Figure 14) In sclerotic bone, the use of a saw prior to the Keel Punch may be advisable.



Figure 14

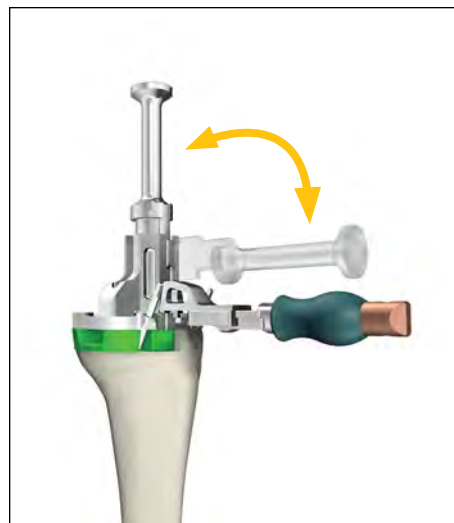


Figure 15

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. (Figure 15) Remove the Headless Pins with the Headless Pin Extractor (or Headed Nails with the Headed Nail Impactor Extractor) and remove the Universal Tibial Template.

Offset boss reaming

If offset preparation is required, an additional reaming step is needed to prepare for the offset tibial boss.

Attach the Boss Reamer to the Universal Driver. Place the Boss Reamer into the Keel Punch Guide. Ream to the appropriate depth marker indicated by the step on the Reamer shank (Up to the step for Size 1-3 Keel Punch Guide and all the way to the stop for Size 4-8 Keel Punch Guide). (Figure 13)

Instrument bar

6541-4-801
Universal Driver



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



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



6543-7-527
Boss/Offset Reamer



See Catalog
Tibial Augment Trial



6541-4-003
Headless Pins - 3"



6541-4-809
Headless Pin Driver



6541-4-804
Headless Pin Extractor



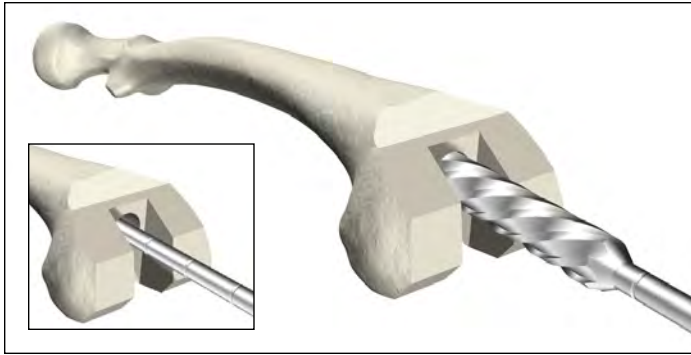


Figure 16

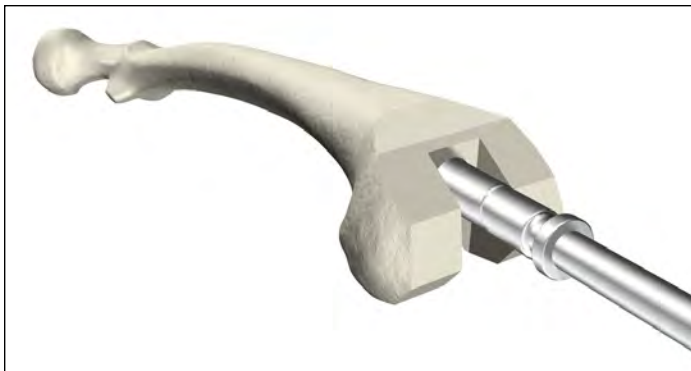


Figure 17

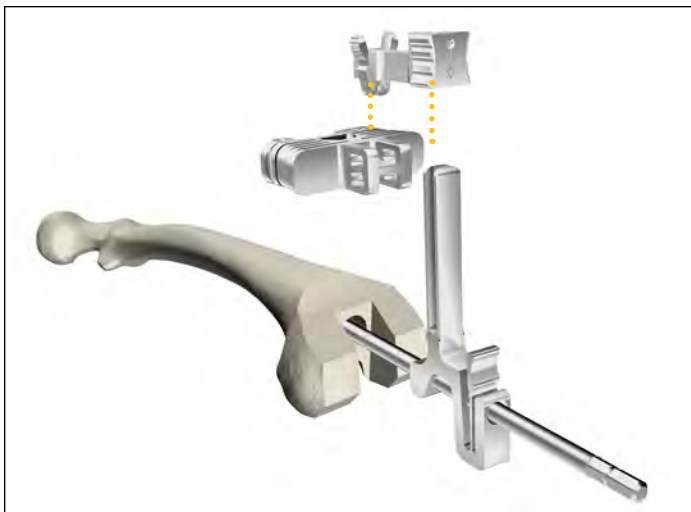


Figure 18

Femoral preparation

Femoral canal preparation

Assemble the 8mm Starter Awl to either the T-handle or power unit using the Universal Driver.

Ream the femoral intramedullary canal.

Ream to the desired depth of stem or length of fixation preferred for femoral alignment. Grooves along the shank of the reamer indicate the depth of the reamer in the canal.

Progressively ream, increasing diameter in 1mm increments until cortical chatter is achieved, and leave the final reamer in the femoral intramedullary canal. (Figure 16)

Technical points

1. A minimum depth of 150mm, corresponding to the femoral boss and a 100mm stem, is recommended to achieve femoral intramedullary alignment.
2. Tap the final reamer gently with a mallet to assure that it is firmly seated.
3. A femoral offset can be planned for by reaming an additional 25mm, for a total of 75mm greater than the desired stem length (stem + 50mm from the joint line to the boss + 25mm offset).
4. If the reamer diameter is less than 16mm, prepare for the boss of the femoral component by reaming over the top of the IM Reamer shank with the Boss/Offset Reamer. Ream until the step on the Boss/Offset Reamer lines up with the planned resected bone depth. (Figure 17)

Ream depth: femoral components

Stem	Femur
50-100mm	150
100mm w/offset	175
Femoral Cone	175*
150mm	200
150mm w/offset	225

Note:

When reaming with Stem Extenders, ream an additional 25mm or 50mm accordingly.

*When preparing for size 7-8 Cones, ream an additional 5mm deeper to prevent the Cone Reamer from bottoming out on the IM Reamer.

Distal femoral resection

Slide the Resection Guide Tower over the top of the IM Reamer by depressing the finger tab. Assemble the Revision Distal Resection Guide to the Support Arm Assembly. Slide the assembly on to the Resection Guide Tower. Verify that the Revision Distal Resection Guide reads "Left" for left leg or "Right" for right leg on the side facing away from the femur.

Set distal/proximal resection level and orientation by depressing the finger tab on the Resection Guide Tower and aligning the Revision Distal Resection Guide with the medial epicondyle in order to recreate the anatomical joint line. **(Figure 19)**

Pin the Revision Distal Resection Guide to the distal femur.

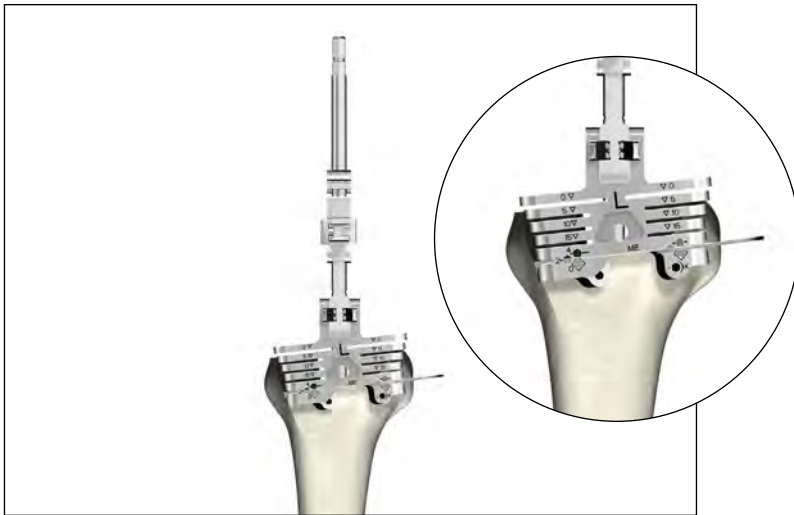


Figure 19

Instrument bar

6541-4-801
Universal Driver



6543-7-508
8mm Starter Awl



6541-4-800
T-Handle Driver



See Catalog
IM Reamer



6543-7-527
Boss/Offset Reamer



6543-7-601
Resection Guide Tower



6543-7-600
Support Arm Assembly



6543-1-721
Revision Distal Resection Guide



6541-4-400
Blade Runner



6541-4-003
Headless Pins - 3"



6541-4-809
Headless Pin Driver



6541-4-804
Headless Pin Extractor



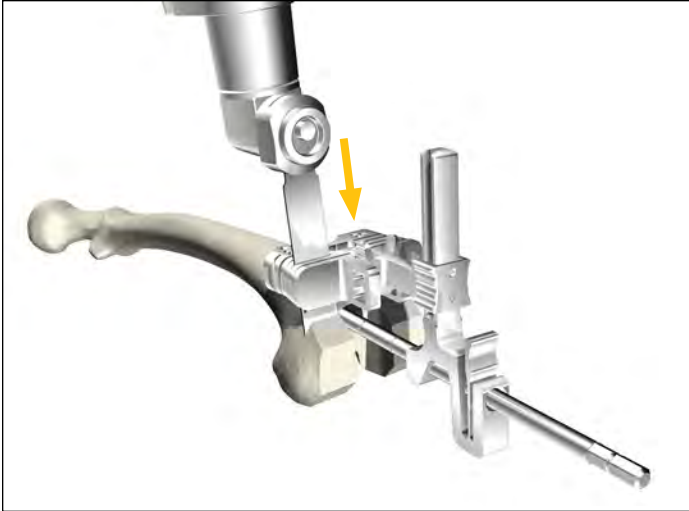


Figure 20

Distal femoral deficiency evaluation and augment preparation

Resect the distal femur. 5mm, 10mm and 15mm distal augment resections can be made at this point with the Revision Distal Resection Guide. (Figure 20)

Technical points

Surgeons who prefer a non-captured cleanup cut can use the top of the Revision Distal Resection Guide. The cleanup cut slot, 5mm and 10mm slot can then be used for a 5, 10 and 15mm augment resections, respectively.

Note:

In this scenario, do not use the 15mm cutting slot.

If desired, the Support Arm Assembly, Resection Guide Tower and IM Reamer can be removed before completing the femoral resections. To do so, depress the tabs on the Support Arm Assembly to disengage it from the Revision Distal Femoral Resection Guide. Slide the Support Arm Assembly anterior. Depress the tab on the Resection Guide Tower and slide it off the IM Reamer. Use a T-handle to remove the IM Reamer.

Femoral sizing with templates

To determine femoral size, match the appropriate Femoral Sizing Templates up to the femur.

Note:

Pay careful attention to match the femoral size to the planned restored joint line as opposed to flush with the surfaces of the femur. A long engraved line on the sagittal profile of the Femoral Sizing Templates is designed to indicate the boss position of the femoral component, while the shorter engraved lines above and below are designed to represent the boss position of the femoral component with 2mm and 4mm anterior and posterior offsets, respectively. In addition, along the handle of each Femoral Sizing Template are two additional tick marks, which are designed to represent the M/L width of the corresponding size femoral component. (Figure 21)

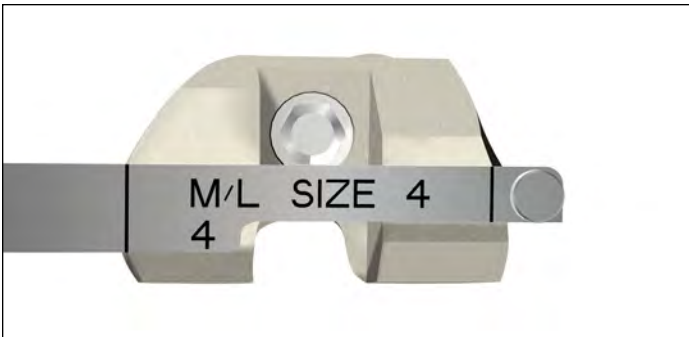


Figure 21

Gap balancing

Flexion and extension gap balancing

Remove the intramedullary reamer from the femoral canal.

Extension gap

Put the knee into Extension (0°). If distal femoral and/or tibial augmentation has been prepared for, assemble the appropriate thickness of Spacer Block Augments to the appropriate sides of the upper and/or lower paddle of the Adjustable Spacer Block. **(Figure 22B)**

The numbers on the thumbwheel are designed to correspond to the implant insert thickness. Lift the Upper Paddle Grip to free the adjustment wheel. Align the notch with the appropriate thickness **(Figure 22A)** and assess the gap space until the appropriate insert thickness is established. Read the measurement off of the knob to determine the tibial insert thickness. Remove the Adjustable Spacer Block from the joint space.

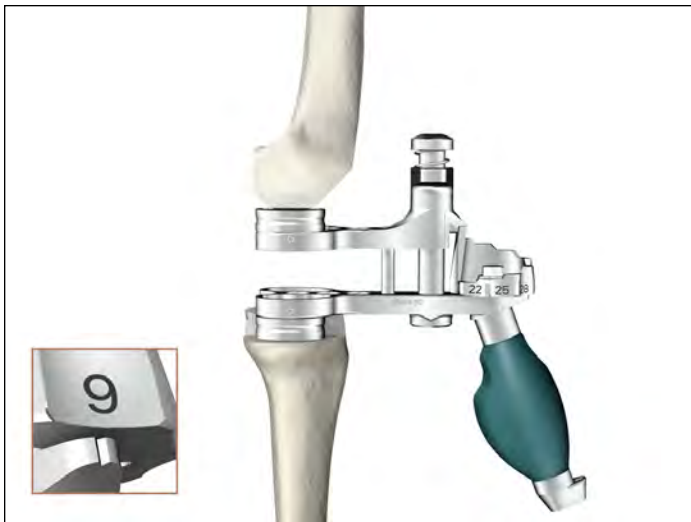


Figure 22A

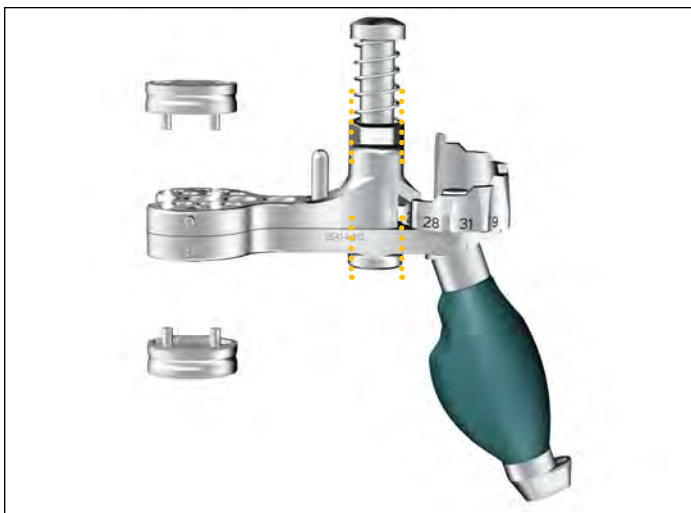


Figure 22B

Instrument bar



6543-7-601

Resection Guide Tower



6543-7-600

Support Arm Assembly



6543-1-721

Revision Distal Resection Guide



6541-4-400

Blade Runner



6543-1-603

Size 1-8 Femoral Sizing Templates



6541-4-610

Adjustable Spacer Block



See Catalog

Adjustable Spacer Block Augment

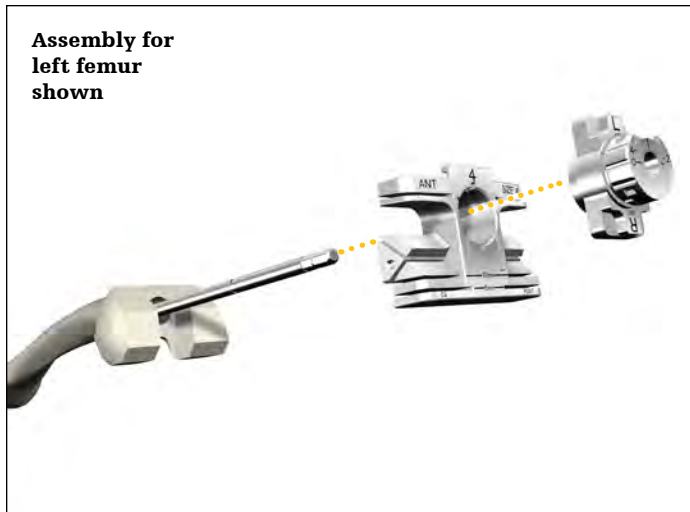


Figure 23

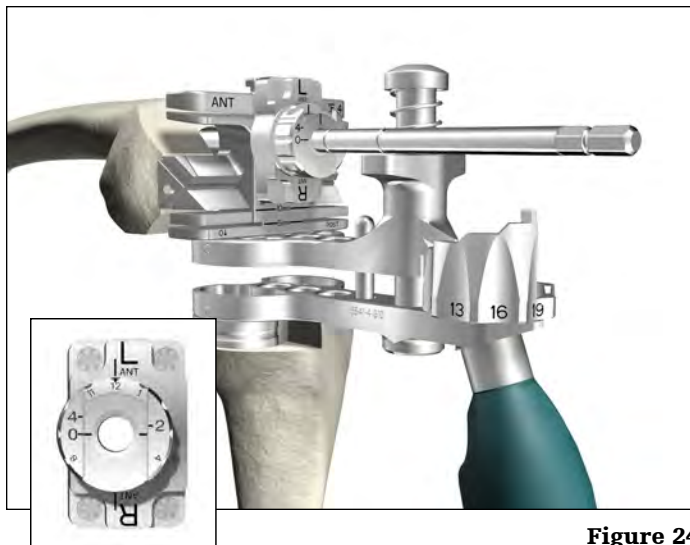


Figure 24

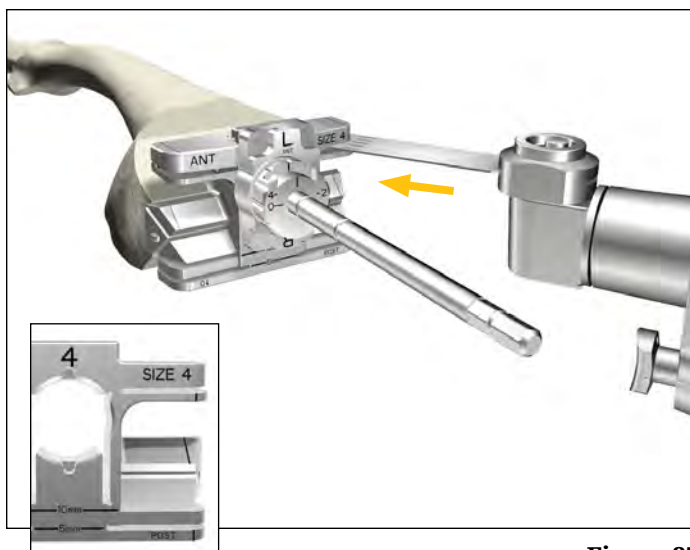


Figure 25

Femoral resections/offsetting/flexion gap balancing

Replace the IM Reamer in the femoral canal. If distal augments are required, assemble Distal Spacers to the distal surface of the appropriate size All-in-One Resection Guide corresponding to distal augmentation resections (5, 10, 15mm).

Assemble the Femoral Offset Bushing to the appropriate size All-in-One Resection Guide, paying careful attention to clock in such that it reads either "Left" or "Right" depending on which is appropriate. (Figure 24)

Slide the All-in-One Cutting Guide and Femoral Offset Bushing over the shank of the IM Reamer. (Figure 23)

Note:

If Adjustable Spacer Block Augments were used to assess extension gap, remove prior to flexion gap assessment.

Put the knee into flexion (90°). If tibial augmentation has been prepared for, assemble the appropriate thickness Spacer Block Augment to lower paddle of the Adjustable Spacer Block. Set the Adjustable Spacer Block to match the measured extension gap. Place the Adjustable Spacer Block between the resected proximal tibia and the posterior surface of the All-in-One Resection Guide.

Use the upper paddle of the Adjustable Spacer Block as reference for the restored flexion joint line. Rotate the offset dial and slide the slider on the Femoral Offset Bushing and adjust the internal/external rotation of the All-in-One Cutting Block until the posterior surface of the block is flush with the upper paddle of the Adjustable Spacer Block. (Figure 24)

Note:

Vertical markings on either side of the All-in-One Resection Guides are designed to correspond to the M/L width of the femoral components. (Figure 25)

Once the position of the All-in-One Resection Guide is optimized, pin it to the distal femur.

Record the magnitude and position of the femoral offset from the Femoral Offset Bushing (e.g., 2mm offset at 12 o'clock).

Remove the Adjustable Spacer Block from the joint space. Complete the four femoral resections as well as any posterior augment resections using a 15mm oscillation saw blade. (Figure 25)

Note:

Posterior cleanup cut is made using the outer most posterior surface of the All-in-One Resection Guide.

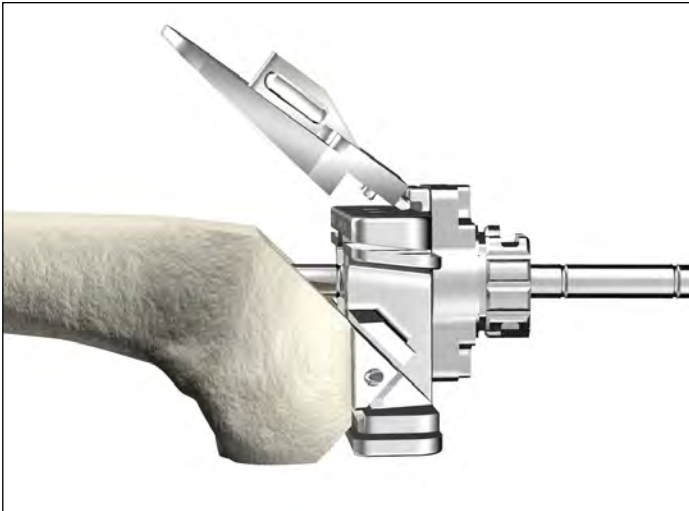


Figure 26A



Figure 26B

Assemble the Revision Box Cutting Guide to the anterior of the All-in-One Resection Guide.

Tip:

For added stability, make the anterior resection and anterior chamfer cut first. Then assemble the Revision Box Cutting Guide to the All-in-One Resection Guide. Pin the Revision Box Cutting Guide to the bone and complete the remaining femoral resections.

– Dr. Kirby Hitt
Temple, Texas

Instrument bar

See Catalog



IM Reamer

See Catalog



All-in-One Cutting Block

6543-1-005

6543-1-010

6543-1-015

Distal Spacer 5mm, 10mm and 15mm

6543-1-600



Femoral Offset Bushing

6541-4-610



Adjustable Spacer Block

See Catalog



Adjustable Spacer Block Augment

6541-4-400



Blade Runner

6543-1-710



Revision Box Cutting Guide

6541-4-003



Headless Pins - 3"

6541-4-809



Headless Pin Driver

6541-4-804



Headless Pin Extractor

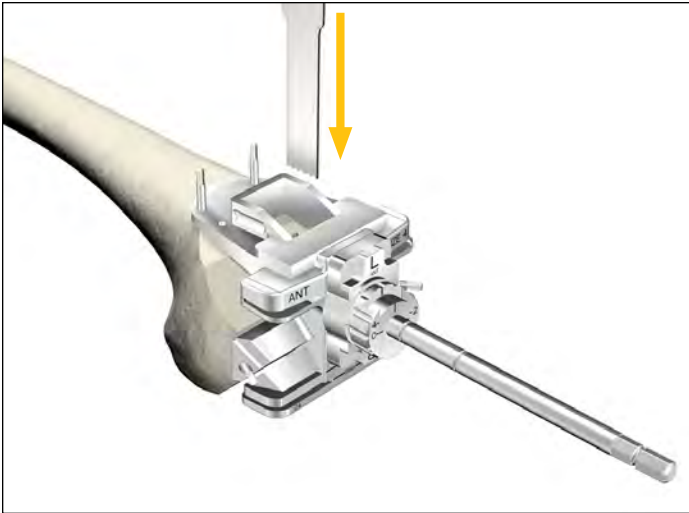


Figure 27

Pin the Revision Box Cutting Guide to the bone.

Using a narrow, 15mm - wide 0.050" thick oscillating saw blade, resect for the M/L walls and score the proximal wall of the femoral box through the Revision Box Cutting Guide (Anterior/Posterior). (**Figure 27**)

Remove the Femoral Offset Bushing from the All-in-One Resection Guide and slide it off the shaft of the IM Reamer.

Using a T-handle, remove the IM Reamer by pulling it through the All-in-One Resection Guide.

Using a narrow, 15mm - wide 0.050" thick oscillating saw, score the M/L walls of the femoral box preparation through the distal face of the All-in-One Resection Guide. (**Figure 28**)

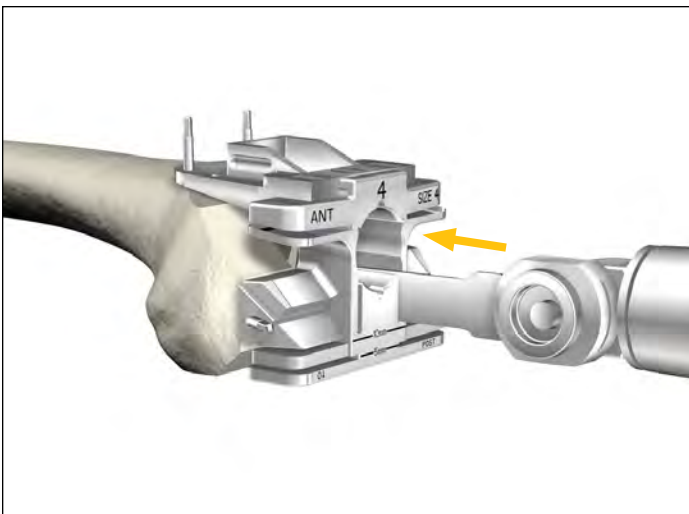


Figure 28

Note:

If the IM Reamer cannot be pulled through the All-in-One Resection Guide, disassemble the All-in-One Resection Guide first. With the Revision Box Cutting Guide still pinned in place, remove the fixation pins from the All-in-One Resection Guide. Next, remove the All-in-One Resection Guide by pulling/tilting the posterior end away from the distal femur.

Once the All-in-One Resection Guide is out of the way, remove the IM Reamer and finish the box preparation using an oscillating saw.

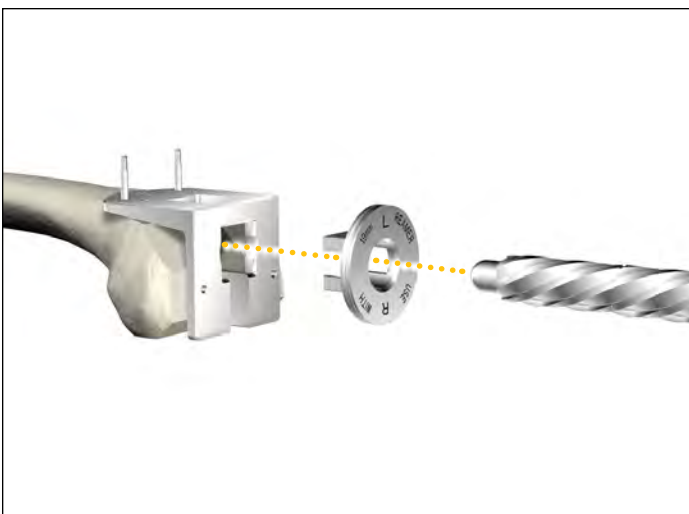


Figure 29

Offset femoral boss preparation

Remove the All-in-One Resection Guide assembly from the femur, and place the Femoral Boss Preparation Guide over the pins used for the Revision Box Cutting Guide.

Insert the Femoral Boss Reamer Bushing into the Femoral Boss Preparation Guide, paying careful attention to clock it such that it reads either "Left" or "Right" depending on which is appropriate. (**Figure 29**)

Place the assembly on to the distal femur and pin the anterior flange to the femur.

Prepare for a deeper box cut through the Boss Reamer Guide. An IM Reamer may also be utilized in preparation for a short cemented stem.

Attach the 19mm IM Reamer to the Universal Driver.

Place the 19mm IM Reamer into the Femoral Boss Reamer Bushing. Ream until the groove in the cutting teeth of the 19mm IM Reamer lines up with the face of the Femoral Boss Reamer Bushing. (**Figure 30**) This clears for the femoral boss in the offset position.

Remove the fixation pins and disassemble the Femoral Boss Preparation Guide from the femur.

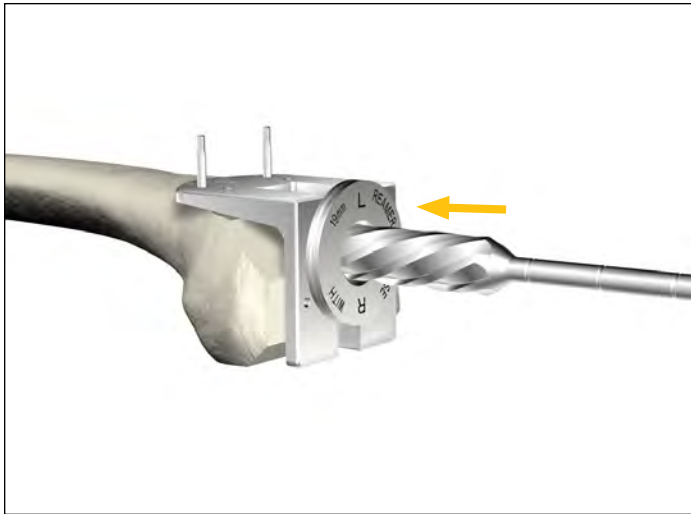


Figure 30

Instrument bar

See Catalog 

IM Reamer



See Catalog

All-in-One Cutting Block



6543-1-600

Femoral Offset Bushing



6543-1-710

Revision Box Cutting Guide



6543-1-750

Femoral Boss Preparation Guide



6543-1-751

Femoral Boss Reamer Bushing



6541-4-801

Universal Driver



6541-4-003

Headless Pins - 3"



6541-4-809

Headless Pin Driver



6541-4-804

Headless Pin Extractor

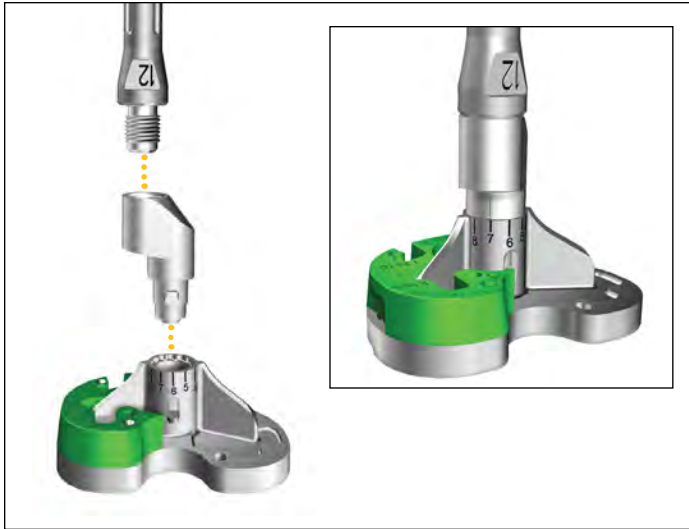


Figure 31

Tibial trial assembly

- **Without offset:** Assemble all Tibial Augment Trials to the appropriate size Tibial Baseplate Trial. Thread the appropriate size Stem Trial into the Tibial.
- **With offset:** Thread the appropriate size Stem Trial into the appropriate Offset Adapter Trial.

Dial the rotation of the Offset Adapter Trial to the position recorded from the Tibial Offset Bushing. Align the scribe line on the Offset Adapter Trial to the scribe line on the Tibial Baseplate boss and snap the Offset Adapter Trial into the Tibial Baseplate Trial. **(Figure 31)**

To disassemble the Offset Adapter Trial, insert the key on the Universal Counter Wrench into one of the three slots in the Offset Adapter Trial as shown. **(Figure 33)**

Assemble the tibial trial construct to the Baseplate Impactor/Extractor and impact onto the tibia. **(Figure 32)**

Assemble the appropriate size Tibial Insert Trial into the Tibial Baseplate Trial.

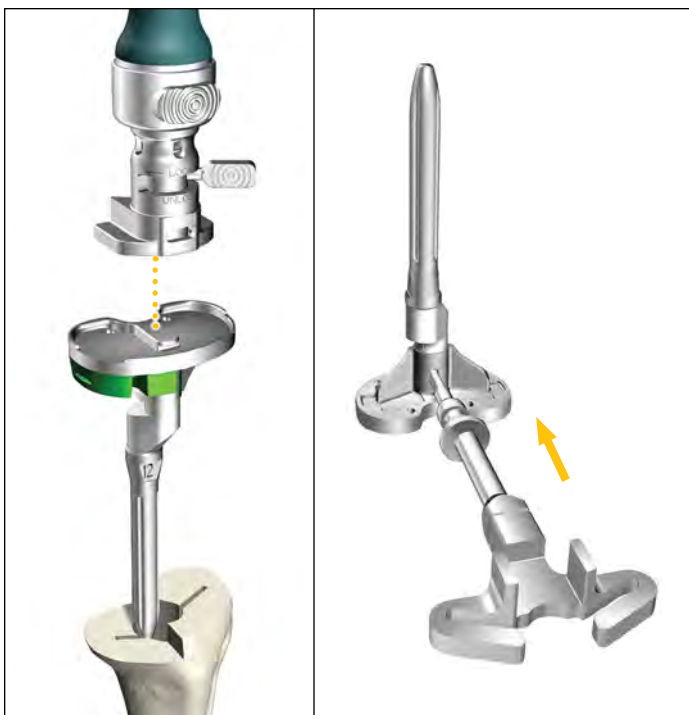


Figure 32

Figure 33

Femoral trial assembly

- **Without offset:** Assemble all Posterior and Distal Femoral Augment Trials prepared for onto the appropriate size Femoral Trial. Ensure that both Distal Femoral Augment Trial tabs have engaged the undercuts of the Femoral Trial. **(Figure 34)**

Thread the appropriate size Stem Trial into the Femoral Trial.

Note:

Femoral Distal Augment Trials are size specific and are offered in 5mm, 10mm and 15mm thicknesses. See catalog.



Figure 34

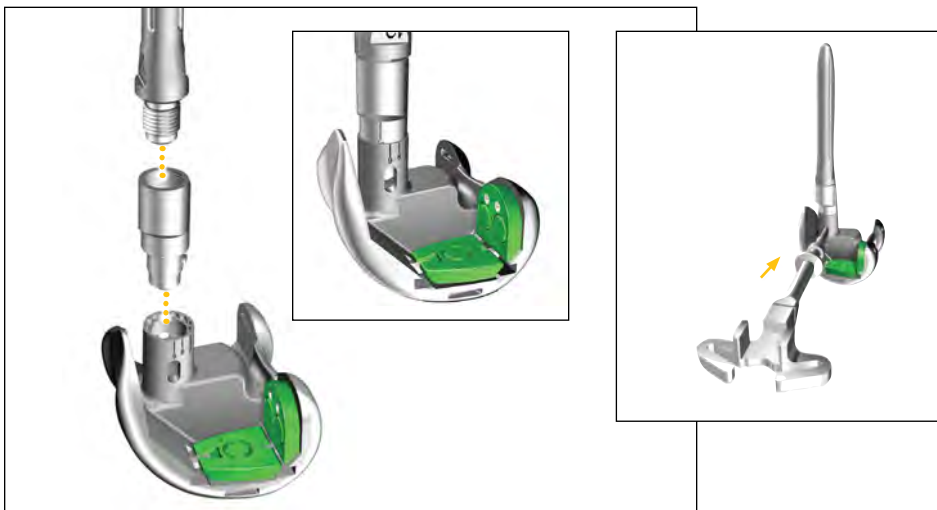


Figure 35

- **With offset:** Thread the appropriate size Stem Trial into the appropriate size Offset Adapter Trial. **(Figure 35)**

Dial the rotation of the Offset Trial to the position recorded from the Femoral Offset Bushing. Align the scribe line on the Offset Adapter Trial to the scribe line on the femoral boss and snap the Offset Adapter Trial into the Femoral Trial.

To disassemble the Offset Adapter Trial, insert the key on the Universal Counter Wrench into one of the three slots in the Offset Adapter Trial as shown.

Instrument bar

See Catalog

Baseplate Trial



See Catalog

Triathlon Stem Trial



See Catalog

Triathlon Stem Extender Trial



See Catalog

Triathlon Offset Adapter Trial



See Catalog

Tibial Augment Trial



6543-4-801

Universal Counter Wrench



6541-4-810

Impaction Handle



6541-4-805

Baseplate Impactor/Extractor



See Catalog

Triathlon TS Femoral Trial



See Catalog

Triathlon Femoral Distal Augment Trial



See Catalog

Triathlon Femoral Posterior Augment Trial



See Catalog

Triathlon TS Plus Tibial Insert Trial



6541-4-807

Femoral Impactor/Extractor





Figure 36

Assemble the femoral trial construct to the Femoral Impactor/Extractor and impact onto the femur. (Figure 36)



Figure 37

Perform the trial reduction and evaluate joint stability. (Figure 37)

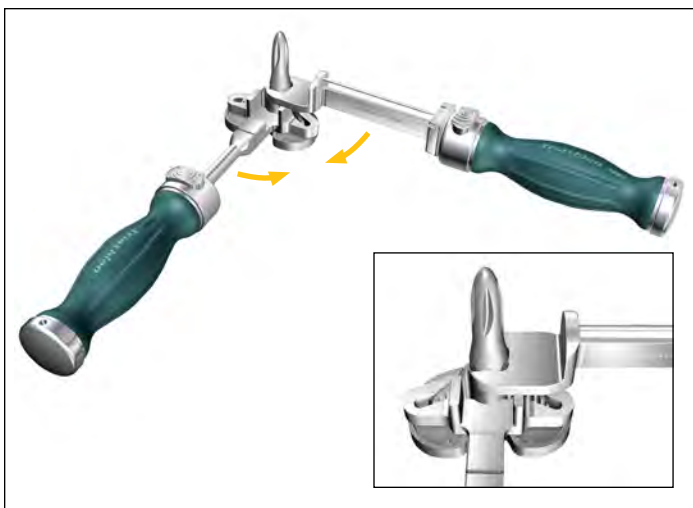


Figure 38

Tibial implant assembly

Note:

If not using a stem, re-torque the end cap to 120 in-lbs using the Universal Torque Wrench as indicated in Figure 38.

Tibial Baseplate with stem: No offset

Using the Universal Counter Wrench with the TIBIA side up, hold the Baseplate in place by placing the keel fins into the slots.

Thread the appropriate size stem into the Tibial Baseplate boss.

Place the open face end of the Universal Torque Wrench on the flats of the stem.

Tighten by pulling the wrenches **together**. Torque stem to 120 in-lbs as indicated on the Universal Torque Wrench. (Figure 38)



Tibia with Stem Extender

Using the Universal Counter Wrench with the TIBIA side up, hold the Baseplate in place by placing the keel fins into the slots. Thread the Stem Extender into the Tibial Baseplate boss.

Place the open face end of the Universal Torque Wrench on the flats of the Stem Extender. Tighten by pulling the wrenches **together**.

Torque stem to 120 in-lbs as indicated on the Universal Torque Wrench. **(Figure 39)**



Figure 39

Tibia with offset and stem

Ensure jam nut is up against the Offset Adapter, exposing all of the threads.

Thread the Offset Adapter into the Baseplate until the jam nut bottoms out on the Tibial Baseplate boss.

Time the rotation of the Offset Adapter to the position recorded from the Tibial Offset Bushing by turning the Offset Adapter counterclockwise and aligning the scribe line on the Offset Adapter to the scribe line corresponding clockface mark on the Tibial Baseplate boss.

Holding the Offset Adapter in place, turn the jam nut **counterclockwise** and hand tighten it against the Tibial Baseplate boss. **(Figure 40)** This will hold its position for final tightening.

Holding the Universal Torque Wrench in the **left hand**, place the open face end of the wrench on the flats of the jam nut.

Next, holding the Offset Counter Wrench in the **right hand**, place the open face end of the wrench on the flats on the Offset Adapter.

Tighten by pulling the wrenches **together**. Torque to 120 in-lbs as indicated on the Universal Torque Wrench. **(Figure 41)**



Figure 40

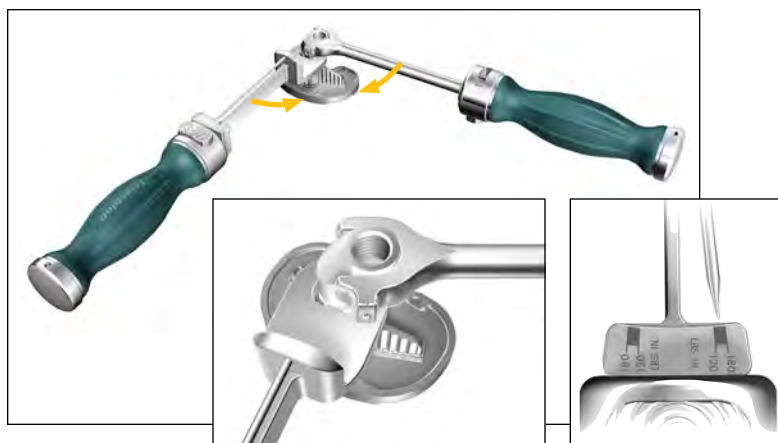


Figure 41

Instrument bar

See Catalog

Universal Tibial Baseplate



See Catalog

Triathlon Cemented Stem



See Catalog

Triathlon Fluted Stem, Titanium



See Catalog

Triathlon TS Offset Adapter



See Catalog

Triathlon Stem Extender



6541-4-810

Impaction Handle



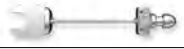
6543-4-803

Offset Counter Wrench



6543-4-818

Universal Torque Wrench



6543-4-801

Universal Counter Wrench



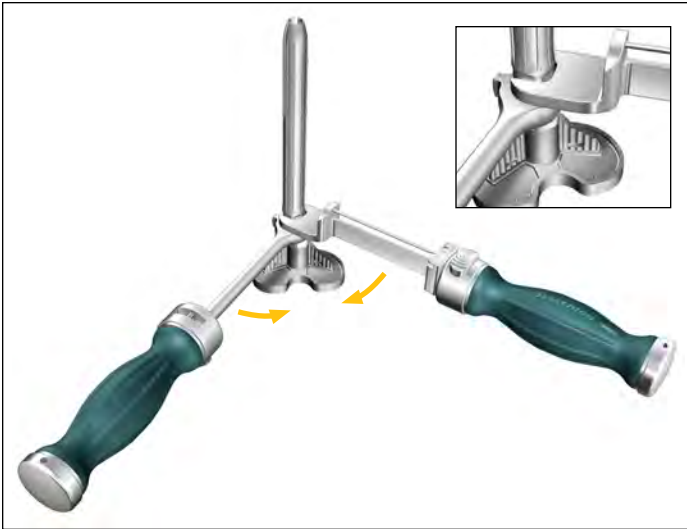


Figure 42

Thread the appropriate size stem into Offset Adapter.

Now, holding the Universal Torque Wrench in the **right hand**, place the open face end of the wrench on the flats of the stem.

Hold the Offset Counter Wrench in the **left hand** and place the open face end of the wrench on the flats of the Offset Adapter.

Tighten by pulling the wrenches **together**. Torque stem to 120 in-lbs as indicated on the Universal Torque Wrench. (**Figure 42**)

Tibial augmentation

Assemble the 1/8" Universal Joint Hex Drive into the Slip Torque Handle.

Place the Tibial Augment on the distal side of the Universal Baseplate. Verify both pins of the Tibial Augment are engaged into the slots on the underside of the Universal Baseplate and that the Tibial Augment is seated flush. Using the 1/8" Universal Joint Hex Drive, torque the helical bolt captured within the tibial augment until the torque driver slips, at which time you will hear an audible click. Verify that the helical bolt is engaged into the slot on the keel of the Universal Baseplate. (**Figure 43**) Repeat on a second augment if required on the other side.

Note:

Triathlon TS Augments are not cleared to cement together and stack to fill voids.



Figure 43

Femoral implant assembly

Femoral Augments

Assemble the 1/8" Universal Hex Driver into the Slip Torque Handle.

Place the Femoral Augment on the appropriate (distal or posterior) surface of the Femoral Component.

Assemble the Augment Screw through the Femoral Augment into the threaded hole in the Femoral Component.

Torque the Augment Screw until the torque driver slips, at which time you will hear an audible click. (**Figure 44**) Repeat this sequence on all required femoral augments.

Note:

If using the largest augments, assemble the stem first.



Figure 44

Femur with stem: No offset

Using the Universal Counter Wrench with the FEMUR side up, hold the femoral component in place by assembling the box into the gap.

Thread the appropriate size stem into the femoral component.

Place the open face end of the Universal Torque Wrench onto the flats of the stem.

Tighten by pulling the wrenches **together**. Torque stem to 120 in-lbs as indicated on the Universal Torque Wrench. **(Figure 45)**

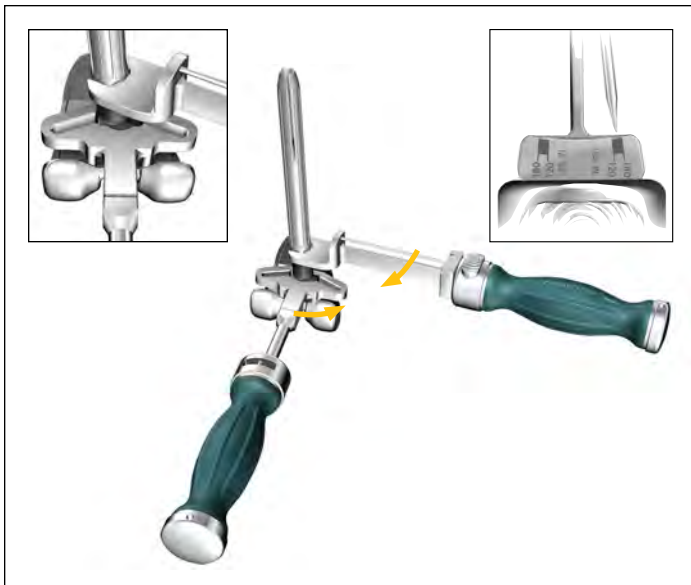


Figure 45

Femur with Stem Extender

Using the Universal Counter Wrench with the Femur side up, hold the femur in place by placing the box into the gap. Thread the Stem Extender into the Femoral Component.

Place the open face end of the Universal Torque Wrench on the flats of the Stem Extender. Tighten by pulling the wrenches **together**.

Torque stem to 120 in-lbs as indicated on the Universal Torque Wrench. **(Figure 46)**



Figure 46

Instrument bar

See Catalog

Universal Tibial Baseplate



See Catalog

Triathlon Tibial Augment



See Catalog

Triathlon Cemented Stem



See Catalog

Triathlon Fluted Stem, Titanium



See Catalog

Triathlon TS Offset Adapter



See Catalog

Triathlon Stem Extender



6543-4-818

Universal Torque Wrench



6543-4-803

Offset Counter Wrench



6541-4-825

Slip Torque Handle



6541-4-802

1/8" Hex Drive



6543-4-801

Universal Counter Wrench



See Catalog

Triathlon TS Femoral Component





Figure 47

Femur with Offset Adapter

Ensure jam nut is up against the Offset Adapter, exposing all threads.

Thread the Offset Adapter into the Femoral Component until the jam nut bottoms out on the femoral boss. **(Figure 47)**

Dial the rotation of the Offset Adapter to the position recorded from the Femoral Offset Bushing by turning the Offset Adapter counterclockwise and aligning the tick mark on Offset Adapter to the tick mark on the femoral boss.

Holding the Offset Adapter in place, turn the jam nut **counterclockwise** and hand tighten it against the femoral boss. This will hold the construct in the appropriate position for final tightening.

Holding the Universal Torque Wrench in the **left hand**, place the open face end of wrench onto the flats of the jam nut.

Next, holding the Offset Counter Wrench in the **right hand**, place the open face end of the wrench on the flats on the Offset Adapter. **(Figure 48)**

Tighten by pulling the wrenches **together**. Torque to 120 in-lbs as indicated on the Universal Torque Wrench.

Thread the appropriate size stem into Offset Adapter.

Now, holding the Universal Torque Wrench in the **right hand**, place the open face end of the wrench onto the flats of the stem.

Hold the Offset Counter Wrench in the **left hand** and place the open face end of the wrench on the flats of the Offset Adapter. **(Figure 49)**

Tighten by pulling the wrenches **together**. Torque Stem to 120 in-lbs as indicated on the Universal Torque Wrench.

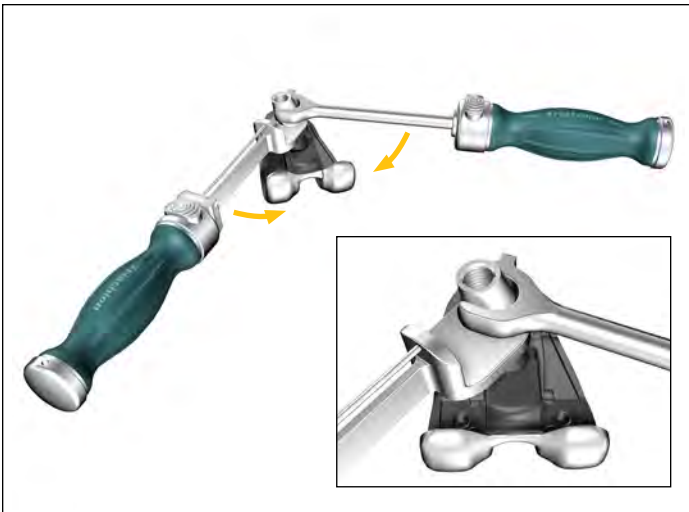


Figure 48

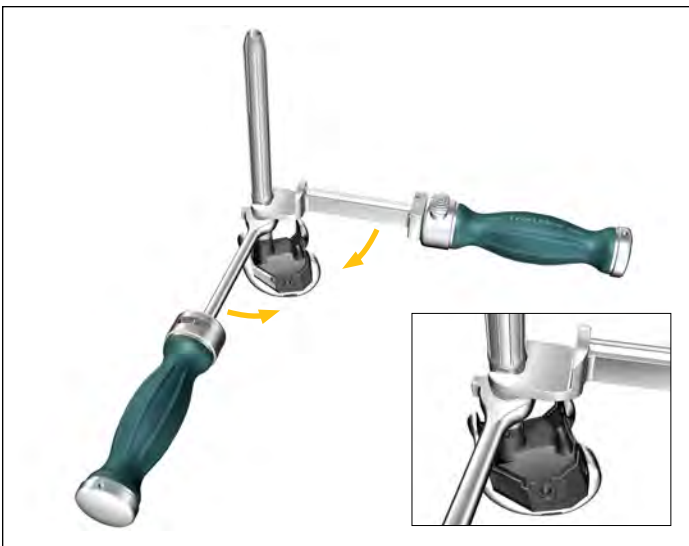


Figure 49

Component implantation

If needed, further prepare resected bone surfaces using an osteotome, oscillating saw or bone file.

Tibial implant implantation

Attach the Tibial Impactor/Extractor to the Impaction Handle. Assemble the tibial implant assembly to the Tibial Impactor/Extractor. Apply cement to the appropriate sections of the tibial implant assembly and the proximal tibia. Impact the tibial implant assembly onto the tibia until fully seated and remove all excess cement. To further seat the baseplate, attach the Tibial Baseplate Impactor to the Impaction Handle. Place the Tibial Baseplate Impactor on to the Tibial Baseplate straddling the central island. Ensure the Tibial Baseplate Impactor sits flat on the top surface of the Tibial Baseplate. Impact until the Tibial Baseplate is fully seated.

Femoral implant implantation

Attach the Femoral Impactor/Extractor to the Impaction Handle. Assemble the Femoral Implant Assembly to the Femoral Impactor/Extractor. Apply cement to the appropriate sections of the Femoral Implant Assembly and the cut surfaces of the femur. Impact the Femoral Implant Assembly onto the femur until fully seated and remove all excess cement. The Femoral Impactor can be attached to the Impaction Handle to further seat the Femoral Component onto the prepared femur.

Tibial Insert

Prior to applying the TS Tibial Insert, the Tibial Insert Trial may be placed on the Universal Baseplate to once more assess joint stability and range of motion.

Attach the Tibial Insert Impactor to the Impaction Handle. Ensure that the Universal Baseplate is completely free of debris. Angle the TS Tibial Insert posteriorly into the Universal Baseplate. Impact the insert to snap it into place anteriorly.

Stabilizer pin

Place the Insert Stabilizer Pin into Tibial Insert post “barbed” end up. Using the Stabilizer Post Impactor, tap the Insert Stabilizer Pin down until it is below the proximal surface of the Tibial Insert post.

Note:

The Insert Stabilizer Pin is packaged with the Tibial Insert.

Closure

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.



Figure 50

Instrument bar

6543-4-818



Universal Torque Wrench

6543-4-803



Offset Counter Wrench

See Catalog



Triathlon Cemented Stem

See Catalog



Triathlon Fluted Stem, Titanium

See Catalog



Triathlon TS Offset Adapter

See Catalog



Triathlon Stem Extender

See Catalog



Triathlon TS Femoral Component

6543-4-600



Stabilizer Post Impactor

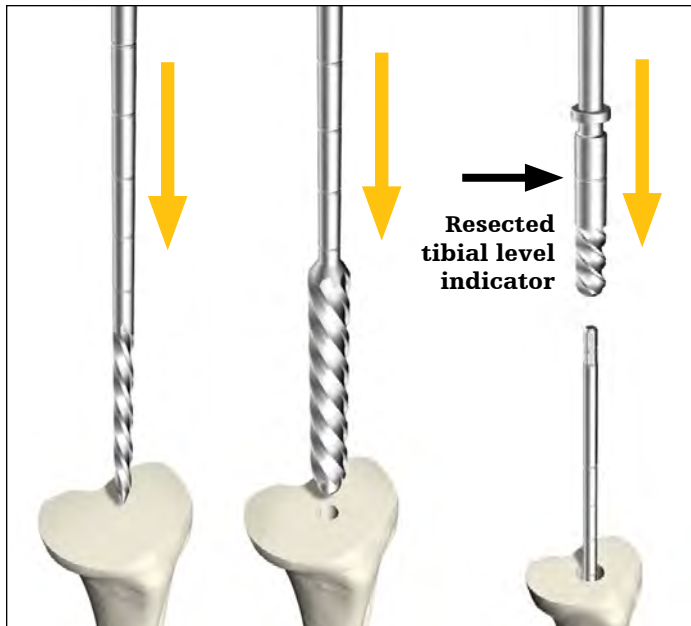


Figure 51

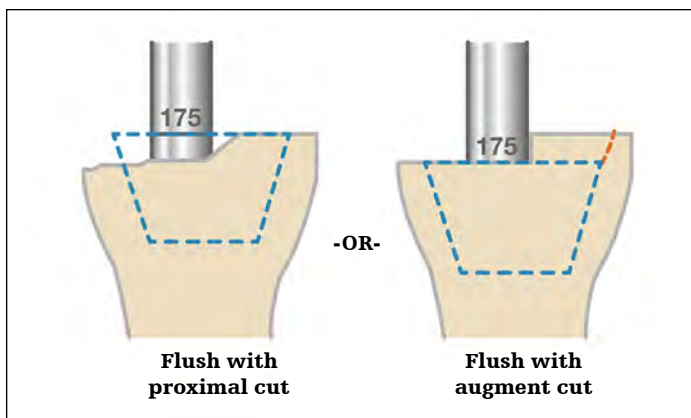


Figure 52

Triathlon Tritanium Cone Augment preparation

Tibial preparation

To prepare for the tibia, reference the Tibial preparation, Offset preparation and Tibial Augment preparation sections of the protocol (Pages 6-11). The next section specifies details for tibial preparation with Cone usage.

Tibial canal preparation (cones)

Prepare the tibial canal to accept a stem as described on page 6 of the protocol.

Option 1: Reamer-based

When using a Symmetric/Asymmetric Cone, a minimum depth of 175mm is recommended for the IM Reamer to facilitate accurate cone reaming and to ensure that the flutes on the Tibial Symmetric Cone Reamer do not interfere with the flutes on the IM Reamer.

Tap the final IM Reamer gently with a mallet to ensure that it is fully seated.

Note:

If TS Tibial Augments are to be used, ream until the 175mm marking is flush with the augment cut. Use the bottom of the 175mm line marking as the depth reference. See **Figure 52**.

Note:

If the reamer diameter is less than 16mm, prepare for the boss of the tibial component by reaming over the top of the IM Reamer shaft with the Boss Reamer. Ream until the Boss Reamer bottoms out on the IM Reamer or until the depth groove lines up to the planned resected tibia. (**Figure 51**)

Option 2: Stem Extender-based

Ream to 175mm with the desired diameter IM Reamer. Ensure that purchase into the canal has been achieved.

Ream over the top of the IM Reamer with the Boss Reamer. Ream until the Boss Reamer bottoms out on the IM Reamer or until the stop collar lines up to the planned resected bone depth. Remove both the IM Reamer and the Boss Reamer.

Assemble the Stem Extender Shaft to the appropriate diameter Stem Trial and place the assembly into the canal.

Continue with tibial preparation as described in the protocol.

Ream depth: tibial components with cones

Stems (with cones)	Depth
100mm	175 (3rd groove)
100mm w/offset	175 (3rd groove)
150mm	175 (3rd groove)
150mm w/offset	200 (4th groove)

Note:

When reaming with Stem Extenders, ream an additional 25mm or 50mm accordingly.

Instrument bar

6543-7-508



8mm Starter Awl

See Catalog



IM Reamer

6543-7-527



Boss/Offset Reamer

6543-4-516



Stem Extender Shaft

Preliminary cone sizing

Depending on the size and geometry of bone defect, either a symmetric or asymmetric tibial cone augment may be selected. Inverting a contralateral leg cone trial may help determine bone defect, assess cone coverage and determine if a symmetric or asymmetric cone is required.

Note:

Invert the Cone Trial over the resected tibial bone and ensure that the trial is centered on the IM Reamer. **(Figure 53)** Centering the trial helps to provide proper positioning.

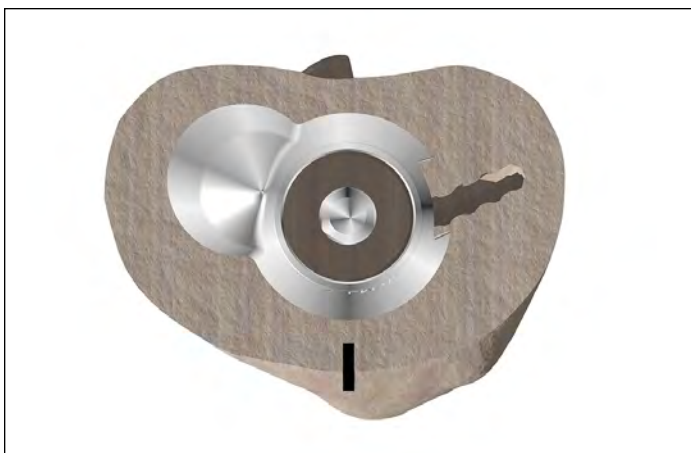


Figure 53



Figure 54



Figure 55

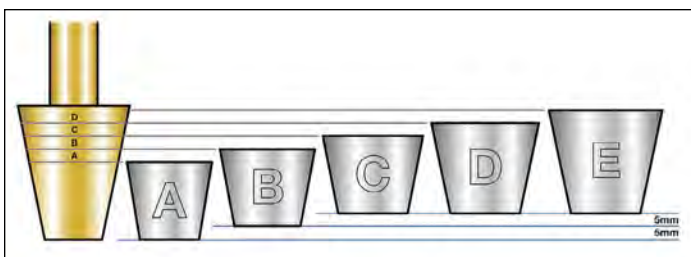


Figure 56

Symmetric tibial cone preparation

Ensure that the Tibial Symmetric Cone Reamer is being used. This can be confirmed by checking that the reamer shaft reads "TIBIA."

Grooves on the reamer specify cone size. **(Figure 54)** Reference the sizing chart to help determine appropriate cone sizing (see chart on the next page for cone and Universal Baseplate sizing options).

Note:

Use the top line of the groove (of the desired size) as the depth reference.

Insert the Tibial Symmetric Cone Reamer over the IM Reamer. **(Figure 55)** If reaming under power, confirm that the drill is set to ream mode before reaming begins.

Start the reamer before engaging the bone. Ream down to the desired depth/size.

Caution:

If the bone is soft, osteopenic, fractured or sclerotic, consider initially reaming by hand using the T-handle.

Remove both the Tibial Symmetric Cone Reamer and the IM Reamer.

If using an augment or offset, see the next page to help determine proper preparation depth.

Note:

If the cone needs to be placed in a slightly more posterior position, remove the IM Reamer and replace it with an IM Reamer of a smaller diameter. Place the Tibial Symmetric Cone Reamer over the IM Reamer and gently flex it posteriorly. Ream down to the desired depth/size.

Note:

Confirm that the Tibial Symmetric Cone Reamer is not being hindered by the cutting surface of the flutes on the IM Reamer. If so, the IM Reamer may need to be placed in a more distal position.

Note:

Reamer depth increases by 5mm per size.

Implant sizes	Tibial Cone sizes				
	A	B	C	D	E
Size 1	X				
Size 2	X				
Size 3	X	X			
Size 4		X	X		
Size 5		X	X	X	
Size 6		X	X	X	X
Size 7				X	X
Size 8				X	X
Distal diameter (OD)	21mm	23mm	25mm	25mm	25mm
Max stem dia. (ID)	17mm	19mm	21mm	21mm	21mm

Tibial Cone sizing per tibial baseplate. Gold represents optimal size conditions.

Note: Cones B, C, D and E also have an asymmetric lobed option. Cones smaller than those marked with an X are designed to be compatible but need to be positioned at least 5mm deeper. If these sizes are to be used, rotational freedom between the tibial implant and the cone may be limited with non size on size combinations. Trial to assess compatibility.

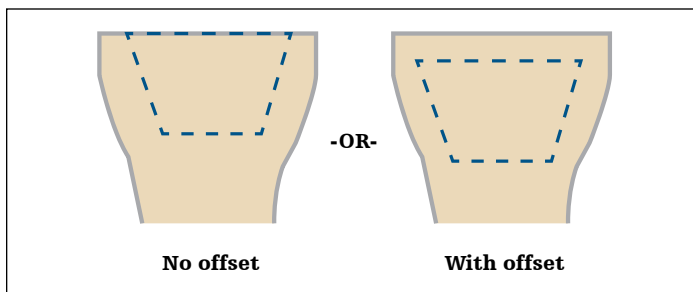


Figure 57

If an Offset Adapter is to be used, advance the reamer to the next largest Cone size. This will be 5mm deeper. (Figure 57)

Cone sizes C, D and E (Symmetric and Asymmetric) can only be offset according to the following clocking orientations: 9-12 (posterior) or 12-3.

Note:

If using an Offset Adapter, trial to confirm proper offset orientation.

Note:

Tibial Cone sizes A and B (Symmetric and Asymmetric) are not intended for use with Offset Adapters.

If augments are to be used, the size marking of the Tibial Symmetric Cone Reamer will indicate where the Cone will sit. Ream until the marking is flush with the augment cut. (Figure 52 on page 28)

Instrument bar

See Catalog



IM Reamer



See Catalog

Symmetric Cone Augment Trial

6543-5-200



Tibial Symmetric Cone Reamer

Symmetric Cone trialing

If bone voids are such that Asymmetric Cone preparation is necessary, refer to the Asymmetric Cone Preparation section of the protocol.

Note:

Cone trial may be placed in the prepared bone prior to assembling the instruments as described below.

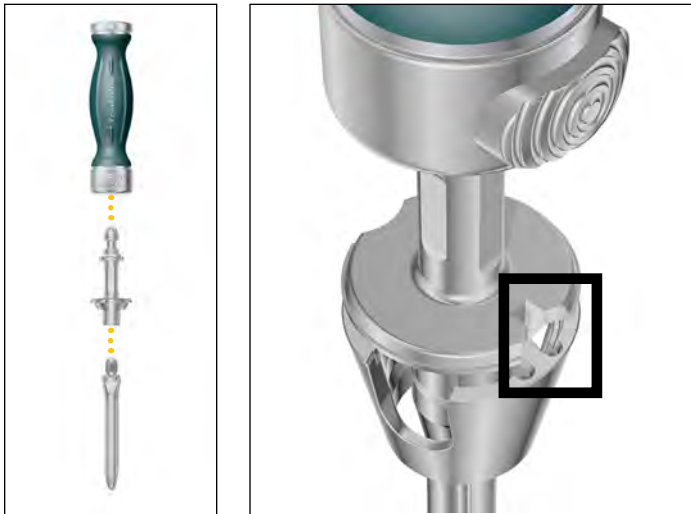


Figure 58



Figure 59

Assemble the desired Stem Trial with the Tibial Cone Introducer, TS Impaction Handle and the selected Symmetric Cone Trial (100mm stem maximum).

Tibial Cone Introducers are size specific.

Note:

Downsize the Trial Stem by 1mm.

Align the orientation key on the trial with the key feature on the Cone Introducer. The orientation key is located posteriorly on the trial. **(Figure 58)**

Note:

There is no positive lock on the Cone Trial and the Cone Introducer. The trial may disconnect from the introducer.

Note:

The Cone Trial can be placed into the prepared bone before the Stem Trial and the Cone Introducer.

When inserting the Cone Trial, ensure that the anterior rotational alignment marking on the trial is aligned with the anterior surface marking previously determined by the Universal Tibial Template. **(Figure 59)**

Insert the trial until it is seated at the appropriate depth. Remove the Cone Introducer and the Stem Trial so that only the Cone Trial remains in the void.

Caution:

Do not impact or implant the Cone Trials.

Note:

Stem Trials with product code 5560-T-XXX cannot be used with cone augment instrumentation. This includes trials 5560-T-112 and 5560-T-115.

Options if added Cone stability is required:

Ream to a larger Symmetric Cone (Repeat steps from the Symmetric Cone Preparation section of the protocol).

Or prepare for an Asymmetric Cone (Follow the steps from the Asymmetric Cone Preparation section of the protocol).

Or implant the Cone with cement.

Asymmetric Tibial Cone preparation

Asymmetric Cone preparation is an option for increased stability and void filling after Symmetric Cone reaming has been completed.

Symmetric Cone preparation must be performed before Asymmetric Cone preparation can begin. Refer to the Symmetric Cone Preparation section of the protocol.

During Asymmetric Cone preparation, be sure to properly set cone rotation to ensure proper alignment with the Universal Baseplate.

Slide the appropriate Tibial Cone Reamer Guide over the IM Reamer and into the prepared tibia. **(Figure 60)**

Note:

There are two Tibial Cone Reamer Guides. One is designed for left medial/ right lateral use, and the other is designed for right medial/left lateral use.

Note:

Do not fully seat the Tibial Cone Reamer Guide until after rotation is set.

Attach the Tibial Cone Alignment Guide (Handle) to the Tibial Cone Reamer Guide. **(Figure 61 on page 34)**

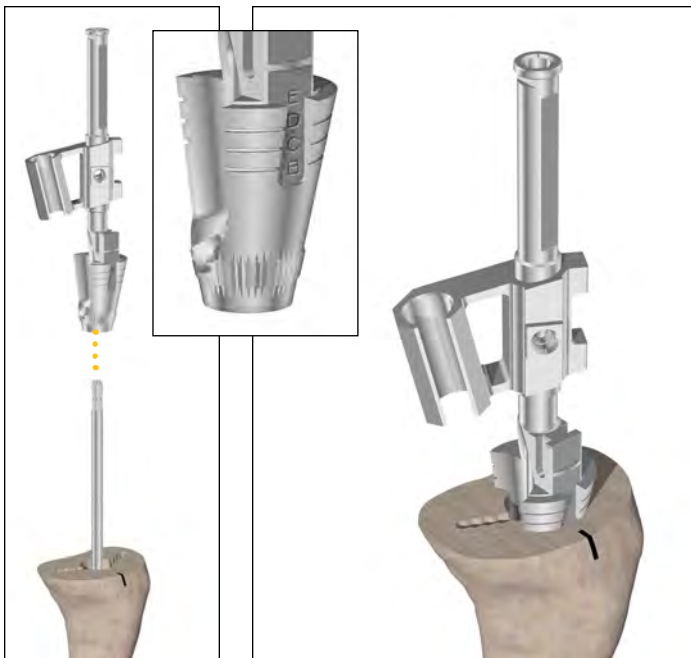


Figure 60

Instrument bar

6541-4-810

Impaction Handle



6543-5-231

Tibial Cone Introducer



See Catalog

Symmetric Cone Augment Trial



See Catalog

Triathlon Stem Trial



See Catalog

Tibial Cone Reamer Guide
LM/ RL
RM/ LL



See Catalog

IM Reamer



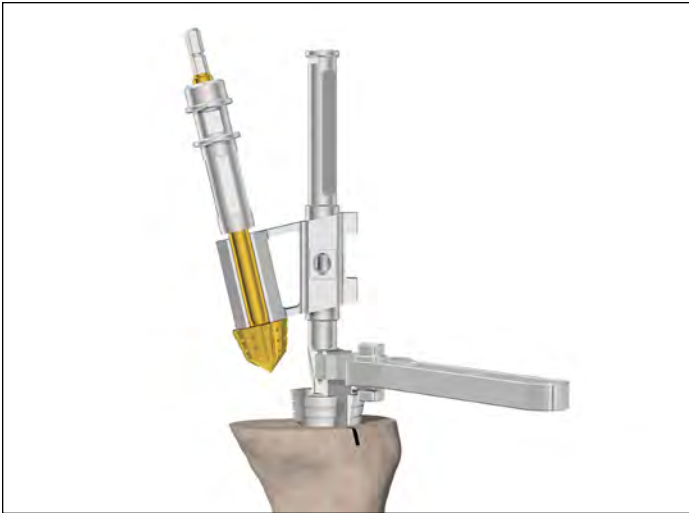


Figure 61

Insert the Tibial Asymmetric Cone Reamer into the Tibial Cone Reamer Guide to assist in visualization of guide positioning.

Select the correct reamer to match the cone size.

Slide back the bushing on the reamer and place the reamer into the slot of the guide. **(Figure 63)**

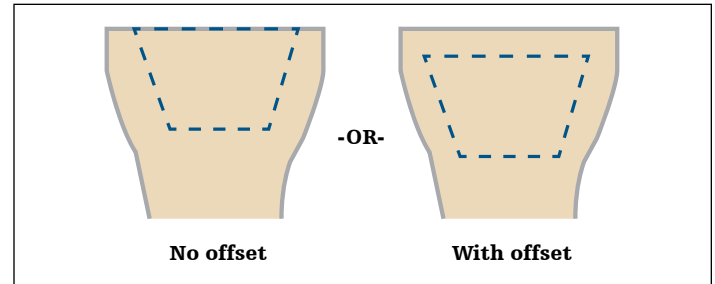


Figure 62



Figure 63

Sizing example

No stem offset	With stem offset
Symmetric Reamer depth (C)	Symmetric Reamer depth (D)
Alignment Guide level of embedment (C)	Alignment Guide level of embedment (D)
Asymmetric lobe Reamer size (C)	Asymmetric lobe Reamer size (C)
Asymmetric implant size (C)	Asymmetric implant size (C)

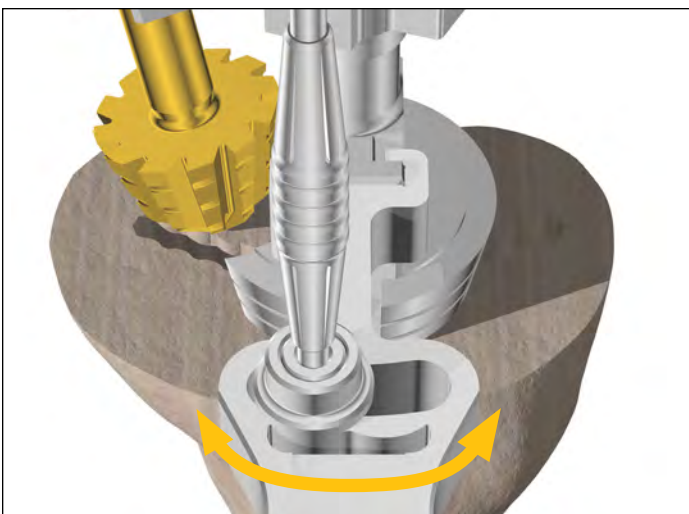


Figure 64

Insert the Universal Alignment Rod into the bushing on the Tibial Cone Alignment Guide (Handle).

Note:

The Universal Alignment Rod is only intended to help align anterior rotation markings to help ensure proper cone positioning/rotation.

Lower the Tibial Asymmetric Cone Reamer down to the desired location.

Use the Tibial Cone Alignment Guide (Handle) to position the reamer and rotate the guide. The assembly can be rotated by using the built in rotational constraints (+/- 10°). **(Figure 64)**

Once the desired positioning is established, move the Universal Alignment Rod so that it aligns with the anterior rotational marking previously set using the Universal Tibial Template. This will help to ensure that desired tibial rotation is maintained.

If the Universal Alignment Rod does not line up with the anterior marking, reduce rotation until it does so.

Note:

If an Offset Adapter is to be used, the Alignment Rod bushing must align within the two 5° alignment markers. **(Figure 64)**

The Tibial Cone Reamer Guide has micro-flutes at its base to maintain rotation once set.

After alignment has been set, seat the Tibial Cone Reamer Guide so that it sits at the same depth/size as the Tibial Symmetric Cone Reamer. **(Figure 65)**



Figure 65

Instrument bar

See Catalog



Tibial Asymmetric Cone Reamer

See Catalog



Tibial Cone Reamer Guide
LM/ RL
RM/ LL

6543-5-203



Tibial Cone Alignment Guide

6541-4-602



Universal Alignment Rod



Figure 66

If reaming under power, confirm that the drill is set to ream mode before reaming begins.

Before reaming begins, ensure that the bushing is fully engaged.

Caution:

If the bone is soft, osteopenic, fractured or sclerotic, consider initially reaming by hand using the T-handle.

Hold the Tibial Cone Alignment Guide (Handle) in the previously determined location to maintain rotation.

Start the reamer before engaging the bone. Ream down to the stop. **(Figure 66)**

Remove the reamer from the guide. If necessary, the Slap Hammer can be connected to the end of the Tibial Cone Alignment Guide to assist with guide removal.

Remove the IM Reamer.

Asymmetric Cone trialing

Note:

The Cone Trial can be placed into the prepared bone before the Stem Trial and the Cone Introducer.

Assemble the desired Stem Trial with the Tibial Cone Introducer, TS Impaction Handle and the selected Asymmetric Cone Trial (100mm stem maximum).

Tibial Cone Introducers are intended for use with both Symmetric and Asymmetric Cones.

Note:

Downsize the Stem Trial by 1mm.

Align the orientation key on the trial with the key feature on the Cone Introducer. The orientation key is located posteriorly on the trial. **(Figure 67)**

Note:

There is no positive lock on the Cone Trial and the Cone Introducer. The trial may disconnect from the introducer.

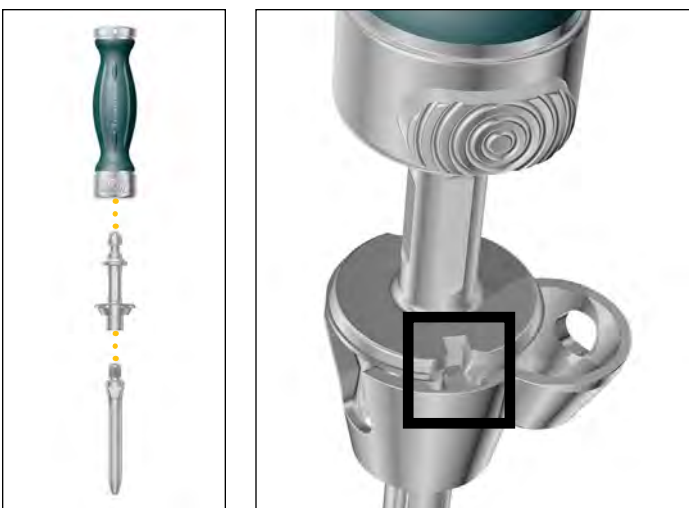


Figure 67

Insert the trial until it is seated at the appropriate depth. **(Figure 68)** Remove the Cone Introducer and the Stem Trial so that only the Cone Trial remains in the void.

Caution:

Do not impact or implant Cone Trials

Note:

Stem Trials with product code 5560-T-XXX cannot be used with cone augment instrumentation. This includes trials 5560-T-112 and 5560-T-115.

Options if added Cone stability is required:

Ream for a larger Asymmetric Cone (repeat steps from the Asymmetric Cone Preparation section of the protocol).

Or implant the Cone with cement.



Figure 68

Instrument bar

6543-5-203

Tibial Cone Alignment Guide



See Catalog

Tibial Asymmetric Cone Reamer



See Catalog

Tibial Cone Reamer Guide
LM/ RL
RM/ LL



6541-4-602

Universal Alignment Rod



6541-4-810

Impaction Handle



6543-5-231

Tibial Cone Introducer



See Catalog

Asymmetric Cone Augment Trial



See Catalog

Triathlon Stem Trial





Figure 69

Femoral preparation

To prepare the femur, reference the Femoral Preparation and Gap Balancing sections of the protocol (pages 12-21).

Intramedullary reaming for Cones

Prepare the femoral canal to accept a stem as described on page 12.

If not previously completed, mark femoral rotation using epicondylar landmarks. (**Figure 69**)

A minimum depth of 175mm is recommended for the IM Reamer to facilitate accurate cone reaming and to ensure that the flutes on the Cone Reamer do not interfere with the flutes on the IM Reamer.

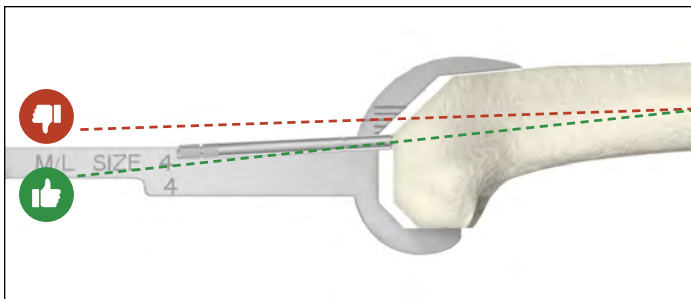


Figure 70

Note:

Use the Triathlon TS sizing templates and epicondylar markings (**Figure 70**) to determine if the IM Reamer is positioned too far anteriorly. If so, flex the reamer to attain a more posterior position (downsize the reamer if necessary).

Note:

If TS Femoral Distal Augments are to be used, ream until the 175mm marking is flush with the augment cut. Use the bottom of the 175mm line marking as the depth reference.

Tap the final IM Reamer gently with a mallet to ensure that it is fully seated.

Note:

If the final IM Reamer diameter is less than 16mm, prepare for the boss of the femoral component by reaming over the top of the IM Reamer shaft with the Boss Reamer. Ream until the Boss Reamer bottoms out on the IM Reamer or until the stop collar lines up to the planned resected bone depth.

Option: Stem Extender-based workflow

If desired, the IM Reamer can be removed and subsequent preparation can be based off of a Stem Trial utilizing the required Stem Trial and the Stem Extender Shaft.

Assemble the Stem Extender Shaft to the appropriate diameter Stem Trial and place the assembly into the canal.

Continue with femoral preparation as described in the protocol.

Ream depth: femoral components

Stems	Femur
50-100mm	150
100mm w/offset	175
Femoral Cone	175*
150mm	200
150mm w/offset	225

Note:

When reaming with Stem Extenders, ream an additional 25mm or 50mm accordingly.

*When preparing for size 7-8 Cones, ream an additional 5mm deeper to prevent the Cone Reamer from bottoming out on the IM Reamer.

Distal femoral resection

Refer to pages 13-14 for sections on Distal Femoral Resection and Augment Preparation.

Reminder:

If TS Femoral Distal Augments are to be used, ream until the 175mm marking is flush with the augment cut. Use the bottom of the 175mm line marking as the depth reference.

Femoral implant sizing

Determine femoral implant size by using the Femoral Sizing Templates (**Figure 71**) or by measuring the previous femoral implant.

Once the proper femoral implant size has been determined, use the sizing chart on page 40 to help determine possible rotational constraints between the box of the TS Femoral Component and the Central Femoral Cone.

The chart also provides sizing information for use with posterior augments.

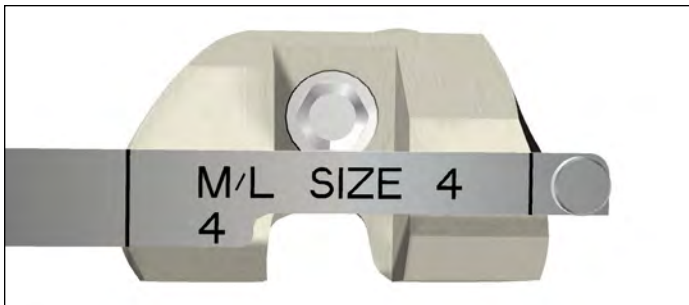


Figure 71

Gap balancing

For gap balancing and resections, reference pages 15-18 of the protocol.

Note:

Femoral Cones are not intended to be used with Offset Adapters.

Note:

Reverify femoral rotation using either the epicondylar axis or by marking pin location from the cutting guide.

Note:

Assess the TS box cut. If necessary, remove the reamer and complete the cuts. Ensure that the IM Reamer is repositioned into the canal once the cuts are complete. Gently tap the reamer to reattain proper seating. TS box cuts should be performed before cone reaming.

Instrument bar

See Catalog

IM Reamer



6543-1-603

Size 1-8 Femoral Sizing Templates



TS femur size	Femoral Cone sizes				
	1-2	3-4	5	6	7-8
1					
2					
3					
4					
5					
6					
7					
8					
Proximal diameter (OD)	21mm	23mm	25mm	27mm	29mm
Max stem dia. (ID)	16mm	17mm	19mm	21mm	22mm

- Allows for ± 10° rotational freedom with 5 or 10mm posterior augments
- Allows for ± 10° rotational freedom with 5mm posterior augments only
- Rotational freedom between the Cone Augment and the TS femur is limited. Trial to assess compatibility.
- Allows for +/- 5° of rotational freedom

Preliminary Cone selection and sizing

Depending on the size and geometry of the bone defect, either cone shape may be selected.

Inverting a contralateral leg Cone Trial can help size the bone defect, assess cone coverage and determine if a Central or Femoral Cone is required.

- **Proceed either to Option 1:** Central Femoral Cone or **Option 2:** Femoral Cone procedural steps of this protocol

Note:

Invert the Cone Trial over the resected femoral bone and ensure that the trial is centered on the IM Reamer. Centering the trial helps to provide proper positioning.

Option 1: Central Femoral Cone preparation

Ensure that the Central Femoral Cone Reamer is being used. This can be confirmed by checking that the reamer shaft is silver in color and that the shaft reads "TS Central Femur." (**Figure 72**)

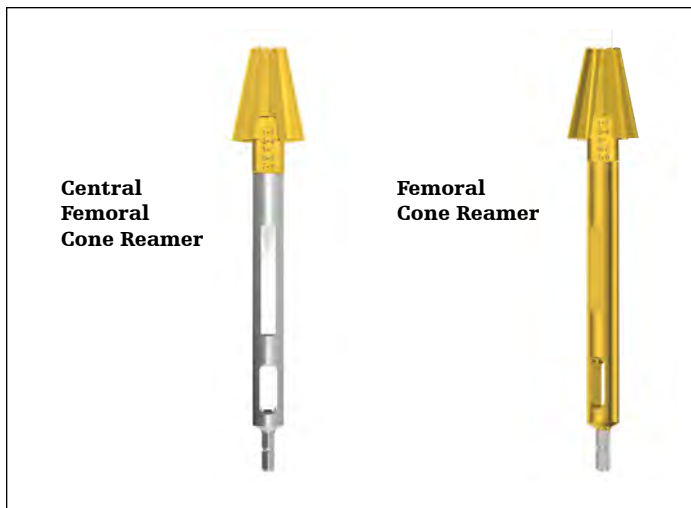


Figure 72

Insert the Central Femoral Cone Reamer over the IM Reamer or Stem Extender. If reaming under power, confirm that the drill is set to ream mode before reaming begins. **(Figure 73)**

Start the reamer before engaging the bone. Ream down to the desired depth for bone void coverage.

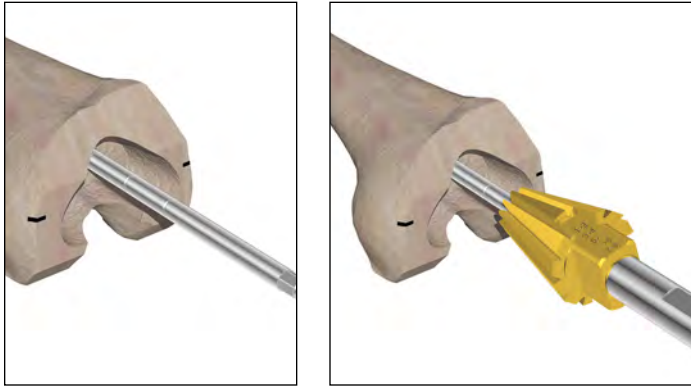


Figure 73

Caution:

If bone is soft, osteopenic, fractured or sclerotic, consider initially reaming by hand using the T-handle.

Caution:

Stop reaming if contact with the posterior cortex of the femur causes the Central Femoral Cone Reamer to deflect anteriorly. **(Figure 74)** If bone void is not adequately filled by the corresponding size Central Femoral Cone, consider using a Femoral Cone (by proceeding to option two: Femoral Cone assembly and subsequent steps of the protocol) or use alternative methods to fill void.

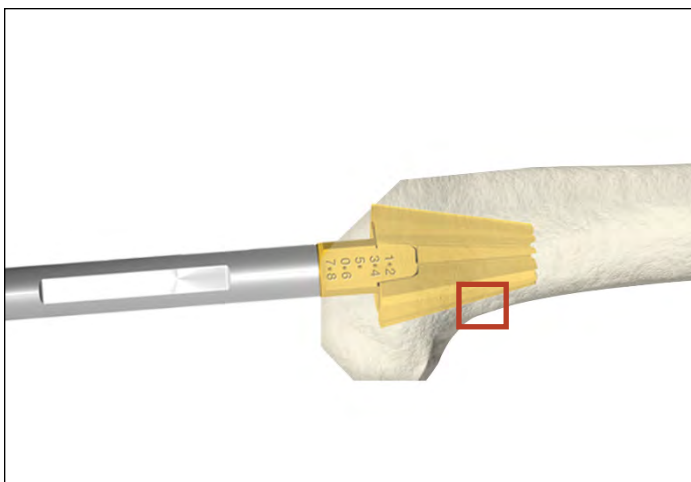




Figure 74

Instrument bar

See Catalog 
IM Reamer

6543-4-516 
Stem Extender Shaft

6543-6-130 
TS Central Femoral Cone Reamer

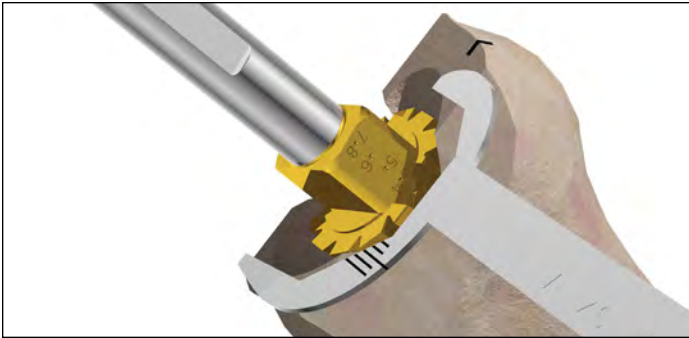


Figure 75

To determine size of the Central Femoral Cone, utilize the Femoral Sizing Templates. Ensure that the distal femoral cut intersects the dot marking. The dot signifies the surface of the resected plane. (Figure 75)

Caution:

Stop the reamer before using the Femoral Sizing Templates.

Note:

Ream until the dot marking is flush with the most distal surface of the cut. Dot marking must be directly anterior.

Note:

Confirm that the Central Femoral Cone Reamer is not being hindered by the cutting surface of the flutes on the IM Reamer. If so, the IM Reamer may need to be placed in a more proximal position.

Note:

Dot markings on the reamer increase in depth by 5mm.

Caution:

If augment cuts have been completed, there may be interference between the leg of the cone and the Femoral Distal augment. In the case of a 10mm difference between the cut surfaces (Figure 77), it is recommended to downsize the Central Femoral cone by one size. In the case of a 15mm difference between the cut surfaces (Figure 78), it is recommended to downsize the Central Femoral Cone by two sizes. If this is not possible, downsize by one size and/or reduce the thickness of the Femoral Distal Augment.



Figure 76

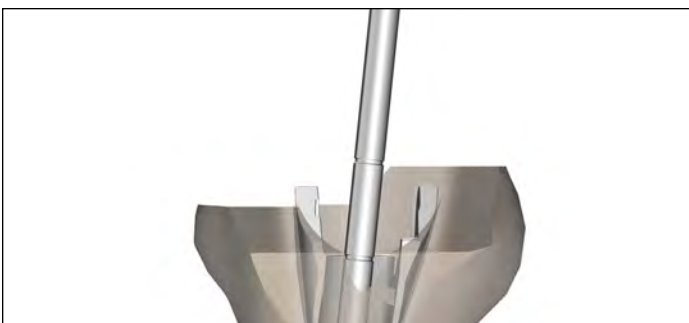


Figure 77



Figure 78

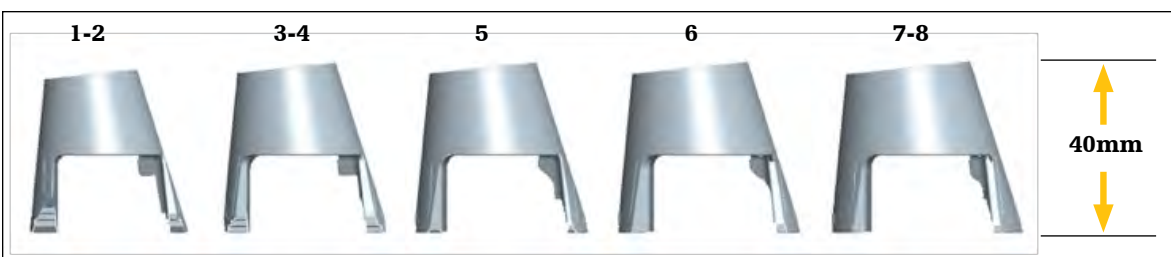


Figure 79

Central Femoral Cone trialing

The Central Femoral Cone Trial can be placed in the prepared bone. Assemble the desired Stem Trial with the corresponding Central Femoral Cone Introducer and TS Impaction Handle. There are two Central Femoral Cone introducers: One for sizes 1-4 Central Femoral Cones and another for sizes 5-8. Ensure correct side (L or R marking) is facing anterior.

Note:

Stem Trials with product code 5560-T-XXX cannot be used with cone augment instrumentation. This includes trials 5560-T-112 and 5560-T-115.

Align the orientation keys on the Introducer with the feature on the Cone Trial. The orientation keys are located medially and laterally on the trial.

Caution:

There is no positive lock on the Central Femoral Cone Trial and the Cone Introducer. If inserting the Trial on the Introducer, be aware that the Cone Trial may disconnect from the Introducer.

Caution:

Do not impact or implant the Central Femoral Cone Trials.

The Central Femoral Cone Trial/Implant is designed to sit 5mm proximal to the most distal surface of the femur. **(Figure 80)** If Central Femoral Cone Trial/Implant sits flush with the distal surface, there is chance of interference with the box of the TS Femoral Component.

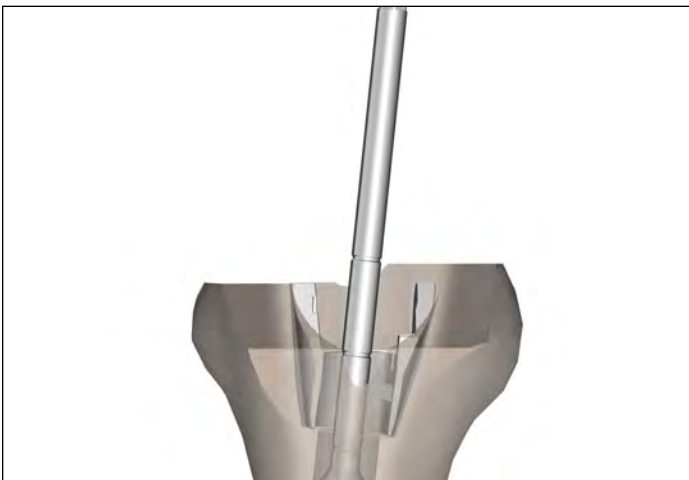


Figure 80

Instrument bar

See Catalog

IM Reamer



6543-6-128

6543-6-129



[Size 1-4] Central Femoral Cone Introducer

[Size 5-8] Central Femoral Cone Introducer

See Catalog

Central Femoral Cone Augment Trial

6541-4-810

Impaction Handle





Figure 81

Confirm the depth of the Central Femoral Cone Trial by placing the Blade Runner into the slot on the Central Femoral Cone Introducer. Proper depth can be confirmed if the Blade Runner contacts the distal surface of the femur. (**Figure 81**) If a gap exists between the Blade Runner and the distal surface of the femur, consider downsizing the Central Cone or re-reaming deeper.

Confirm that the rotation of the Central Femoral Cone Trial aligns with previous epicondylar markings. The Blade Runner can be placed in the slot of the introducer to aid in visualizing alignment (**Figure 82**).

Note:

Refer to compatibility chart for rotational limitations between the Central Femoral Cone and TS Femoral Component.

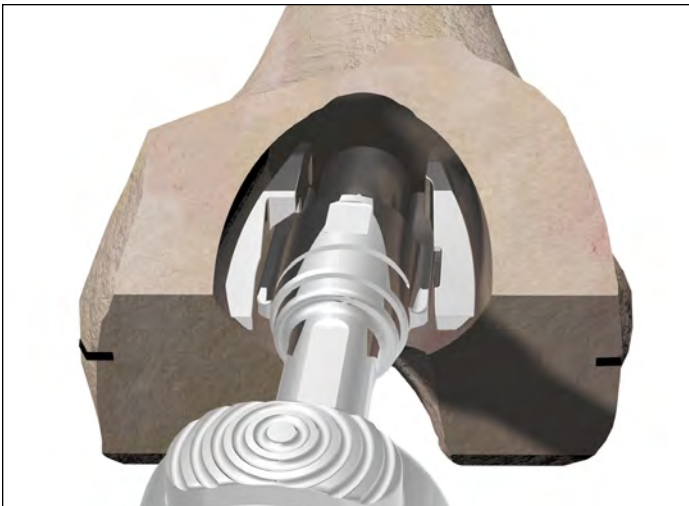


Figure 82

Options if added Cone stability is required:

Ream to a larger Central Femoral Cone (repeat steps from the Femoral Cone preparation section of the protocol).

Convert to a Femoral Cone (starting at Femoral Cone Reamer Guide assembly step of the protocol).

Implant the Central Femoral Cone with cement.

Option 2: Femoral Cone preparation

Ensure that the Femoral Symmetric Cone Reamer is being used. This can be confirmed by checking that the reamer shaft is gold in color and that the shaft reads "Femur".

Reference the Femoral Cone sizing chart to help determine appropriate cone sizing, as well as TS femoral compatibility (See chart on the following page).

Insert the Femoral Symmetric Cone Reamer over the IM Reamer. If reaming under power, confirm that the drill is set to ream mode before reaming begins.

Start the reamer before engaging the bone. **(Figure 83)** Ream down to the desired depth/size. While reaming, periodically check the reamer depth (markings) to ensure proper measurement is achieved.

Caution:

If the bone is soft, osteopenic, fractured or sclerotic, consider initially reaming by hand using the T-handle.

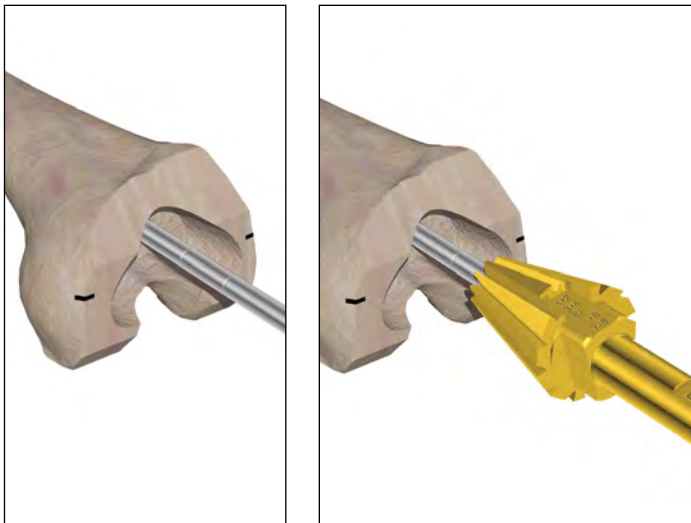


Figure 83

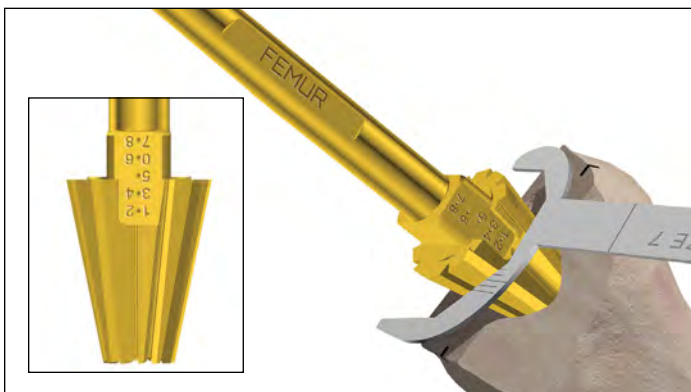


Figure 84

Instrument bar

See Catalog



IM Reamer

6543-5-300



Femoral Symmetric Cone Reamer

See Catalog



Triathlon Stem Trial



6543-6-128

6543-6-129



[Size 1-4] Central Femoral Cone Introducer

[Size 5-8] Central Femoral Cone Introducer

6541-4-810



Impaction Handle

See Catalog



Central Femoral Cone Augment Trial

6541-4-400



Blade Runner

TS femur size	Femoral Cone sizes						
	1-2	3	4	5	6	7-8	
1	Blue						
2	Blue	Green					
3	Blue	Green	Blue				
4		Green	Blue	Blue			
5			Green	Blue	Blue		
6				Green	Blue	Blue	
7					Green	Blue	
8						Green	
Proximal diameter (OD)	21mm	23mm	23mm	25mm	27mm	29mm	
Max stem dia. (ID)	16mm	18mm	18mm	20mm	22mm	22mm	

Green allows for 10mm posterior augments. Blue allows for 5mm posterior augments. Rotational freedom between the femoral implant and the Cone may be limited with non size on size combinations. Trial to assess compatibility.

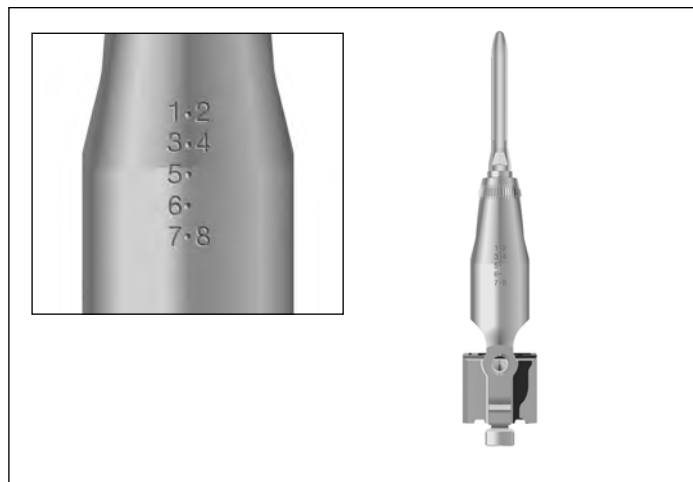


Figure 85

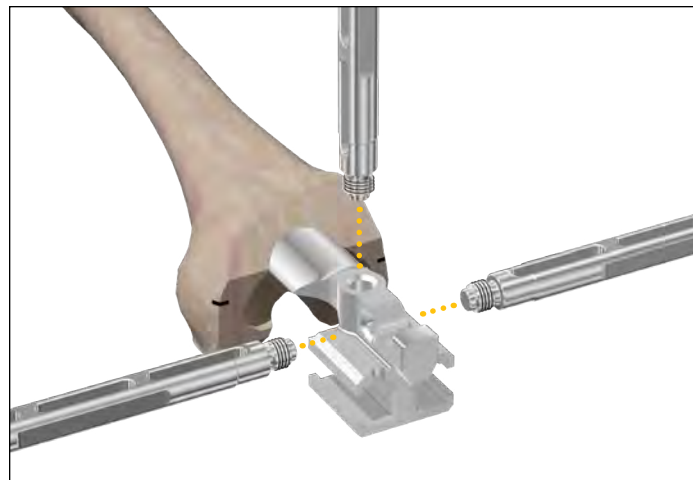


Figure 86

Utilize the Femoral Sizing Templates to ensure that the distal femoral surface intersects the dot marking. The dot signifies the surface of the resected plane. Stop the reamer before using the templates. (Figure 84 on page 45)

Note:

Dot markings must be directly anterior.

Remove both the Symmetric Femoral Cone Reamer and the IM Reamer.

If augments are to be used, the dot marking of the Symmetric Femoral Cone Reamer will indicate where the cone will sit. Ream until the dot marking is flush with the augment cut.

Note:

If the Cone needs to be placed in a slightly more posterior position, remove the IM Reamer and replace it with an IM Reamer of a smaller diameter. Place the Symmetric Femoral Cone Reamer over the IM Reamer and gently flex it posteriorly. Ream down to the desired depth/size.

Note:

Confirm that the Symmetric Femoral Cone Reamer is not being hindered by the cutting surface of the flutes on the IM Reamer. If so, the IM Reamer may need to be placed in a more distal position.

Note:

Reamer depth increases by 5mm between sizes.

Femoral Cone Reamer Guide assembly

Assemble the Femoral Cone Reamer Guide with a Stem Trial of the same diameter (or a 1mm smaller diameter) as the IM Reamer. (Figure 85) The stem must be at least 50mm shorter than the final stem (maximum 100mm Trial Stem).

Note:

The Femoral Cone Reamer Guide features dot markings to allow for easy depth referencing.

Note:

Stem Trials with product code 5560-T-XXX cannot be used with cone augment instrumentation. This includes trials 5560-T-112 and 5560-T-115.

Thread the Femoral Cone Handle into the guide and confirm positioning.

Use the Femoral Cone Handle to adjust rotation of the guide. The handle can also be used to provide extra stability during lobed femoral cone reaming.

Note:

The guide provides three handle insertion options: lateral, medial and anterior. (Figure 86)

Depth and sizing guide

Insert the Femoral Cone Reamer Guide into the IM canal. Position the guide so that the dot markings are anterior.

Insert the Femoral Cone Alignment Guide through the Femoral Cone Reamer Guide. Slide the guide until the alignment plate lies flush with the distal femoral surface. (**Figure 87**)

Note:

The Femoral Cone Alignment Guide must be assembled in the medial slot with the pull tab facing medially.

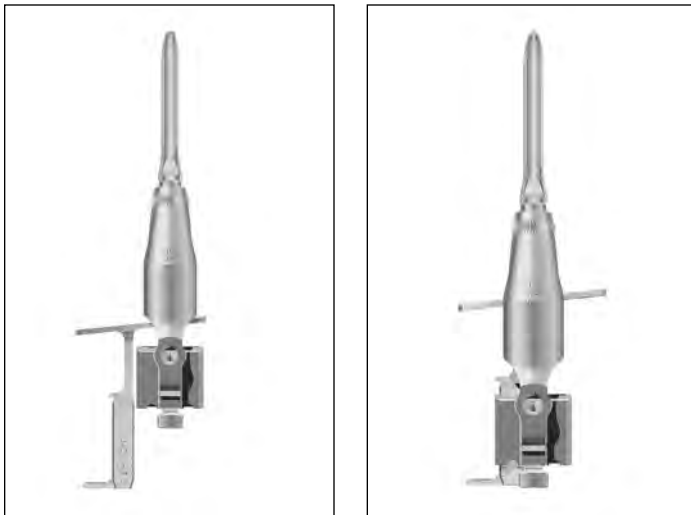


Figure 87

The slots in the alignment plate of the Femoral Cone Alignment Guide must be placed parallel to the epicondylar axis (or to the previous marks from the 4-in-1 Cutting Guide fixation pins) or parallel to the proximal tibia cut. (**Figure 88**) The posterior edge of the plate can be aligned parallel to the posterior femoral cut, if no augments are required, to reconfirm positioning. This will help to set femoral rotation (+/-5°).

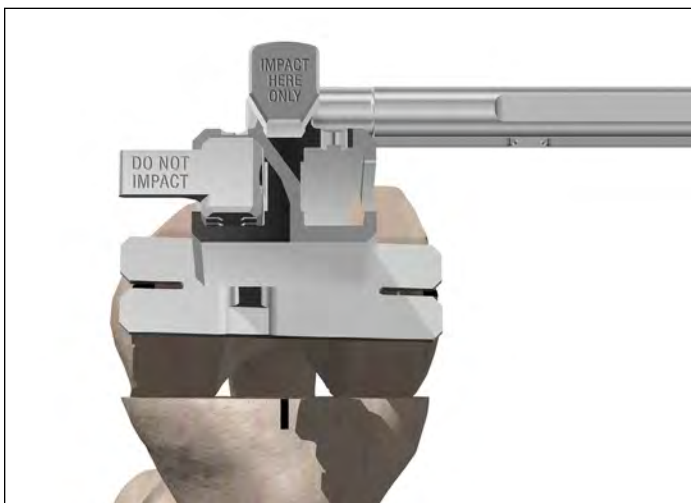


Figure 88

Instrument bar

See Catalog



IM Reamer

6543-5-300



Femoral Symmetric Cone Reamer

6543-5-301



Femoral Cone Reamer Guide

6543-5-302



Femoral Cone Handle

6543-5-303



Femoral Cone Alignment Guide

See Catalog



Triathlon Stem Trial

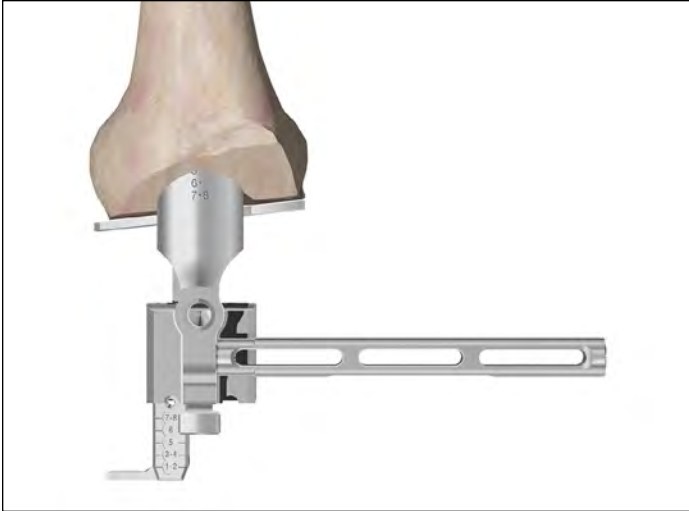


Figure 89

The Femoral Cone Reamer Guide has micro-flutes at its base to maintain rotation once set.

Note:

Do not fully seat the Femoral Cone Reamer Guide until after rotation is set. Seat the guide so that it sits at the appropriate depth marking.

Caution:

Gently tap the Femoral Cone Reamer Guide only in indicated area.

Caution:

Do not impact the Femoral Cone Alignment Guide.

Proper implant preparation can be determined by ensuring that the anterior surface markings of the Femoral Cone Reamer Guide and the numbers displayed on the end of the Femoral Cone Alignment Guide match. (Figure 89)

Note:

If sizing indicators do not match, re-ream with the Symmetric Femoral Cone Reamer and seat the guide deeper.

Utilize the Femoral Sizing Templates to reconfirm proper sizing.

Femoral Cone reaming (lobe preparation)

Evaluate medial and lateral bone quality. Perform initial reaming on the femoral section with poorer bone quality.

Use the Femoral Cone Handle to provide extra stability during reaming.

Insert the appropriate Femoral Cone Reamer into the Femoral Cone Reamer Guide, and ream for the first cone lobe. Keyway is designed to prevent incorrect assembly.

Note:

Fully engage the bushing before reaming. Confirm that the drill is set to ream mode.

Start the reamer before engaging the bone. Ream down to the stop. (Figure 90)

Caution:

If the bone is soft, osteopenic, fractured or sclerotic, consider initially reaming by hand using the T-handle.

Remove the reamer.

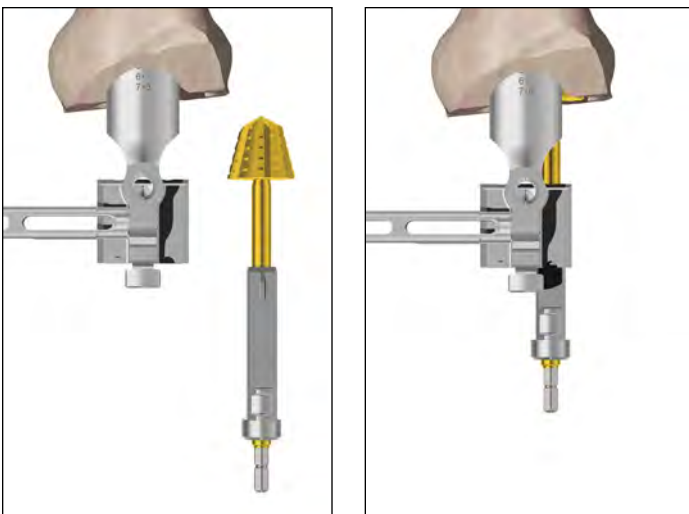


Figure 90

Insert the correct size Femoral Cone Stabilizer into the reamed section of the femur to further increase stability. **(Figure 91)** Keyway is designed to prevent incorrect assembly.

Caution:

Do not impact the Femoral Cone Stabilizer.

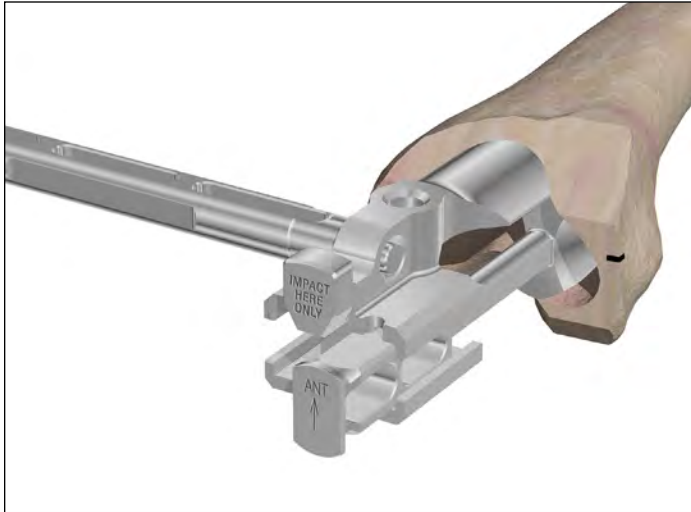


Figure 91

Instrument bar



6543-5-303

Femoral Cone Alignment Guide



6543-5-301

Femoral Cone Reamer Guide



See Catalog

Femoral Cone Reamer



6543-5-302

Femoral Cone Handle

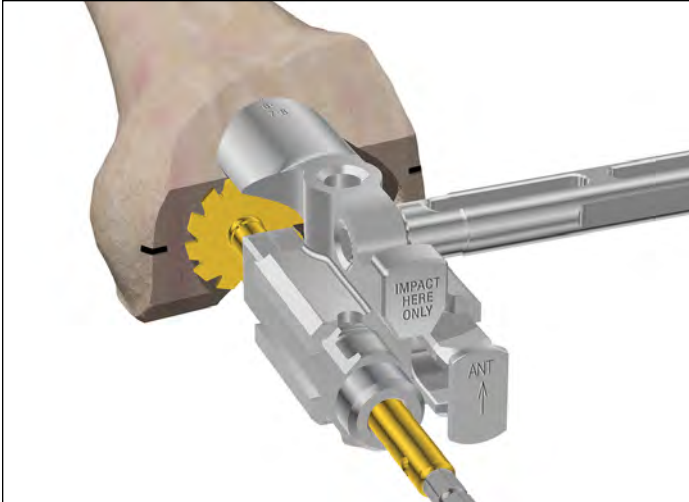


Figure 92

Insert the Femoral Cone Reamer into the opposite side of the guide and ream for the second cone lobe. (**Figure 92**)

Note:

Fully engage the bushing before reaming. Confirm that the drill is set to ream mode.

Start the reamer before engaging the bone. Ream down to the stop.

Caution:

If the bone is soft, osteopenic, fractured or sclerotic, consider initially reaming by hand using the T-handle.

Remove the reamer.

Remove the Femoral Cone Reamer Guide. Use the Slap Hammer to assist in Guide removal, if necessary. (**Figure 93**)

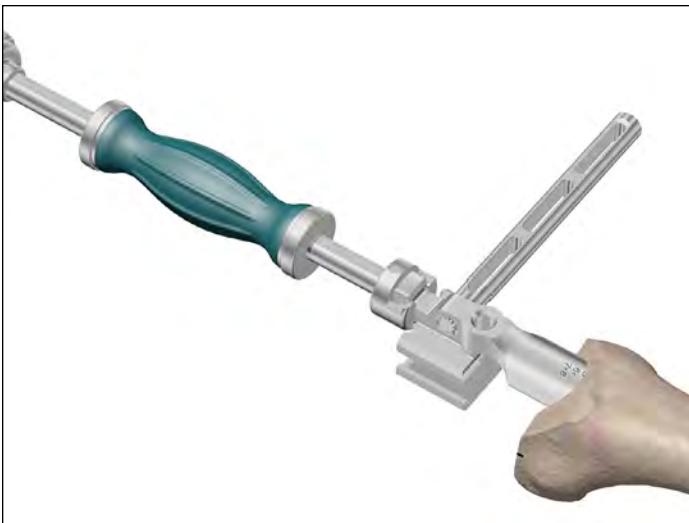


Figure 93

Femoral Cone trialing

The Femoral Cone Trial can be placed in the prepared bone. Assemble the desired Stem Trial with the corresponding Femoral Cone Introducer and TS Impaction Handle (**Figure 94**). There is one Femoral Cone Introducer for all sizes.

Note:

Stem Trials with product code 5560-T-XXX cannot be used with cone augment instrumentation. This includes trials 5560-T-112 and 5560-T-115.

Align the orientation keys on the Introducer with the feature on the Cone Trial. The orientation keys are located medially and laterally on the trial.

Caution:

There is no positive lock on the Central Femoral Cone Trial and the Cone Introducer. If inserting the Trial on the Introducer, be aware that the trial may disconnect from the introducer.

Options if added cone stability is required:

Ream to a larger Femoral Cone (repeat steps from the Femoral Cone preparation section of the protocol).

Or, implant the Cone with cement.

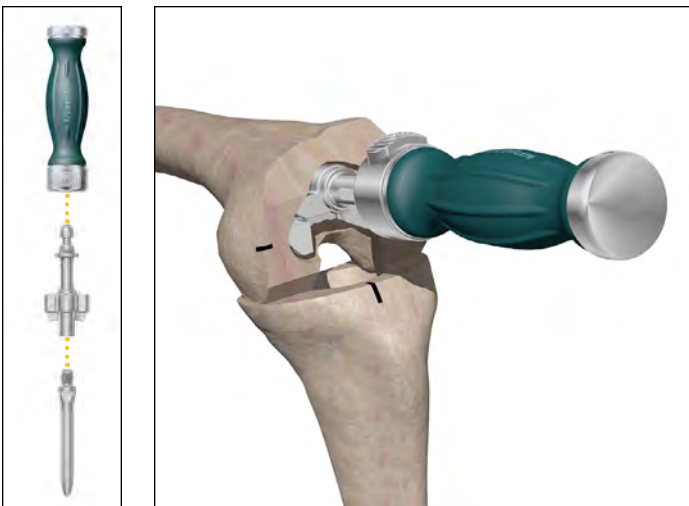


Figure 94

TS trialing with Cone Trials

Assemble and use the Tibial Baseplate Trial to ensure proper cone sizing/positioning. Refer to page 20 of the protocol for Tibial Trial assembly.

Assemble and use the Femoral Trial to ensure proper cone sizing/positioning and to verify accuracy of the femoral cuts. Refer to page 21 of the protocol for Femoral Trial assembly.

Perform trial reduction and assess joint biomechanics. **(Figure 95)**



Figure 95

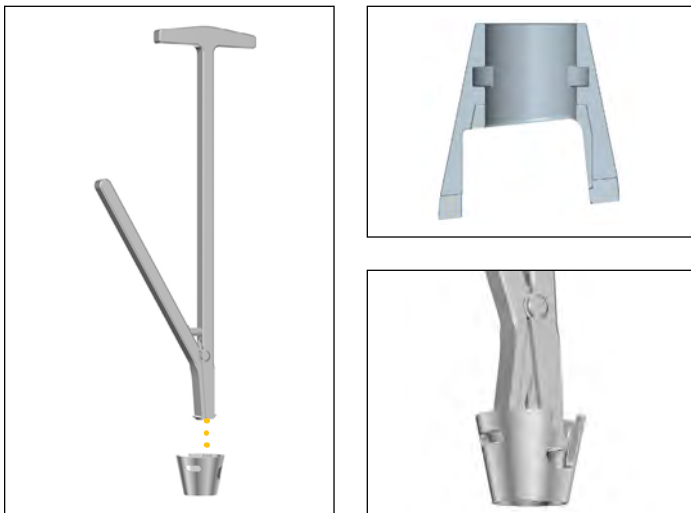


Figure 96

Extract the TS trial components, as well as the Femoral and Tibial Cone Trials.

Use the Cone Extractor to remove the Cone Trials. **(Figure 96)**

Insert the extractor into the Cone Trial (jaws closed). Squeeze the extractor handles to open the jaws. The jaws will engage the slots within the proximal end of the Cone Trial.

Once the jaws engage with the slots, remove the trial. Strike the handle of the extractor to assist in removal of the Cone Trial.

Note:

A lamina spreader (with narrow fixed pads) or a curette (reverse angle) may also be used to remove the Cone Trials. Insert the lamina spreader or curette into the Cone Trial and apply back pressure.

Instrument bar

See Catalog



Femoral Cone Reamer

See Catalog



Femoral Cone Stabilizer

6541-4-803



Slap Hammer

6541-4-810



Impaction Handle

6543-5-304



Femoral Cone Introducer

See Catalog



Femoral Cone Augment Trial

See Catalog



Triathlon Stem Trial

6541-5-100



Cone Extractor



Figure 97



Figure 98

Cone implantation (tibial cone)

Assemble the desired Stem Trial (1mm smaller than reamed for) with the Tibial Cone Introducer, TS Impaction Handle and the selected Symmetric/Asymmetric Cone Implant. (Figure 97 and 98)

Tibial Cone Introducers are size specific.

Align the orientation key on the implant with the key feature on the Cone Introducer. The orientation key is located posteriorly on the implant.

Note:

There is no positive lock on the Cone Implant and the Cone Introducer. The implant may disconnect from the introducer.

Note:

The Cone can be placed into the prepared bone before the Stem Trial and the Cone Introducer.

Note:

When inserting a Symmetric Cone Implant, ensure that the anterior rotational alignment marking on the implant is aligned with the anterior surface marking previously determined by the Universal Tibial Template.

Gently impact the Symmetric/Asymmetric Cone Implant and confirm that it is fully seated at the appropriate depth.

Note:

Stem Trials with product code 5560-T-XXX cannot be used with cone augment instrumentation. This includes trials 5560-T-112 and 5560-T-115.

Cone implantation (femoral cone)

Assemble the desired Stem Trial (1mm smaller than reamed for) with the corresponding Central or Femoral Cone Introducer, TS Impaction Handle and the selected Femoral Cone Implant. (**Figure 99 and 100**)

There are two introducers for the Central Cones and one for the Femoral Cones.

Align the orientation key on the implant with the key feature on the Cone Introducer. The orientation keys are located medially and laterally on the implant.

Note:

There is no positive lock on the Cone Implant and the Cone Introducer. The implant may disconnect from the introducer.

Note:

The Cone can be placed into the prepared bone before the Stem Trial and the Cone Introducer.

Gently tap the Femoral Cone Implant and confirm that it is fully seated at the appropriate depth.

Note:

Stem Trials with product code 5560-T-XXX cannot be used with cone augment instrumentation. This includes trials 5560-T-112 and 5560-T-115.

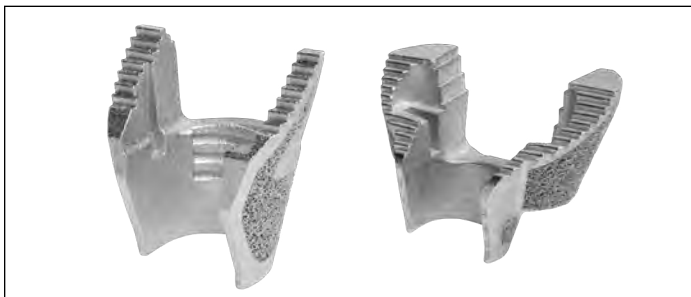


Figure 99



Figure 100

Instrument bar



See Catalog

Triathlon Tritanium Asymmetric/Symmetric Cone Augment



See Catalog

Triathlon Tritanium Femoral Cone Augment



6541-4-810

Impaction Handle



See Catalog

Tibial Cone Introducer



See Catalog

Femoral Cone Introducers



See Catalog

Triathlon Stem Trial



See Catalog

Triathlon Tritanium Central Femoral Cone



Figure 101

Cone implants

For Femoral and Tibial Trial assembly, refer to pages 20 and 21 of the protocol.

Introduce the TS Femoral and Tibial Trials.

Perform final trial reduction with the Cone implants and evaluate joint stability.

Remove the TS trial components.

TS component implantation with Cone implants

For assembly of Tibial and Femoral Components, refer to pages 22-26 of the protocol.

Cone implants must be fully seated before cementing the entire construct.

Caution:

Only use the Cone Extractor if the implant is seated in the wrong orientation and must be repositioned (before cementing).

Insert the extractor into the Cone Implant (jaws closed). Ensure that the flared edges of the jaws are positioned outside of the distal end of the cone. Squeeze the extractor handles to open the jaws.

Note:

A lamina spreader (with fixed narrow pads) or a curette (reverse angle) may also be used to remove the Cone Implants. Insert the lamina spreader or curette into the Cone ensuring that the ends of either instrument are positioned outside of the distal end of the implant. Apply back pressure.

Caution:

If the Cone Implant is extracted (before cementing), (**Figure 101**) inspect the Cone for damage before reinsertion.

See next section for component and cone cementing techniques.

Note:

All stem implants are compatible with the cone augments. Refer to sizing charts to see maximum stem diameter per cone size.

Cemented Stems (tibia)

Ensure that the Cone Implant is properly seated.

Attach the Tibial Impactor Handle/ Extractor to the Impaction Handle. Assemble the tibial implant assembly to the Tibial Impactor Handle/Extractor.

Assess length of the construct and determine the appropriate cement restrictors. Insert corresponding restrictor.

Irrigate the joint and then dry.

Mix cement.

Note:

Cone Implants used with cemented stems will require at least two doses without major bone voids or bones with IM canals greater than 20mm to fill the cone volume and get solid fixation to the cone.

Apply a thin layer of wet cement on the underside of the baseplate. Allow the cement to dough.

Use the standard cementing technique with a cement gun to retrograde fill the canal and cone.

Pressurize the cement into the cone, the metaphysis and onto the flat tibial surface.

Impact the tibial implant assembly onto the tibia until fully seated (do so when the cement is in its doughy state) and remove excess cement.

Cemented Stems (femur)

Ensure that the Cone Implant is properly seated.

Attach the Femoral Impactor Extractor to the Impaction Handle. Assemble the femoral implant assembly to the Femoral Impactor/Extractor.

Assess length of the construct and determine the appropriate cement restrictors. Insert corresponding restrictor.

Irrigate the joint and then dry.

Mix cement.

Note:

Cone Implants used with cemented stems will require at least two doses without major bone voids or bones with IM canals greater than 20mm to fill the cone volume and get solid fixation to the cone.

Apply a thin layer of wet cement on the back of the femoral implant. Allow the cement to dough.

Use the standard cementing technique with a cement gun to retrograde fill the canal and cone.

Pressurize the cement into the cone, the metaphysis and onto the cut distal femoral surfaces.

Impact the femoral implant assembly onto the femur until fully seated (do so when the cement is in dough-like state) and remove excess cement.

Fluted Stems (tibia)

Ensure that the cone is properly seated.

Attach the Tibial Impactor Handle/Extractor to the Impaction Handle. Assemble the tibial implant assembly to the Tibial Impactor Handle/Extractor.

Irrigate the joint and then dry.

Mix cement.

Note:

When using Cone Implants with Fluted Stems, at least one dose of cement for Cone sizes A, B and C and two doses for Cone sizes D and E will be required in the absence of major bone voids.

When using Fluted Stems with Cone implants, wipe the inside surface of the cone with a thin layer of wet cement (avoid cement moving distally beyond the inferior edge of the cone). Apply doughy cement to the back surface of the baseplate, and build the cement up along the stem implant junction proximally so that the cement can fill the full depth of the cone.

Make sure the stem tray construct has enough cement coating the implant, with enough volume to fill the Cone and cover the stem tray junction.

Pressurize the cement into the flat tibial surface.

Impact the tibial implant assembly onto the tibia until fully seated (do so when the cement is in its dough-like state) and remove excess cement.

Fluted Stems (femur)

Ensure that the cone is properly seated.

Attach the Femoral Impactor Extractor to the Impaction Handle. Assemble the femoral implant assembly to the Femoral Impactor/ Extractor.

Irrigate the joint and then dry.

Mix cement.

Note:

When using Cone Implants with Fluted Stems, at least one dose of cement for Cone sizes 1-2 and 3, and two doses for Cone sizes 4, 5, 6 and 7-8 will be required in the absence of major bone voids.

When using Fluted Stems with Cone implants, wipe the inside surface of the cone with a thin layer of wet cement (avoid cement moving distally beyond the superior edge of the cone). Apply doughy cement to the back surfaces of the assembled femoral implant, and build the cement up along the stem implant junction proximally so the cement can fill the full depth of the cone.

Make sure the stem tray construct has enough cement coating the implant, with enough volume to fill the Cone and cover the stem tray junction.

Pressurize the cement onto the cut distal femoral surfaces.

Impact the femoral implant assembly onto the femur until fully seated (do so when the cement is in its dough-like state) and remove excess cement.

Triathlon Revision instruments

Catalog number	Description	Quantity in kit
Miscellaneous Upper Tray Kit contents		
6541-4-810	Impaction Handle	2
6541-4-825	Slip Torque Handle	1
6543-7-601	Resection Guide Tower	1
6541-4-807	Femoral Impactor Extractor	1
6541-4-811	Femoral Impactor	1
6541-4-812	Tibial Baseplate Impactor	1
6541-4-813	Tibial Insert Impactor	1
6541-4-805	Tibial Baseplate Impactor Extractor	1
6543-4-516	Stem Extender Shaft	1
6541-4-806	Universal Alignment Handle	1
6543-7-600	Support Arm Assembly	1
6541-4-516	5/16" IM Rod	1
6541-4-602	Universal Alignment Rod	1
6543-4-802	1/8" Universal Hex Driver	1
6543-8-004	Miscellaneous Upper Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 17

Catalog number	Description	Quantity in kit
Miscellaneous Lower Tray Kit contents		
6543-4-803	Offset Counter Wrench	1
6543-4-801	Universal Counter Wrench	1
6543-4-818	Universal Torque Wrench	1
6541-4-400	Blade Runner	1
6543-7-602	Stop Plate	1
6543-4-605	Adjustable Spacer Block Augment - 5mm	4
6543-4-610	Adjustable Spacer Block Augment - 10mm	4
6543-4-615	Adjustable Spacer Block Augment - 15mm	2
6541-4-610	Adjustable Spacer Block	1
6541-4-804	Headless Pin Extractor	1
6541-4-300	Headed Nail Impactor Extractor	1
6541-4-803	Slap Hammer	1
6541-4-515	Headed Nails - 1 1/2"	2
6541-4-575	Headed Nails - 3/4"	2
6543-8-104	Miscellaneous Lower Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 25

Catalog number	Description	Quantity in kit
3 - 6 Tibial Prep Upper Tray Kit contents		
6543-2-600	Tibial Offset Bushing	1
6543-2-601	Tibial Offset Bushing Guide	1
6543-6-700	Revision Tibial Resection Guide L - Slotted	1
6543-6-701	Revision Tibial Resection Guide R - Slotted	1
6541-2-013	Size 1-3 Keel Punch	1
6541-2-046	Size 4-6 Keel Punch	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
6541-2-713	Size 1-3 Keel Punch Guide	1
6541-2-748	Size 4-8 Keel Punch Guide	1
6541-2-807	Tibial Alignment Handle	1
6543-2-703	Tibial Resection Guide Link	1
6543-8-002	3 - 6 Tibial Prep Upper Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 16

Catalog number	Description	Quantity in kit
3 - 6 Tibial Prep Lower Tray Kit contents		
5521-T-300	TS Baseplate Trials #3	1
5521-T-400	TS Baseplate Trials #4	1
5521-T-500	TS Baseplate Trials #5	1
5521-T-600	TS Baseplate Trials #6	1
5545-T-301	Tibial Augment Trial #3 LM/RL - 5mm	1
5545-T-302	Tibial Augment Trial #3 RM/LL - 5mm	1
5545-T-401	Tibial Augment Trial #4 LM/RL - 5mm	1
5545-T-402	Tibial Augment Trial #4 RM/LL - 5mm	1
5545-T-501	Tibial Augment Trial #5 LM/RL - 5mm	1
5545-T-502	Tibial Augment Trial #5 RM/LL - 5mm	1
5545-T-601	Tibial Augment Trial #6 LM/RL - 5mm	1
5545-T-602	Tibial Augment Trial #6 RM/LL - 5mm	1
5546-T-301	Tibial Augment Trial #3 LM/RL - 10mm	1
5546-T-302	Tibial Augment Trial #3 RM/LL - 10mm	1
5546-T-401	Tibial Augment Trial #4 LM/RL - 10mm	1
5546-T-402	Tibial Augment Trial #4 RM/LL - 10mm	1
5546-T-501	Tibial Augment Trial #5 LM/RL - 10mm	1
5546-T-502	Tibial Augment Trial #5 RM/LL - 10mm	1
5546-T-601	Tibial Augment Trial #6 LM/RL - 10mm	1
5546-T-602	Tibial Augment Trial #6 RM/LL - 10mm	1
5570-T-020A	Triathlon Offset Adapter Trial - 2mm	1
5570-T-040A	Triathlon Offset Adapter Trial - 4mm	1
5570-T-060A	Triathlon Offset Adapter Trial - 6mm	1
5570-T-080A	Triathlon Offset Adapter Trial - 8mm	1
6543-8-102	3 - 6 Tibial Prep Lower Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 26

Catalog number	Description	Quantity in kit
9 - 21mm Reamer Upper Tray Kit contents		
6543-7-527	Boss/Offset Reamer	1
6543-7-508	8mm Starter Awl	1
6541-4-518	1/8" Drill	1
6541-4-800	T-Handle Driver	1
6541-4-801	Universal Driver	1
6541-4-809	Headless Pin Driver	1
6541-4-003 / 6541-4-003A	Headless Pins - 3"	1
6543-7-509	IM Reamer - 9mm	1
6543-7-510	IM Reamer - 10mm	1
6543-7-511	IM Reamer - 11mm	1
6543-7-512	IM Reamer - 12mm	1
6543-7-513	IM Reamer - 13mm	1
6543-7-514	IM Reamer - 14mm	1
6543-7-515	IM Reamer - 15mm	1
5560-T-112	12mm x 50mm Stem Trial	2
6543-8-001	9 - 21mm Reamer Upper Tray	1
6541-4-538	3/8" IM Drill	1
6541-9-000	Triathlon Case	1
		Total quantity 19

Catalog number	Description	Quantity in kit
9 - 21mm Reamer Lower Tray Kit contents		
6543-7-516	IM Reamer - 16mm	1
6543-7-517	IM Reamer - 17mm	1
6543-7-518	IM Reamer - 18mm	1
6543-7-519	IM Reamer - 19mm	1
6543-7-520	IM Reamer - 20mm	1
6543-7-521	IM Reamer - 21mm	1
5560-T-115	Cemented Stem Trial - 15mm x 50mm	2
5571-T-025	Triathlon Stem Extender Trial - 25mm	2
5571-T-050	Triathlon Stem Extender Trial - 50mm	2
6543-8-101	9 - 21mm Reamer Lower Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 14

Catalog number	Description	Quantity in kit
22 - 25mm Reamers and Stem Trials Tray Kit contents		
6543-7-522	IM Reamer - 22mm	1
6543-7-523	IM Reamer - 23mm	1
6543-7-524	IM Reamer - 24mm	1
6543-7-525	IM Reamer - 25mm	1
5566-T-022A	Triathlon Stem Trial, 22 x 150mm	1
5566-T-023A	Triathlon Stem Trial, 23 x 150mm	1
5566-T-024A	Triathlon Stem Trial, 24 x 150mm	1
5566-T-025A	Triathlon Stem Trial, 25 x 150mm	1
5565-T-022A	Triathlon Stem Trial, 22 x 100mm	1
5565-T-023A	Triathlon Stem Trial, 23 x 100mm	1
5565-T-024A	Triathlon Stem Trial, 24 x 100mm	1
5565-T-025A	Triathlon Stem Trial, 25 x 100mm	1
6543-8-108	22 - 25mm Reamers and Stem Trials Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 14

Catalog number	Description	Quantity in kit
3 - 6 Femoral Prep Upper Tray Kit contents		
6543-1-005	Distal Spacer - 5mm	2
6543-1-010	Distal Spacer - 10mm	2
6543-1-015	Distal Spacer - 15mm	2
6543-1-600	Femoral Offset Bushing	1
6543-1-603	Size 1-8 Femoral Sizing Templates	1
6543-1-703	#3 All-in-One Cutting Block	1
6543-1-704	#4 All-in-One Cutting Block	1
6543-1-705	#5 All-in-One Cutting Block	1
6543-1-706	#6 All-in-One Cutting Block	1
6543-1-710	Revision Box Cutting Guide	1
6543-1-721	Revision Distal Resection Guide	1
6543-1-750	Femoral Boss Preparation Guide	1
6543-1-751	Femoral Boss Reamer Bushing	1
6543-4-400	Joint-Line Ruler	1
6543-8-003	3 - 6 Femoral Prep Upper Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 19

Catalog number	Description	Quantity in kit
3 - 6 TS Plus Insert Trial Tray Kit contents		
5537-T-309	Triathlon TS Plus Tibial Insert Trial #3 - 9mm	1
5537-T-311	Triathlon TS Plus Tibial Insert Trial #3 - 11mm	1
5537-T-313	Triathlon TS Plus Tibial Insert Trial #3 - 13mm	1
5537-T-316	Triathlon TS Plus Tibial Insert Trial #3 - 16mm	1
5537-T-319	Triathlon TS Plus Tibial Insert Trial #3 - 19mm	1
5537-T-322	Triathlon TS Plus Tibial Insert Trial #3 - 22mm	1
5537-T-325	Triathlon TS Plus Tibial Insert Trial #3 - 25mm	1
5537-T-328	Triathlon TS Plus Tibial Insert Trial #3 - 28mm	1
5537-T-331	Triathlon TS Plus Tibial Insert Trial #3 - 31mm	1
5537-T-409	Triathlon TS Plus Tibial Insert Trial #4 - 9mm	1
5537-T-411	Triathlon TS Plus Tibial Insert Trial #4 - 11mm	1
5537-T-413	Triathlon TS Plus Tibial Insert Trial #4 - 13mm	1
5537-T-416	Triathlon TS Plus Tibial Insert Trial #4 - 16mm	1
5537-T-419	Triathlon TS Plus Tibial Insert Trial #4 - 19mm	1
5537-T-422	Triathlon TS Plus Tibial Insert Trial #4 - 22mm	1
5537-T-425	Triathlon TS Plus Tibial Insert Trial #4 - 25mm	1
5537-T-428	Triathlon TS Plus Tibial Insert Trial #4 - 28mm	1
5537-T-431	Triathlon TS Plus Tibial Insert Trial #4 - 31mm	1
5537-T-509	Triathlon TS Plus Tibial Insert Trial #5 - 9mm	1
5537-T-511	Triathlon TS Plus Tibial Insert Trial #5 - 11mm	1
5537-T-513	Triathlon TS Plus Tibial Insert Trial #5 - 13mm	1
5537-T-516	Triathlon TS Plus Tibial Insert Trial #5 - 16mm	1
5537-T-519	Triathlon TS Plus Tibial Insert Trial #5 - 19mm	1
5537-T-522	Triathlon TS Plus Tibial Insert Trial #5 - 22mm	1
5537-T-525	Triathlon TS Plus Tibial Insert Trial #5 - 25mm	1
5537-T-528	Triathlon TS Plus Tibial Insert Trial #5 - 28mm	1
5537-T-531	Triathlon TS Plus Tibial Insert Trial #5 - 31mm	1
5537-T-609	Triathlon TS Plus Tibial Insert Trial #6 - 9mm	1
5537-T-611	Triathlon TS Plus Tibial Insert Trial #6 - 11mm	1
5537-T-613	Triathlon TS Plus Tibial Insert Trial #6 - 13mm	1
5537-T-616	Triathlon TS Plus Tibial Insert Trial #6 - 16mm	1
5537-T-619	Triathlon TS Plus Tibial Insert Trial #6 - 19mm	1
5537-T-622	Triathlon TS Plus Tibial Insert Trial #6 - 22mm	1
5537-T-625	Triathlon TS Plus Tibial Insert Trial #6 - 25mm	1
5537-T-628	Triathlon TS Plus Tibial Insert Trial #6 - 28mm	1
5537-T-631	Triathlon TS Plus Tibial Insert Trial #6 - 31mm	1
6543-8-007	3 - 6 TS Plus Insert Trial Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 38

Catalog number	Description	Quantity in kit
1, 2, 7, 8 Upper Tray Kit contents		
6543-1-702	#2 All-in-One Cutting Block	1
6543-1-707	#7 All-in-One 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
5521-T-200	#2 Baseplate Trial	1
5521-T-700	#7 Baseplate Trial	1
5512-T-201	#2 Femoral Trial Left	1
5512-T-202	#2 Femoral Trial Right	1
5512-T-701	#7 Femoral Trial Left	1
5512-T-702	#7 Femoral Trial Right	1
5540-T-200A	Triathlon Femoral Distal Augment Trial, 5mm - #2	2
5540-T-700A	Triathlon Femoral Distal Augment Trial, 5mm - #7	2
5541-T-200A	Triathlon Femoral Distal Augment Trial, 10mm - #2	2
5541-T-700A	Triathlon Femoral Distal Augment Trial, 10mm - #7	2
5542-T-200A	Triathlon Femoral Distal Augment Trial, 15mm - #2	2
5542-T-700A	Triathlon Femoral Distal Augment Trial, 15mm - #7	2
5543-T-200	Triathlon Femoral Posterior Augment Trial, 5mm - #2	2
5543-T-700	Triathlon Femoral Posterior Augment Trial, 5mm - #7	2
5544-T-200	Triathlon Femoral Posterior Augment Trial, 10mm - #2	2
5544-T-700	Triathlon Femoral Posterior Augment Trial, 10mm - #7	2
5545-T-701	Tibial Augment Trial #7 LM/RL - 5mm	1
5545-T-702	Tibial Augment Trial #7 RM/LL - 5mm	1
5546-T-701	Tibial Augment Trial #7 LM/RL - 10mm	1
5546-T-702	Tibial Augment Trial #7 RM/LL - 10mm	1
5545-T-201	Tibial Augment Trial #2 LM/RL - 5mm	1
5545-T-202	Tibial Augment Trial #2 RM/LL - 5mm	1
5546-T-201	Tibial Augment Trial #2 LM/RL - 10mm	1
5546-T-202	Tibial Augment Trial #2 RM/LL - 10mm	1
6543-8-009	1, 2, 7, 8 Upper Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 41

Catalog number	Description	Quantity in kit
1, 2, 7, 8 Lower Tray Kit contents		
6543-1-701	#1 All-in-One Cutting Block	1
6543-1-708	#8 All-in-One Cutting Block	1
6541-2-601	#1 Universal Tibial Template	1
6541-2-608	#8 Universal Tibial Template	1
5521-T-800	#8 Baseplate Trial	1
5521-T-100	#1 Baseplate Trial	1
5512-T-101	#1 Femoral Trial Left	1
5512-T-102	#1 Femoral Trial Right	1
5512-T-801	#8 Femoral Trial Left	1
5512-T-802	#8 Femoral Trial Right	1
5540-T-100A	Triathlon Femoral Distal Augment Trial, 5mm - #1	2
5540-T-800A	Triathlon Femoral Distal Augment Trial, 5mm - #8	2
5541-T-100A	Triathlon Femoral Distal Augment Trial, 10mm - #1	2
5541-T-800A	Triathlon Femoral Distal Augment Trial, 10mm - #8	2
5542-T-100A	Triathlon Femoral Distal Augment Trial, 15mm - #1	2
5542-T-800A	Triathlon Femoral Distal Augment Trial, 15mm - #8	2
5543-T-100	Triathlon Femoral Posterior Augment Trial, 5mm - #1	2
5543-T-800	Triathlon Femoral Posterior Augment Trial, 5mm - #8	2
5544-T-100	Triathlon Femoral Posterior Augment Trial, 10mm - #1	2
5544-T-800	Triathlon Femoral Posterior Augment Trial, 10mm - #8	2
5545-T-101	Tibial Augment Trial #1 LM/RL - 5mm	1
5545-T-102	Tibial Augment Trial #1 RM/LL - 5mm	1
5546-T-101	Tibial Augment Trial #1 LM/RL - 10mm	1
5546-T-102	Tibial Augment Trial #1 RM/LL - 10mm	1
5545-T-801	Tibial Augment Trial #8 LM/RL - 5mm	1
5545-T-802	Tibial Augment Trial #8 RM/LL - 5mm	1
5546-T-801	Tibial Augment Trial #8 LM/RL - 10mm	1
5546-T-802	Tibial Augment Trial #8 RM/LL - 10mm	1
6543-8-109	1, 2, 7, 8 Lower Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 40

Catalog number	Description	Quantity in kit
7, 8 TS Max Insert Trials Tray Kit contents		
5537-T-722	#7 22mm TS Plus Insert Trial	1
5537-T-725	#7 25mm TS Plus Insert Trial	1
5537-T-728	#7 28mm TS Plus Insert Trial	1
5537-T-731	#7 31mm TS Plus Insert Trial	1
5537-T-822	#8 22mm TS Plus Insert Trial	1
5537-T-825	#8 25mm TS Plus Insert Trial	1
5537-T-828	#8 28mm TS Plus Insert Trial	1
5537-T-831	#8 31mm TS Plus Insert Trial	1
6543-8-013	7, 8 TS Max Insert Trials Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 10

Catalog number	Description	Quantity in kit
3 - 6 Femoral Prep Lower Tray Kit contents		
5512-T-301	TS Femoral Trials – #3 Left	1
5512-T-302	TS Femoral Trials – #3 Right	1
5512-T-401	TS Femoral Trials – #4 Left	1
5512-T-402	TS Femoral Trials – #4 Right	1
5512-T-501	TS Femoral Trials – #5 Left	1
5512-T-502	TS Femoral Trials – #5 Right	1
5512-T-601	TS Femoral Trials – #6 Left	1
5512-T-602	TS Femoral Trials – #6 Right	1
5570-T-020A	Triathlon Offset Adapter Trial - 2mm	1
5570-T-040A	Triathlon Offset Adapter Trial - 4mm	1
5570-T-060A	Triathlon Offset Adapter Trial - 6mm	1
5570-T-080A	Triathlon Offset Adapter Trial - 8mm	1
5540-T-300A	Triathlon Femoral Distal Augment Trial, 5mm - #3	2
5540-T-400A	Triathlon Femoral Distal Augment Trial, 5mm - #4	2
5540-T-500A	Triathlon Femoral Distal Augment Trial, 5mm - #5	2
5540-T-600A	Triathlon Femoral Distal Augment Trial, 5mm - #6	2
5541-T-300A	Triathlon Femoral Distal Augment Trial, 10mm - #3	2
5541-T-400A	Triathlon Femoral Distal Augment Trial, 10mm - #4	2
5541-T-500A	Triathlon Femoral Distal Augment Trial, 10mm - #5	2
5541-T-600A	Triathlon Femoral Distal Augment Trial, 10mm - #6	2
5542-T-300A	Triathlon Femoral Distal Augment Trial, 15mm - #3	2
5542-T-400A	Triathlon Femoral Distal Augment Trial, 15mm - #4	2
5542-T-500A	Triathlon Femoral Distal Augment Trial, 15mm - #5	2
5542-T-600A	Triathlon Femoral Distal Augment Trial, 15mm - #6	2
5543-T-300	Triathlon Femoral Posterior Augment Trial, 5mm - #3	2
5543-T-400	Triathlon Femoral Posterior Augment Trial, 5mm - #4	2
5543-T-500	Triathlon Femoral Posterior Augment Trial, 5mm - #5	2
5543-T-600	Triathlon Femoral Posterior Augment Trial, 5mm - #6	2
5544-T-300	Triathlon Femoral Posterior Augment Trial, 10mm - #3	2
5544-T-400	Triathlon Femoral Posterior Augment Trial, 10mm - #4	2
5544-T-500	Triathlon Femoral Posterior Augment Trial, 10mm - #5	2
5544-T-600	Triathlon Femoral Posterior Augment Trial, 10mm - #6	2
6543-8-103	3 - 6 Femoral Prep Lower Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 54

Catalog number	Description	Quantity in kit
9 - 21mm Stem Trial Tray Kit contents		
5565-T-009A	Triathlon Stem Trial, 9 x 100mm	1
5565-T-010A	Triathlon Stem Trial, 10 x 100mm	1
5565-T-011A	Triathlon Stem Trial, 11 x 100mm	2
5565-T-012A	Triathlon Stem Trial, 12 x 100mm	2
5565-T-013A	Triathlon Stem Trial, 13 x 100mm	2
5565-T-014A	Triathlon Stem Trial, 14 x 100mm	2
5565-T-015A	Triathlon Stem Trial, 15 x 100mm	2
5565-T-016A	Triathlon Stem Trial, 16 x 100mm	2
5565-T-017A	Triathlon Stem Trial, 17 x 100mm	2
5565-T-018A	Triathlon Stem Trial, 18 x 100mm	2
5565-T-019A	Triathlon Stem Trial, 19 x 100mm	2
5565-T-020A	Triathlon Stem Trial, 20 x 100mm	2
5565-T-021A	Triathlon Stem Trial, 21 x 100mm	2
5566-T-009A	Triathlon Stem Trial, 9 x 150mm	1
5566-T-010A	Triathlon Stem Trial, 10 x 150mm	1
5566-T-011A	Triathlon Stem Trial, 11 x 150mm	2
5566-T-012A	Triathlon Stem Trial, 12 x 150mm	2
5566-T-013A	Triathlon Stem Trial, 13 x 150mm	2
5566-T-014A	Triathlon Stem Trial, 14 x 150mm	2
5566-T-015A	Triathlon Stem Trial, 15 x 150mm	2
5566-T-016A	Triathlon Stem Trial, 16 x 150mm	2
5566-T-017A	Triathlon Stem Trial, 17 x 150mm	2
5566-T-018A	Triathlon Stem Trial, 18 x 150mm	2
5566-T-019A	Triathlon Stem Trial, 19 x 150mm	2
5566-T-020A	Triathlon Stem Trial, 20 x 150mm	2
5566-T-021A	Triathlon Stem Trial, 21 x 150mm	2
6543-8-005	9 - 21mm Stem Trial Upper Tray	1
6543-8-105	9 - 21mm Stem Trial Lower Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 51

Catalog number	Description	Quantity in kit
1, 2, 7, 8 TS Plus Insert Trials Tray Kit contents		
5537-T-809	#8 9mm TS Plus Insert Trial	1
5537-T-811	#8 11mm TS Plus Insert Trial	1
5537-T-813	#8 13mm TS Plus Insert Trial	1
5537-T-816	#8 16mm TS Plus Insert Trial	1
5537-T-819	#8 19mm TS Plus Insert Trial	1
5537-T-709	#7 9mm TS Plus Insert Trial	1
5537-T-711	#7 11mm TS Plus Insert Trial	1
5537-T-713	#7 13mm TS Plus Insert Trial	1
5537-T-716	#7 16mm TS Plus Insert Trial	1
5537-T-719	#7 19mm TS Plus Insert Trial	1
5537-T-209	#2 9mm TS Plus Insert Trial	1
5537-T-211	#2 11mm TS Plus Insert Trial	1
5537-T-213	#2 13mm TS Plus Insert Trial	1
5537-T-216	#2 16mm TS Plus Insert Trial	1
5537-T-219	#2 19mm TS Plus Insert Trial	1
5537-T-222	#2 22mm TS Plus Insert Trial	1
5537-T-225	#2 25mm TS Plus Insert Trial	1
5537-T-228	#2 28mm TS Plus Insert Trial	1
5537-T-231	#2 31mm TS Plus Insert Trial	1
5537-T-109	#1 9mm TS Plus Insert Trial	1
5537-T-111	#1 11mm TS Plus Insert Trial	1
5537-T-113	#1 13mm TS Plus Insert Trial	1
5537-T-116	#1 16mm TS Plus Insert Trial	1
5537-T-119	#1 19mm TS Plus Insert Trial	1
5537-T-122	#1 22mm TS Plus Insert Trial	1
5537-T-125	#1 25mm TS Plus Insert Trial	1
5537-T-128	#1 28mm TS Plus Insert Trial	1
5537-T-131	#1 31mm TS Plus Insert Trial	1
6543-8-011	1, 2, 7, 8 TS Plus Insert Trials Tray	1
6541-9-000	Triathlon Case	1
		Total quantity 30

Catalog number	Description	
Triathlon TS Plus Tibial Insert part numbers		
5537-G-109 or 5537-G-109-E	TS Plus Tibial Insert - X3 Poly	#1 - 9mm
5537-G-111 or 5537-G-111-E	TS Plus Tibial Insert - X3 Poly	#1 - 11mm
5537-G-113 or 5537-G-113-E	TS Plus Tibial Insert - X3 Poly	#1 - 13mm
5537-G-116 or 5537-G-116-E	TS Plus Tibial Insert - X3 Poly	#1 - 16mm
5537-G-119 or 5537-G-119-E	TS Plus Tibial Insert - X3 Poly	#1 - 19mm
5537-G-122 or 5537-G-122-E	TS Plus Tibial Insert - X3 Poly	#1 - 22mm
5537-G-125 or 5537-G-125-E	TS Plus Tibial Insert - X3 Poly	#1 - 25mm
5537-G-128 or 5537-G-128-E	TS Plus Tibial Insert - X3 Poly	#1 - 28mm
5537-G-131 or 5537-G-131-E	TS Plus Tibial Insert - X3 Poly	#1 - 31mm
5537-G-209 or 5537-G-209-E	TS Plus Tibial Insert - X3 Poly	#2 - 9mm
5537-G-211 or 5537-G-211-E	TS Plus Tibial Insert - X3 Poly	#2 - 11mm
5537-G-213 or 5537-G-213-E	TS Plus Tibial Insert - X3 Poly	#2 - 13mm
5537-G-216 or 5537-G-216-E	TS Plus Tibial Insert - X3 Poly	#2 - 16mm
5537-G-219 or 5537-G-219-E	TS Plus Tibial Insert - X3 Poly	#2 - 19mm
5537-G-222 or 5537-G-222-E	TS Plus Tibial Insert - X3 Poly	#2 - 22mm
5537-G-225 or 5537-G-225-E	TS Plus Tibial Insert - X3 Poly	#2 - 25mm
5537-G-228 or 5537-G-228-E	TS Plus Tibial Insert - X3 Poly	#2 - 28mm
5537-G-231 or 5537-G-231-E	TS Plus Tibial Insert - X3 Poly	#2 - 31mm
5537-G-309 or 5537-G-309-E	TS Plus Tibial Insert - X3 Poly	#3 - 9mm
5537-G-311 or 5537-G-311-E	TS Plus Tibial Insert - X3 Poly	#3 - 11mm
5537-G-313 or 5537-G-313-E	TS Plus Tibial Insert - X3 Poly	#3 - 13mm
5537-G-316 or 5537-G-316-E	TS Plus Tibial Insert - X3 Poly	#3 - 16mm
5537-G-319 or 5537-G-319-E	TS Plus Tibial Insert - X3 Poly	#3 - 19mm
5537-G-322 or 5537-G-322-E	TS Plus Tibial Insert - X3 Poly	#3 - 22mm
5537-G-325 or 5537-G-325-E	TS Plus Tibial Insert - X3 Poly	#3 - 25mm
5537-G-328 or 5537-G-328-E	TS Plus Tibial Insert - X3 Poly	#3 - 28mm
5537-G-331 or 5537-G-331-E	TS Plus Tibial Insert - X3 Poly	#3 - 31mm
5537-G-409 or 5537-G-409-E	TS Plus Tibial Insert - X3 Poly	#4 - 9mm
5537-G-411 or 5537-G-411-E	TS Plus Tibial Insert - X3 Poly	#4 - 11mm
5537-G-413 or 5537-G-413-E	TS Plus Tibial Insert - X3 Poly	#4 - 13mm
5537-G-416 or 5537-G-416-E	TS Plus Tibial Insert - X3 Poly	#4 - 16mm
5537-G-419 or 5537-G-419-E	TS Plus Tibial Insert - X3 Poly	#4 - 19mm
5537-G-422 or 5537-G-422-E	TS Plus Tibial Insert - X3 Poly	#4 - 22mm
5537-G-425 or 5537-G-425-E	TS Plus Tibial Insert - X3 Poly	#4 - 25mm
5537-G-428 or 5537-G-428-E	TS Plus Tibial Insert - X3 Poly	#4 - 28mm
5537-G-431 or 5537-G-431-E	TS Plus Tibial Insert - X3 Poly	#4 - 31mm

(Continued)

Catalog number	Description	
Triathlon TS Plus Tibial Insert part numbers - continued		
5537-G-509 or 5537-G-509-E	TS Plus Tibial Insert - X3 Poly	#5 - 9mm
5537-G-511 or 5537-G-511-E	TS Plus Tibial Insert - X3 Poly	#5 - 11mm
5537-G-513 or 5537-G-513-E	TS Plus Tibial Insert - X3 Poly	#5 - 13mm
5537-G-516 or 5537-G-516-E	TS Plus Tibial Insert - X3 Poly	#5 - 16mm
5537-G-519 or 5537-G-519-E	TS Plus Tibial Insert - X3 Poly	#5 - 19mm
5537-G-522 or 5537-G-522-E	TS Plus Tibial Insert - X3 Poly	#5 - 22mm
5537-G-525 or 5537-G-525-E	TS Plus Tibial Insert - X3 Poly	#5 - 25mm
5537-G-528 or 5537-G-528-E	TS Plus Tibial Insert - X3 Poly	#5 - 28mm
5537-G-531 or 5537-G-531-E	TS Plus Tibial Insert - X3 Poly	#5 - 31mm
5537-G-609 or 5537-G-609-E	TS Plus Tibial Insert - X3 Poly	#6 - 9mm
5537-G-611 or 5537-G-611-E	TS Plus Tibial Insert - X3 Poly	#6 - 11mm
5537-G-613 or 5537-G-613-E	TS Plus Tibial Insert - X3 Poly	#6 - 13mm
5537-G-616 or 5537-G-616-E	TS Plus Tibial Insert - X3 Poly	#6 - 16mm
5537-G-619 or 5537-G-619-E	TS Plus Tibial Insert - X3 Poly	#6 - 19mm
5537-G-622 or 5537-G-622-E	TS Plus Tibial Insert - X3 Poly	#6 - 22mm
5537-G-625 or 5537-G-625-E	TS Plus Tibial Insert - X3 Poly	#6 - 25mm
5537-G-628 or 5537-G-628-E	TS Plus Tibial Insert - X3 Poly	#6 - 28mm
5537-G-631 or 5537-G-631-E	TS Plus Tibial Insert - X3 Poly	#6 - 31mm
5537-G-709 or 5537-G-709-E	TS Plus Tibial Insert - X3 Poly	#7 - 9mm
5537-G-711 or 5537-G-711-E	TS Plus Tibial Insert - X3 Poly	#7 - 11mm
5537-G-713 or 5537-G-713-E	TS Plus Tibial Insert - X3 Poly	#7 - 13mm
5537-G-716 or 5537-G-716-E	TS Plus Tibial Insert - X3 Poly	#7 - 16mm
5537-G-719 or 5537-G-719-E	TS Plus Tibial Insert - X3 Poly	#7 - 19mm
5537-G-722 or 5537-G-722-E	TS Plus Tibial Insert - X3 Poly	#7 - 22mm
5537-G-725 or 5537-G-725-E	TS Plus Tibial Insert - X3 Poly	#7 - 25mm
5537-G-728 or 5537-G-728-E	TS Plus Tibial Insert - X3 Poly	#7 - 28mm
5537-G-731 or 5537-G-731-E	TS Plus Tibial Insert - X3 Poly	#7 - 31mm
5537-G-809 or 5537-G-809-E	TS Plus Tibial Insert - X3 Poly	#8 - 9mm
5537-G-811 or 5537-G-811-E	TS Plus Tibial Insert - X3 Poly	#8 - 11mm
5537-G-813 or 5537-G-813-E	TS Plus Tibial Insert - X3 Poly	#8 - 13mm
5537-G-816 or 5537-G-816-E	TS Plus Tibial Insert - X3 Poly	#8 - 16mm
5537-G-819 or 5537-G-819-E	TS Plus Tibial Insert - X3 Poly	#8 - 19mm
5537-G-822 or 5537-G-822-E	TS Plus Tibial Insert - X3 Poly	#8 - 22mm
5537-G-825 or 5537-G-825-E	TS Plus Tibial Insert - X3 Poly	#8 - 25mm
5537-G-828 or 5537-G-828-E	TS Plus Tibial Insert - X3 Poly	#8 - 28mm
5537-G-831 or 5537-G-831-E	TS Plus Tibial Insert - X3 Poly	#8 - 31mm

Catalog number	Description
Triathlon Universal Tibial Baseplate part numbers	
5521-B-100	Universal Tibial Baseplate #1
5521-B-200	Universal Tibial Baseplate #2
5521-B-300	Universal Tibial Baseplate #3
5521-B-400	Universal Tibial Baseplate #4
5521-B-500	Universal Tibial Baseplate #5
5521-B-600	Universal Tibial Baseplate #6
5521-B-700	Universal Tibial Baseplate #7
5521-B-800	Universal Tibial Baseplate #8

Catalog number	Description
Triathlon TS Femoral Component part numbers	
5512-F-101	TS Femoral Component #1 Left
5512-F-201	TS Femoral Component #2 Left
5512-F-301	TS Femoral Component #3 Left
5512-F-401	TS Femoral Component #4 Left
5512-F-501	TS Femoral Component #5 Left
5512-F-601	TS Femoral Component #6 Left
5512-F-701	TS Femoral Component #7 Left
5512-F-801	TS Femoral Component #8 Left
5512-F-102	TS Femoral Component #1 Right
5512-F-202	TS Femoral Component #2 Right
5512-F-302	TS Femoral Component #3 Right
5512-F-402	TS Femoral Component #4 Right
5512-F-502	TS Femoral Component #5 Right
5512-F-602	TS Femoral Component #6 Right
5512-F-702	TS Femoral Component #7 Right
5512-F-802	TS Femoral Component #8 Right

Catalog number	Description
Triathlon TS Stems - Cemented - part numbers	
5560-S-109	Triathlon Cemented Stem 9mm x 50mm
5560-S-209	Triathlon Cemented Stem 9mm x 100mm
5560-S-309	Triathlon Cemented Stem 9mm x 150mm
5560-S-112	Triathlon Cemented Stem 12mm x 50mm
5560-S-212	Triathlon Cemented Stem 12mm x 100mm
5560-S-312	Triathlon Cemented Stem 12mm x 150mm
5560-S-115	Triathlon Cemented Stem 15mm x 50mm
5560-S-215	Triathlon Cemented Stem 15mm x 100mm
5560-S-315	Triathlon Cemented Stem 15mm x 150mm

All items are made of CoCr unless otherwise stated.

Catalog number	Description	
Triathlon TS Stems - Cementless - part numbers		
5565-S-010	Triathlon Fluted Stem, Titanium	10mm x 100mm
5565-S-011	Triathlon Fluted Stem, Titanium	11mm x 100mm
5565-S-012	Triathlon Fluted Stem, Titanium	12mm x 100mm
5565-S-013	Triathlon Fluted Stem, Titanium	13mm x 100mm
5565-S-014	Triathlon Fluted Stem, Titanium	14mm x 100mm
5565-S-015	Triathlon Fluted Stem, Titanium	15mm x 100mm
5565-S-016	Triathlon Fluted Stem, Titanium	16mm x 100mm
5565-S-017	Triathlon Fluted Stem, Titanium	17mm x 100mm
5565-S-018	Triathlon Fluted Stem, Titanium	18mm x 100mm
5565-S-019	Triathlon Fluted Stem, Titanium	19mm x 100mm
5565-S-020	Triathlon Fluted Stem, Titanium	20mm x 100mm
5565-S-021	Triathlon Fluted Stem, Titanium	21mm x 100mm
5565-S-022	Triathlon Fluted Stem, Titanium	22mm x 100mm
5565-S-023	Triathlon Fluted Stem, Titanium	23mm x 100mm
5565-S-024	Triathlon Fluted Stem, Titanium	24mm x 100mm
5565-S-025	Triathlon Fluted Stem, Titanium	25mm x 100mm
5566-S-010	Triathlon Fluted Stem, Titanium	10mm x 150mm
5566-S-011	Triathlon Fluted Stem, Titanium	11mm x 150mm
5566-S-012	Triathlon Fluted Stem, Titanium	12mm x 150mm
5566-S-013	Triathlon Fluted Stem, Titanium	13mm x 150mm
5566-S-014	Triathlon Fluted Stem, Titanium	14mm x 150mm
5566-S-015	Triathlon Fluted Stem, Titanium	15mm x 150mm
5566-S-016	Triathlon Fluted Stem, Titanium	16mm x 150mm
5566-S-017	Triathlon Fluted Stem, Titanium	17mm x 150mm
5566-S-018	Triathlon Fluted Stem, Titanium	18mm x 150mm
5566-S-019	Triathlon Fluted Stem, Titanium	19mm x 150mm
5566-S-020	Triathlon Fluted Stem, Titanium	20mm x 150mm
5566-S-021	Triathlon Fluted Stem, Titanium	21mm x 150mm
5566-S-022	Triathlon Fluted Stem, Titanium	22mm x 150mm
5566-S-023	Triathlon Fluted Stem, Titanium	23mm x 150mm
5566-S-024	Triathlon Fluted Stem, Titanium	24mm x 150mm
5566-S-025	Triathlon Fluted Stem, Titanium	25mm x 150mm

Catalog number	Description	
Triathlon TS Tibial Augment part numbers		
5545-A-101	Triathlon Tibial Augment - 5mm	#1 LM/RL
5545-A-201	Triathlon Tibial Augment - 5mm	#2 LM/RL
5545-A-301	Triathlon Tibial Augment - 5mm	#3 LM/RL
5545-A-401	Triathlon Tibial Augment - 5mm	#4 LM/RL
5545-A-501	Triathlon Tibial Augment - 5mm	#5 LM/RL
5545-A-601	Triathlon Tibial Augment - 5mm	#6 LM/RL
5545-A-701	Triathlon Tibial Augment - 5mm	#7 LM/RL
5545-A-801	Triathlon Tibial Augment - 5mm	#8 LM/RL
5545-A-102	Triathlon Tibial Augment - 5mm	#1 RM/LL
5545-A-202	Triathlon Tibial Augment - 5mm	#2 RM/LL
5545-A-302	Triathlon Tibial Augment - 5mm	#3 RM/LL
5545-A-402	Triathlon Tibial Augment - 5mm	#4 RM/LL
5545-A-502	Triathlon Tibial Augment - 5mm	#5 RM/LL
5545-A-602	Triathlon Tibial Augment - 5mm	#6 RM/LL
5545-A-702	Triathlon Tibial Augment - 5mm	#7 RM/LL
5545-A-802	Triathlon Tibial Augment - 5mm	#8 RM/LL
5546-A-101	Triathlon Tibial Augment - 10mm	#1 LM/RL
5546-A-201	Triathlon Tibial Augment - 10mm	#2 LM/RL
5546-A-301	Triathlon Tibial Augment - 10mm	#3 LM/RL
5546-A-401	Triathlon Tibial Augment - 10mm	#4 LM/RL
5546-A-501	Triathlon Tibial Augment - 10mm	#5 LM/RL
5546-A-601	Triathlon Tibial Augment - 10mm	#6 LM/RL
5546-A-701	Triathlon Tibial Augment - 10mm	#7 LM/RL
5546-A-801	Triathlon Tibial Augment - 10mm	#8 LM/RL
5546-A-102	Triathlon Tibial Augment - 10mm	#1 RM/LL
5546-A-202	Triathlon Tibial Augment - 10mm	#2 RM/LL
5546-A-302	Triathlon Tibial Augment - 10mm	#3 RM/LL
5546-A-402	Triathlon Tibial Augment - 10mm	#4 RM/LL
5546-A-502	Triathlon Tibial Augment - 10mm	#5 RM/LL
5546-A-602	Triathlon Tibial Augment - 10mm	#6 RM/LL
5546-A-702	Triathlon Tibial Augment - 10mm	#7 RM/LL
5546-A-802	Triathlon Tibial Augment - 10mm	#8 RM/LL

LM-RL = Left Medial/Right Lateral

RM/LL = Right Medial/Left Lateral

Catalog number	Description	
Triathlon TS Femoral Augment part numbers		
5540-A-101	Triathlon Femoral Distal Augment - 5mm	#1 Left
5540-A-201	Triathlon Femoral Distal Augment - 5mm	#2 Left
5540-A-301	Triathlon Femoral Distal Augment - 5mm	#3 Left
5540-A-401	Triathlon Femoral Distal Augment - 5mm	#4 Left
5540-A-501	Triathlon Femoral Distal Augment - 5mm	#5 Left
5540-A-601	Triathlon Femoral Distal Augment - 5mm	#6 Left
5540-A-701	Triathlon Femoral Distal Augment - 5mm	#7 Left
5540-A-801	Triathlon Femoral Distal Augment - 5mm	#8 Left
5540-A-102	Triathlon Femoral Distal Augment - 5mm	#1 Right
5540-A-202	Triathlon Femoral Distal Augment - 5mm	#2 Right
5540-A-302	Triathlon Femoral Distal Augment - 5mm	#3 Right
5540-A-402	Triathlon Femoral Distal Augment - 5mm	#4 Right
5540-A-502	Triathlon Femoral Distal Augment - 5mm	#5 Right
5540-A-602	Triathlon Femoral Distal Augment - 5mm	#6 Right
5540-A-702	Triathlon Femoral Distal Augment - 5mm	#7 Right
5540-A-802	Triathlon Femoral Distal Augment - 5mm	#8 Right
5541-A-101	Triathlon Femoral Distal Augment - 10mm	#1 Left
5541-A-201	Triathlon Femoral Distal Augment - 10mm	#2 Left
5541-A-301	Triathlon Femoral Distal Augment - 10mm	#3 Left
5541-A-401	Triathlon Femoral Distal Augment - 10mm	#4 Left
5541-A-501	Triathlon Femoral Distal Augment - 10mm	#5 Left
5541-A-601	Triathlon Femoral Distal Augment - 10mm	#6 Left
5541-A-701	Triathlon Femoral Distal Augment - 10mm	#7 Left
5541-A-801	Triathlon Femoral Distal Augment - 10mm	#8 Left
5541-A-102	Triathlon Femoral Distal Augment - 10mm	#1 Right
5541-A-202	Triathlon Femoral Distal Augment - 10mm	#2 Right
5541-A-302	Triathlon Femoral Distal Augment - 10mm	#3 Right
5541-A-402	Triathlon Femoral Distal Augment - 10mm	#4 Right
5541-A-502	Triathlon Femoral Distal Augment - 10mm	#5 Right
5541-A-602	Triathlon Femoral Distal Augment - 10mm	#6 Right
5541-A-702	Triathlon Femoral Distal Augment - 10mm	#7 Right
5541-A-802	Triathlon Femoral Distal Augment - 10mm	#8 Right

(Continued)

Catalog number	Description	
Triathlon TS Femoral Augment part numbers - continued		
5542-A-101	Triathlon Femoral Distal Augment - 15mm	#1 Left
5542-A-201	Triathlon Femoral Distal Augment - 15mm	#2 Left
5542-A-301	Triathlon Femoral Distal Augment - 15mm	#3 Left
5542-A-401	Triathlon Femoral Distal Augment - 15mm	#4 Left
5542-A-501	Triathlon Femoral Distal Augment - 15mm	#5 Left
5542-A-601	Triathlon Femoral Distal Augment - 15mm	#6 Left
5542-A-701	Triathlon Femoral Distal Augment - 15mm	#7 Left
5542-A-801	Triathlon Femoral Distal Augment - 15mm	#8 Left
5542-A-102	Triathlon Femoral Distal Augment - 15mm	#1 Right
5542-A-202	Triathlon Femoral Distal Augment - 15mm	#2 Right
5542-A-302	Triathlon Femoral Distal Augment - 15mm	#3 Right
5542-A-402	Triathlon Femoral Distal Augment - 15mm	#4 Right
5542-A-502	Triathlon Femoral Distal Augment - 15mm	#5 Right
5542-A-602	Triathlon Femoral Distal Augment - 15mm	#6 Right
5542-A-702	Triathlon Femoral Distal Augment - 15mm	#7 Right
5542-A-802	Triathlon Femoral Distal Augment - 15mm	#8 Right
5543-A-100	Triathlon Femoral Posterior Augment, 5mm - Size 1	
5543-A-200	Triathlon Femoral Posterior Augment, 5mm - Size 2	
5543-A-300	Triathlon Femoral Posterior Augment, 5mm - Size 3	
5543-A-400	Triathlon Femoral Posterior Augment, 5mm - Size 4	
5543-A-500	Triathlon Femoral Posterior Augment, 5mm - Size 5	
5543-A-600	Triathlon Femoral Posterior Augment, 5mm - Size 6	
5543-A-700	Triathlon Femoral Posterior Augment, 5mm - Size 7	
5543-A-800	Triathlon Femoral Posterior Augment, 5mm - Size 8	
5544-A-100	Triathlon Femoral Posterior Augment, 10mm - Size 1	
5544-A-200	Triathlon Femoral Posterior Augment, 10mm - Size 2	
5544-A-300	Triathlon Femoral Posterior Augment, 10mm - Size 3	
5544-A-400	Triathlon Femoral Posterior Augment, 10mm - Size 4	
5544-A-500	Triathlon Femoral Posterior Augment, 10mm - Size 5	
5544-A-600	Triathlon Femoral Posterior Augment, 10mm - Size 6	
5544-A-700	Triathlon Femoral Posterior Augment, 10mm - Size 7	
5544-A-800	Triathlon Femoral Posterior Augment, 10mm - Size 8	

Catalog number	Description	
Triathlon TS Stem Extender part numbers		
5571-S-025	Triathlon Stem Extender	25mm
5571-S-050	Triathlon Stem Extender	50mm

Catalog number	Description	
Triathlon TS Offset Adapter part numbers		
5570-S-020	Triathlon TS Offset Adapter	2mm
5570-S-040	Triathlon TS Offset Adapter	4mm
5570-S-060	Triathlon TS Offset Adapter	6mm
5570-S-080	Triathlon TS Offset Adapter	8mm

Triathlon Tritanium Cone Augment instruments

Catalog number	Description	Quantity in kit
Tibial Cone Upper Tray part numbers		
6543-5-200	Tibial Symmetric Cone Reamer	1
6543-5-220	Tibial Asymmetric Cone Reamer Size B	1
6543-5-230	Tibial Asymmetric Cone Reamer Size C	1
6543-5-240	Tibial Asymmetric Cone Reamer Size D	1
6543-5-250	Tibial Asymmetric Cone Reamer Size E	1
6543-5-201	Tibial Cone Reamer Guide LM/RL	1
6543-5-202	Tibial Cone Reamer Guide RM/LL	1
6543-5-203	Tibial Cone Alignment Guide	1
6543-8-017	Tibial Cone Upper Tray	1

Catalog number	Description	Quantity in kit
Tibial Cone Lower Tray part numbers		
6543-5-211	Tibial Cone Introducer Size A	1
6543-5-221	Tibial Cone Introducer Size B	1
6543-5-231	Tibial Cone Introducer Size C	1
6543-5-241	Tibial Cone Introducer Size D	1
6543-5-251	Tibial Cone Introducer Size E	1
6541-5-100	Cone Extractor	1
5549-T-110	Tibial Symmetric Cone Augment Trial Size A	1
5549-T-120	Tibial Symmetric Cone Augment Trial Size B	1
5549-T-130	Tibial Symmetric Cone Augment Trial Size C	1
5549-T-140	Tibial Symmetric Cone Augment Trial Size D	1
5549-T-150	Tibial Symmetric Cone Augment Trial Size E	1
5549-T-221	Tibial Asymmetric Cone Augment Trial Size B LM/RL	1
5549-T-222	Tibial Asymmetric Cone Augment Trial Size B RM/LL	1
5549-T-231	Tibial Asymmetric Cone Augment Trial Size C LM/RL	1
5549-T-232	Tibial Asymmetric Cone Augment Trial Size C RM/LL	1
5549-T-241	Tibial Asymmetric Cone Augment Trial Size D LM/RL	1
5549-T-242	Tibial Asymmetric Cone Augment Trial Size D RM/LL	1
5549-T-251	Tibial Asymmetric Cone Augment Trial Size E LM/RL	1
5549-T-252	Tibial Asymmetric Cone Augment Trial Size E RM/LL	1
6543-8-117	Tibial Cone Lower Tray	1
5900-8114	Stryker Case	1

Catalog number	Description	Quantity in kit
Femoral Cone Prep. 1 Tray part numbers		
6543-5-300	Femoral Symmetric Cone Reamer	1
6543-5-301	Femoral Cone Reamer Guide	1
6543-5-303	Femoral Cone Alignment Guide	1
6543-5-304	Femoral Cone Introducer	1
6541-5-100	Cone Extractor	1
5549-T-321	Femoral Cone Augment Trial Size 1 & 2 Left	1
5549-T-322	Femoral Cone Augment Trial Size 1 & 2 Right	1
5549-T-331	Femoral Cone Augment Trial Size 3 Left	1
5549-T-332	Femoral Cone Augment Trial Size 3 Right	1
5549-T-341	Femoral Cone Augment Trial Size 4 Left	1
5549-T-342	Femoral Cone Augment Trial Size 4 Right	1
5549-T-351	Femoral Cone Augment Trial Size 5 Left	1
5549-T-352	Femoral Cone Augment Trial Size 5 Right	1
5549-T-361	Femoral Cone Augment Trial Size 6 Left	1
5549-T-362	Femoral Cone Augment Trial Size 6 Right	1
5549-T-371	Femoral Cone Augment Trial Size 7 & 8 Left	1
5549-T-372	Femoral Cone Augment Trial Size 7 & 8 Right	1
6543-8-118	Femoral Cone Prep. 1 Tray	1
1020-9000	Single Tray Case	1

Catalog number	Description	Quantity in kit
Femoral Cone Prep. 2 Tray part numbers		
6543-5-302	Femoral Cone Handle	1
6543-5-321	Femoral Cone Stabilizer Size 1 & 2	1
6543-5-331	Femoral Cone Stabilizer Size 3	1
6543-5-341	Femoral Cone Stabilizer Size 4	1
6543-5-351	Femoral Cone Stabilizer Size 5	1
6543-5-361	Femoral Cone Stabilizer Size 6	1
6543-5-371	Femoral Cone Stabilizer Size 7 & 8	1
6543-5-320	Femoral Cone Reamer Size 1 & 2	1
6543-5-330	Femoral Cone Reamer Size 3	1
6543-5-340	Femoral Cone Reamer Size 4	1
6543-5-350	Femoral Cone Reamer Size 5	1
6543-5-360	Femoral Cone Reamer Size 6	1
6543-5-370	Femoral Cone Reamer Size 7 & 8	1
6543-8-018	Femoral Cone Prep. 2 Tray	1
1020-9000	Single Tray Case	1

Catalog number	Description	Quantity in kit
Central Femoral Cone Tray part numbers		
6543-6-128	Central Femoral Cone Introducer Size 1 - 4	1
6543-6-129	Central Femoral Cone Introducer Size 5 - 8	1
6543-6-130	TS Central Femoral Cone Reamer	1
6543-6-131	Central Femoral Cone Augment Trial Size 1-2, Left	1
6543-6-132	Central Femoral Cone Augment Trial Size 1-2, Right	1
6543-6-135	Central Femoral Cone Augment Trial Size 3-4, Left	1
6543-6-136	Central Femoral Cone Augment Trial Size 3-4, Right	1
6543-6-137	Central Femoral Cone Augment Trial Size 5, Left	1
6543-6-138	Central Femoral Cone Augment Trial Size 5, Right	1
6543-6-139	Central Femoral Cone Augment Trial Size 6, Left	1
6543-6-140	Central Femoral Cone Augment Trial Size 6, Right	1
6543-6-141	Central Femoral Cone Augment Trial Size 7-8, Left	1
6543-6-142	Central Femoral Cone Augment Trial Size 7-8, Right	1
6541-5-100	Cone Extractor	1
6543-6-960	Triathlon Tritanium Central Femoral Cone Preparation Tray	1

Triathlon Tritanium Cone Augment implants

Catalog number	Description
Triathlon Tritanium Cone Augments part numbers	
5549-A-110	Triathlon Tritanium Symmetric Cone Augment Size A
5549-A-120	Triathlon Tritanium Symmetric Cone Augment Size B
5549-A-130	Triathlon Tritanium Symmetric Cone Augment Size C
5549-A-140	Triathlon Tritanium Symmetric Cone Augment Size D
5549-A-150	Triathlon Tritanium Symmetric Cone Augment Size E
5549-A-221	Triathlon Tritanium Asymmetric Cone Augment Size B LM/RL
5549-A-222	Triathlon Tritanium Asymmetric Cone Augment Size B RM/LL
5549-A-231	Triathlon Tritanium Asymmetric Cone Augment Size C LM/RL
5549-A-232	Triathlon Tritanium Asymmetric Cone Augment Size C RM/LL
5549-A-241	Triathlon Tritanium Asymmetric Cone Augment Size D LM/RL
5549-A-242	Triathlon Tritanium Asymmetric Cone Augment Size D RM/LL
5549-A-251	Triathlon Tritanium Asymmetric Cone Augment Size E LM/RL
5549-A-252	Triathlon Tritanium Asymmetric Cone Augment Size E RM/LL
5549-A-321	Triathlon Tritanium Femoral Cone Augment Size 1 & 2 Left
5549-A-322	Triathlon Tritanium Femoral Cone Augment Size 1 & 2 Right
5549-A-331	Triathlon Tritanium Femoral Cone Augment Size 3 Left
5549-A-332	Triathlon Tritanium Femoral Cone Augment Size 3 Right
5549-A-341	Triathlon Tritanium Femoral Cone Augment Size 4 Left
5549-A-342	Triathlon Tritanium Femoral Cone Augment Size 4 Right
5549-A-351	Triathlon Tritanium Femoral Cone Augment Size 5 Left
5549-A-352	Triathlon Tritanium Femoral Cone Augment Size 5 Right
5549-A-361	Triathlon Tritanium Femoral Cone Augment Size 6 Left
5549-A-362	Triathlon Tritanium Femoral Cone Augment Size 6 Right
5549-A-371	Triathlon Tritanium Femoral Cone Augment Size 7 & 8 Left
5549-A-372	Triathlon Tritanium Femoral Cone Augment Size 7 & 8 Right
5549-A-621	Triathlon Tritanium Central Femoral Cone Augment Size 1&2 Left
5549-A-622	Triathlon Tritanium Central Femoral Cone Augment Size 1&2 Right
5549-A-641	Triathlon Tritanium Central Femoral Cone Augment Size 3&4 Left
5549-A-642	Triathlon Tritanium Central Femoral Cone Augment Size 3&4 Right
5549-A-651	Triathlon Tritanium Central Femoral Cone Augment Size 5 Left
5549-A-652	Triathlon Tritanium Central Femoral Cone Augment Size 5 Right
5549-A-661	Triathlon Tritanium Central Femoral Cone Augment Size 6 Left
5549-A-662	Triathlon Tritanium Central Femoral Cone Augment Size 6 Right
5549-A-671	Triathlon Tritanium Central Femoral Cone Augment Size 7&8 Left
5549-A-672	Triathlon Tritanium Central Femoral Cone Augment Size 7&8 Right
LTEMK39	Triathlon TS X-Ray Templates
LTEMK45	Triathlon Tritanium Cones X-Ray Templates



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Howmedica Osteonics Corp.
325 Corporate Drive
Mahwah, NJ 07430, USA
A subsidiary of Stryker Corporation
t: 201 831 5000

stryker.com