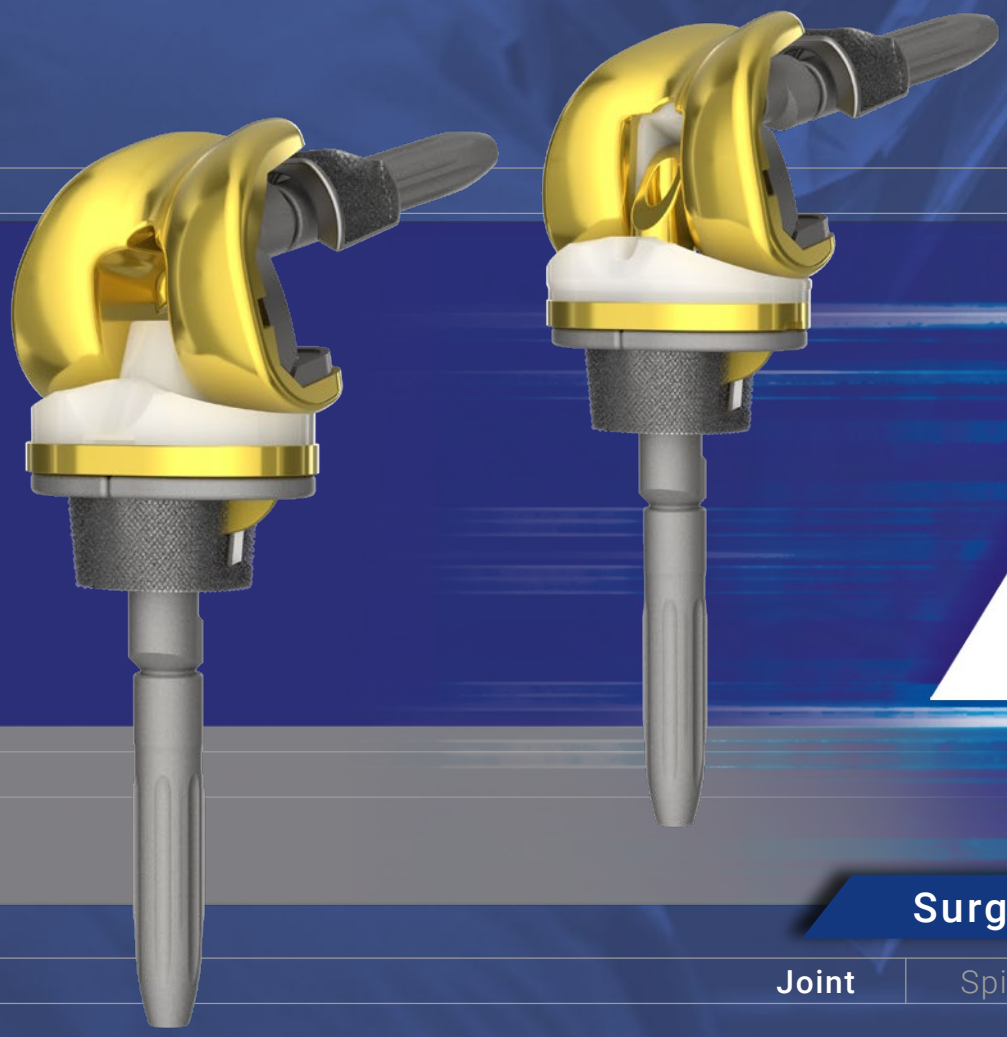
Valid on 17 Aug 2024

GMK® REVISION SYSTEM

GLOBAL MEDACTA KNEE

DIFFERENT NEEDS... ...YOUR GLOBAL SOLUTION



Surgical Technique

Joint | Spine | Sports Med

Medacta International

TABLE OF CONTENTS

1. INTRODUCTION

GMK Revision and GMK Hinge can be implanted following different surgical techniques, according to the surgeon's preferences and habits.

The technique herein described can be used in both tibia first and femur first approaches.

The GMK Revision System includes GMK Revision and GMK Hinge.

These prostheses are indicated for primary or revision total knee surgeries in the presence of a moderate to serious collateral ligament deficiency and/or bone loss. Total knee arthroplasties may be subject to failure for various reasons, including polyethylene wear, aseptic loosening, osteolysis, infection, ligamentous instability and patello-femoral complications.

Goals of a successful total knee revision include, amongst others:

- Mechanical alignment restoration
- Re-establishment of the joint line
- Good fixation of revision implant components
- Restoration of an acceptable range of motion
- Flexion/extension gap balancing

It is the surgeon's responsibility to assess whether the indications for use are respected.

CAUTION
Some specific instruments are fixed to the bone by means of dedicated pins. Before using the pins, ensure that they are intact and fully functional. BENT OR DEFECTIVE PINS MUST NOT BE USED AND MUST BE REPLACED BY NEW ONES. The extraction of the pins must be performed taking care to avoid bending them. This result in axial alignment between the pin and the dedicated extractor. It is strongly recommended not to impact or hammer any instruments unless otherwise specified in the surgical technique. For detailed instructions, please contact your local Medacta sales representative.

CAUTION
Incorrect assembling of the hinge-post mechanism may lead to early mechanical failure of this mechanism. Following the correct procedure to assemble all the implant modular connections as described herein is crucial for the implant survival rate. A quick reference guide for implant assembling is provided in Annex 5.

1.1 INDICATION OF USE

GMK REVISION

The GMK Revision knee prosthesis is designed for cemented use in total knee arthroplasty, if there is evidence of sufficient sound bone to seat and support the components. Candidates for total knee replacement are skeletally mature patients with a severely painful and/or severely disabled joint as a result of osteoarthritis, post-traumatic arthritis, rheumatoid polyarthritis, or primary implantation failure. The surgeon will establish the unequivocal indication for total knee replacement and will consider the risks associated with the surgical treatment. Some limitations in the postoperative activity must also be discussed with the patient and taken into account when assessing the risk/benefit ratio.

Cemented tibial augments are to be attached to the tibial baseplate by means of both the fixing cylinders and bone cement. Screw-fixed tibial augments are intended for fixation to the tibial baseplate by means of two provided screw.

In the case a Semi-Constrained liner is being used, an extension stem must be implanted both on the tibial and on the femoral components.
In the case a GMK Revision tibial tray is being used, an extension stem must be implanted.

GMK HINGE

The GMK Hinge knee prosthesis is designed for cemented use in total knee arthroplasty when the preoperative diagnosis of the joint in skeletally mature patients determines that the bone and stability situation require the implantation of a constrained prosthesis.

The GMK Hinge knee system is indicated in the following cases:

- Severely painful and/or disabled joint as a result of arthritis, traumatic arthritis, rheumatoid arthritis or polyarthritis associated with bone loss and/or severe joint instability
- Considerable loss of function of the knee joint
- High-grade joint destruction requiring additional stabilization with stems and reconstruction of bone defects with metal augment
- Failure of a primary prosthesis (e.g. infection, loosening)
- Former revision arthroplasty
- Post traumatic loss of joint configuration
- Avascular necrosis of femoral condyle

The tibial augment is to be fixed to the tibial baseplate with both the two provided fixing screws. When a GMK Hinge implant is used, it is mandatory to implant both the femoral and tibial components with an extension stem.

1.2 CONTRAINDICATIONS

GMK REVISION

GMK Revision knee replacement is contraindicated in the following cases:

- Progressive local or systemic infection
- Muscular loss, neuromuscular disease or vascular deficiency of the affected limb, which are likely to compromise the postoperative evolution
- Severe instability secondary to advanced destruction of osteochondral structures or loss of integrity of one or both collateral ligaments

Mental or neuromuscular disorders may create an unacceptable risk to the patient and can be a source of postoperative complications. It is the surgeon's responsibility to ensure that the patient has no known allergy to the materials used.

GMK HINGE

GMK Hinge knee replacement is contraindicated in the following cases:

- Progressive local or systemic infection
- Muscular loss, neuromuscular disease or vascular deficiency of the affected limb, which are likely to compromise the postoperative evolution

Mental or neuromuscular disorders may create an unacceptable risk to the patient and can be a source of postoperative complications. It is the surgeon's responsibility to ensure that the patient has no known allergy to the materials used.

1.3 PREOPERATIVE PLANNING

Preoperative planning is based both on X-ray images and physical evaluation.

From the X-ray images, the surgeon can evaluate the bone stock condition, and the alignment and fixation of the primary implant, and they can document the joint line position and the patella status.

By templating the X-rays and, if possible, comparing the limb undergoing surgery with the healthy one, it is possible to estimate the correct alignment and implant size, confirm the joint line position and assess the need for a tibial or femoral augment.

2. PRIMARY IMPLANT REMOVAL

When the GMK Revision or GMK Hinge knee prostheses are needed for revision surgeries, the first goal in removing the previous implant is to preserve as much bone as possible.

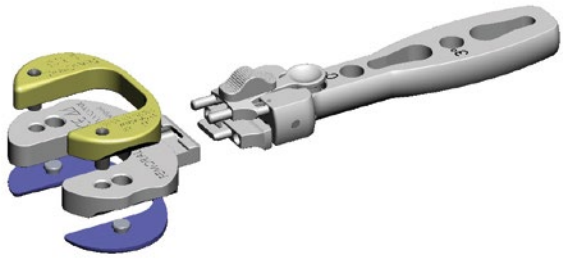
The incision should be performed following the incision of the primary surgery. The previous implant can be removed by means of dedicated tools, including osteotomes and oscillating saws.

Disrupt the bone-cement interface or bone-implant interface and gently remove the implant components paying attention not to sacrifice unnecessary bone stock or cause undesirable fractures. After the implant components have been removed, clear all the residual cement with chisels or power tools and accurately wash the articulation.

3. JOINT LINE AND JOINT SPACE ASSESSMENT

Assemble the trial base handle with the independent cut reference spacer, the minimum 10 mm tibial spacer and the most suitable femoral spacer. Put the knee in flexion and insert the spacers.

If necessary, use a thicker tibial spacer to fill the flexion gap. Then put the knee in extension and reinsert the spacers which have been validated in flexion. If needed, plan to use posterior or distal augments in combination with the femoral offset adapter to compensate for the difference between the flexion and extension gaps.



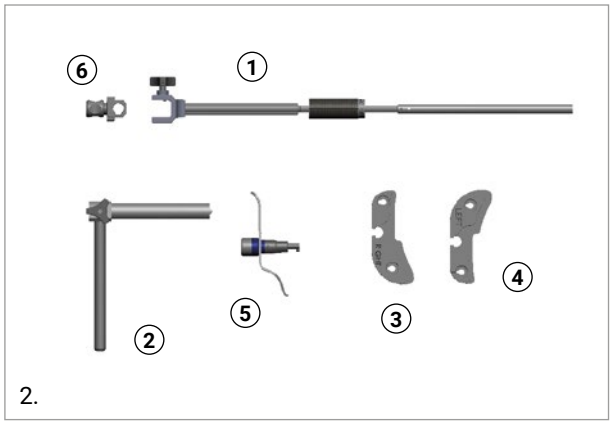
1.

4. TIBIAL RESECTION

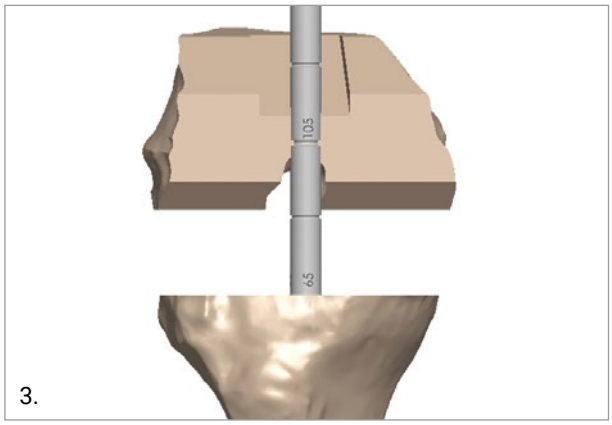
The Intramedullary alignment system includes:

- Revision Intramedullary Guide (1)
- Intramedullary Rod Guide (2)
- Revision Right/Left Tibial Cutting Guide (3) (4)
- 0 mm Tibial Palpator (5)
- Sliding block for revision IM guide (6)

Open the intramedullary canal, using the 9 mm drill mounted on a motor. Connect the 9 mm safe guiding reamer to the dedicated T-handle and manually ream the tibial intramedullary canal.



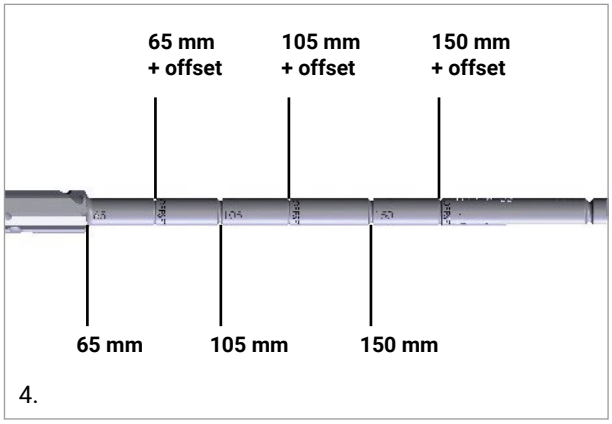
2.



3.

Different reamer diameters are available to obtain the greatest stability in the canal.

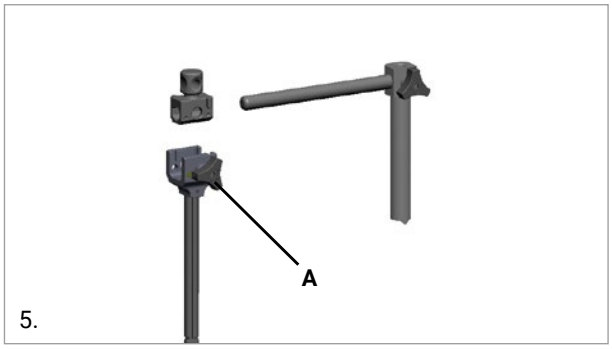
NOTE: Different reaming depths are engraved on each reamer. Make sure to align the depth marker with the existing distal resection in order to correctly reach the corresponding depth.



4.

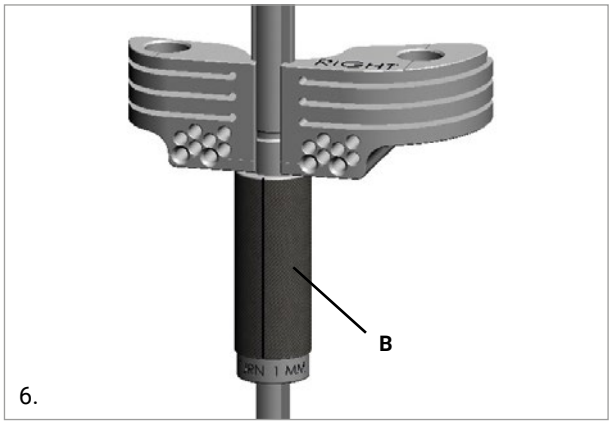
NOTE: The reamer diameter and reaming depth determine the extension stem size to be implanted.

Insert the intramedullary rod guide into the sliding block, then insert this construct into the revision intramedullary guide and lock the connection by turning the corresponding knob (A).



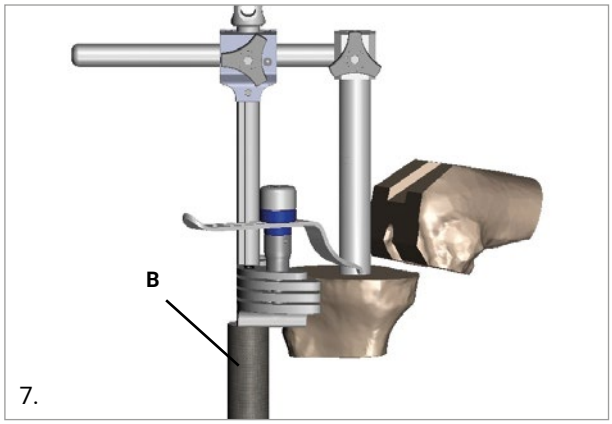
5.

Insert the tibial cutting block for the correct side (left/right) on the threaded part of the revision intramedullary guide and slide it up manually along the rail by turning the micrometric screw (B).



6.

Insert the assembly onto the reamer. To define the cut height, a 0 mm tibial stylus can be assembled on the tibial cutting guide. To adjust the position of the tibial cutting block, turn the micrometric screw (B).



7.

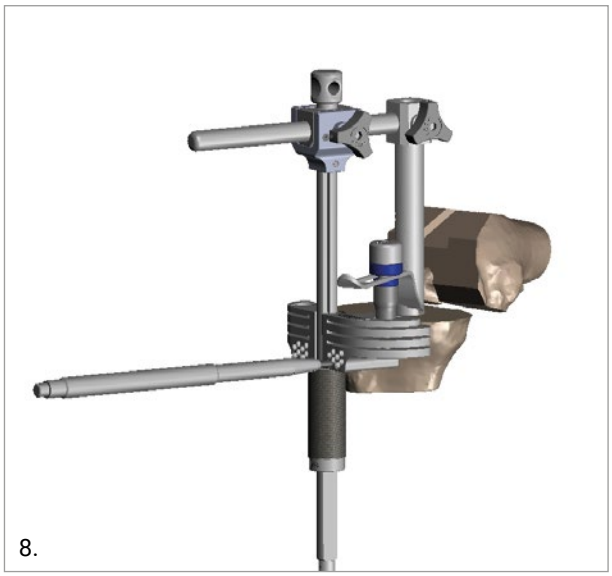
NOTE: 1 turn of the micrometric screw corresponds to 1 mm adjustment.

NOTE: If the medial and lateral sides of the existing tibial cut are consumed differently, position the stylus on the less worn side, then plan to use a tibial augment on the more consumed side. This solution allows for more bone stock to be preserved.

OPTION

The rotation of the tibial cutting block can be double checked by means of the extramedullary telescopic rod inserted in the revision intramedullary guide using the ankle center as reference point.

Once the cutting guide position is deemed satisfactory, drill and then insert two pins in the row of holes marked with a line with the help of a pin impactor.


8.

Once the cutting block has been fixed to the bone, remove the alignment system:

- Remove the tibial stylus
- Unscrew the micrometric screw
- Unlock all the knobs
- Pull up the sliding block together with the intramedullary rod guide
- Extract the intramedullary rod guide
- Extract the reamer with the T-handle

Check the guide position with the help of the angel wing and, if necessary, reposition the guide on the pins using the correction holes (+2, +4, +6 mm).

When the position of the guide is deemed satisfactory, insert the third oblique stabilization pin and then perform the tibial cut. The cuts are based on the intramedullary reference. Once all the resections have been performed, remove the cutting block and the pins.

5. TIBIAL AUGMENTS (OPTION)

In the case of bone loss, specific metal augments can be inserted under the tibial baseplate, either on the medial or lateral side, or both. The following table summarizes the available tibia augments.

TIBIA AUGMENT

THICKNESS (mm)	SIZE
5	0 - 1 - 2 - 3 - 4 - 5 - 6
10	0 - 1 - 2 - 3 - 4 - 5 - 6

The horizontal cuts for the tibial augments can be carried out through dedicated slots on the tibial cutting block.

CAUTION
While performing the vertical resection, make sure to cut in the center of the tibia and parallel to the AP tibia axis in order to allow for full seating of the augment.

9.

Tibial cutting block (right knee)

5 mm tibial augment

10 mm tibial augment

A tibial baseplate size X accepts the trial tibial augments size X and X-1. To simulate a 10 mm tibial augment, clip two 5 mm provisional augments together.

6. TIBIAL BASEPLATE POSITIONING

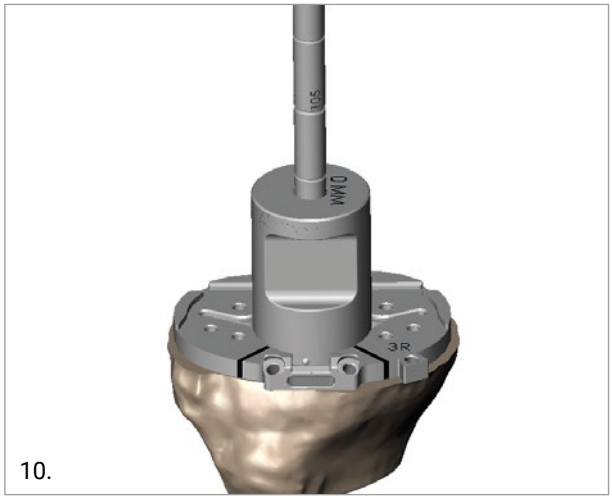
Select the tibial tray of the appropriate size.

OPTION
If any tibial augment is needed, clip the provisional augment on the bottom of the trial tray before positioning it on the bone.

The bushings with 8 mm internal diameter work off the reamer and are designed to be used as centralizers when adjusting the offset on the tibia.

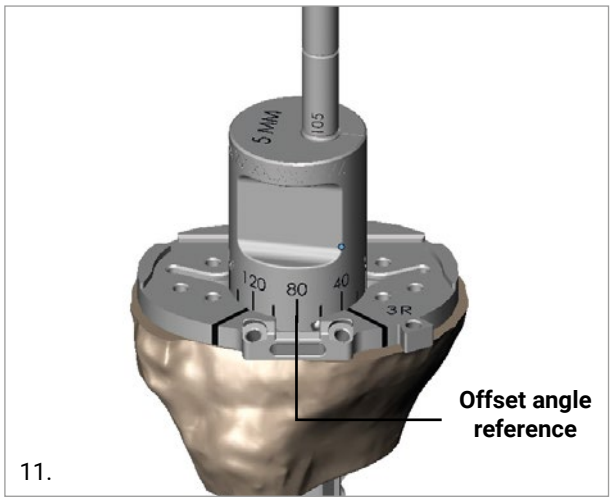
The bushings are available for the tibia in three versions: neutral (i.e. 0 mm), 3 mm and 5 mm offset.

Slide the 0 mm neutral bushing onto the reamer. If the tibial tray properly covers the tibial resection, no offset is required.



10.

If a tibial offset is needed, replace the 0 mm neutral bushing with the 3 mm or 5 mm offset bushing and turn the baseplate until the desired position on the cortical rim is obtained.

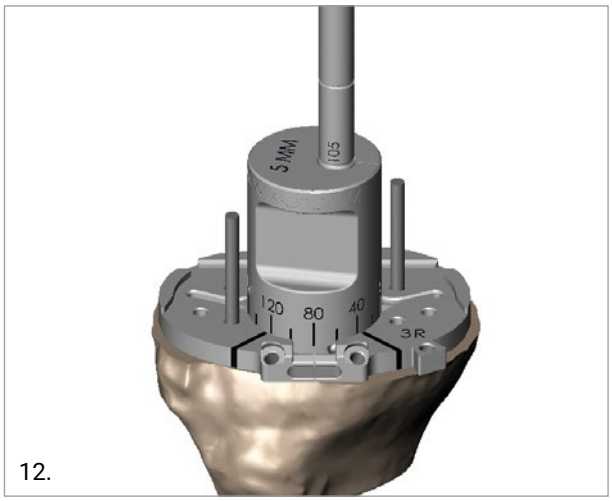


11.

When the tibial tray is correctly positioned, read the angle indicated on the reference line, in the middle of the trial baseplate. Each mark on the bushing corresponds to a 20° angle. The example above shows an angle set at 80°.

NOTE: If necessary, adjust the vertical cut for the tibial augment according to the offset and tibial rotation selected.

When the final position is defined, fix the tibial baseplate with two pins.



12.

NOTE: The validated offset and angle must be reproduced on the trial tibial component.

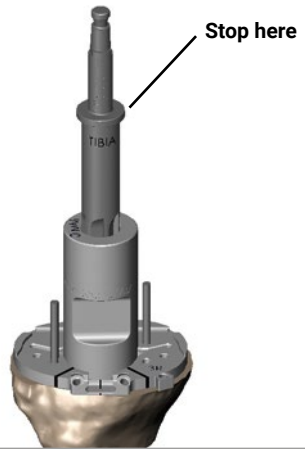
Finally, remove the bushing and intramedullary reamer.

7. TIBIA FINISHING

OPTION
In order to help identify the correct position of the tibial baseplate two lines are marked on the anterior wall of the tibial implant, corresponding to the alignment lines on the trial tibial baseplate. Once the trial baseplate is fixed, identify the position of these two lines on the tibia by electrodiathermy.

The bushing with a 15.5 mm internal diameter is designed for final preparation of the tibia to create room for the offset coupler and for the stem connection, where needed.

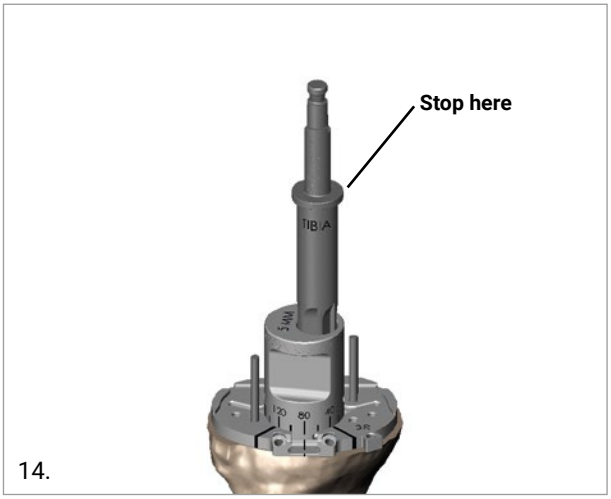
OPTION
When a 3 or 5 mm offset coupler is required for correct placement of the tibial tray, room must be created for the component using the 15.5 mm reamer. Attach the neutral bushing (i.e. 0 mm) onto the fixed tibial baseplate. Using two fingers, hold the bushing firmly and ream with the 15.5 mm reamer.



13.

NOTE: This step is not needed when implanting GMK Hinge even if an offset coupler is used.

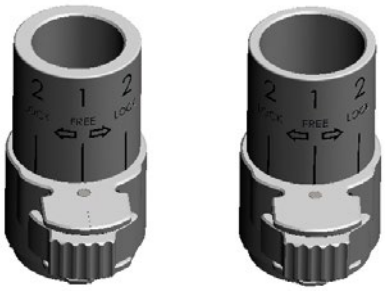
OPTION
If the intramedullary canal is prepared with a 15 mm or smaller reamer, room must be created for the component. Attach the 3 or 5 mm bushing onto the fixed tibial baseplate. Rotate the bushing until the correct angle is achieved. Using two fingers, hold the bushing firmly and ream with the 15.5 mm reamer.



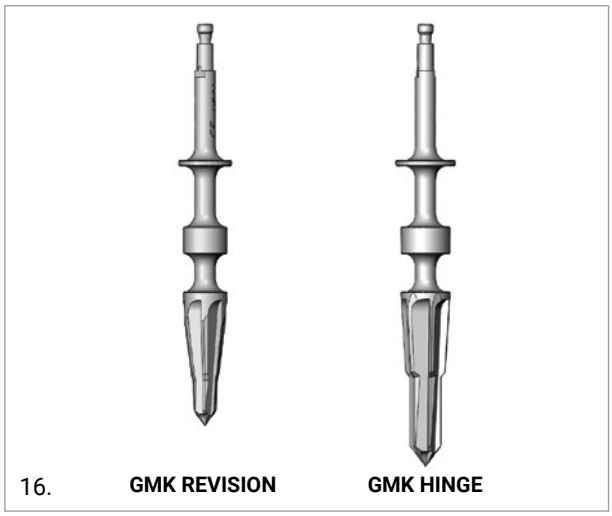
14.

CAUTION
The rotation of the bushing is important at this stage.

CAUTION
The keel on the GMK Hinge has a larger diameter than the keel of the GMK Revision. To accommodate the difference, a larger keel reamer and reamer guide are provided for the GMK Hinge. Note the description provided on the instruments.



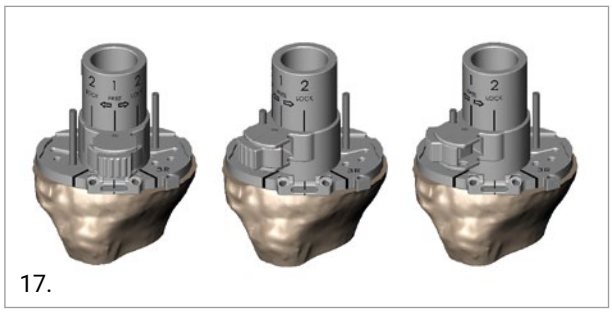
15.
GMK REVISION GMK HINGE



16.

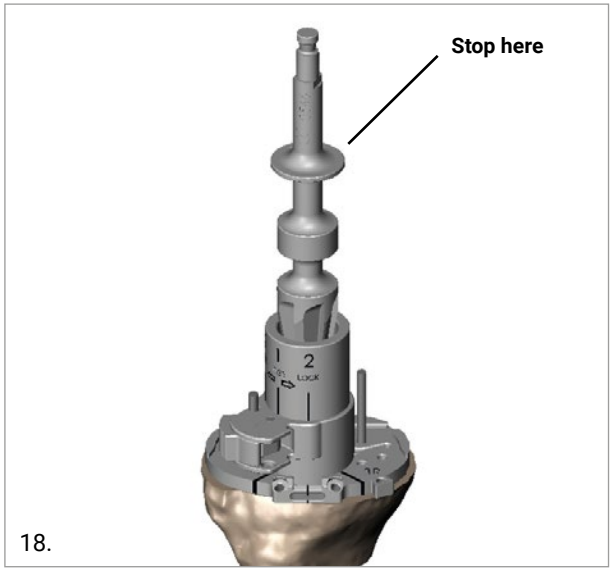
Assemble the reamer guide on the trial base plate following these steps:

- Attach the reamer guide to the base plate
- Rotate the reamer guide until contact with a pin is made
- Lock the button around the pin to secure the connection



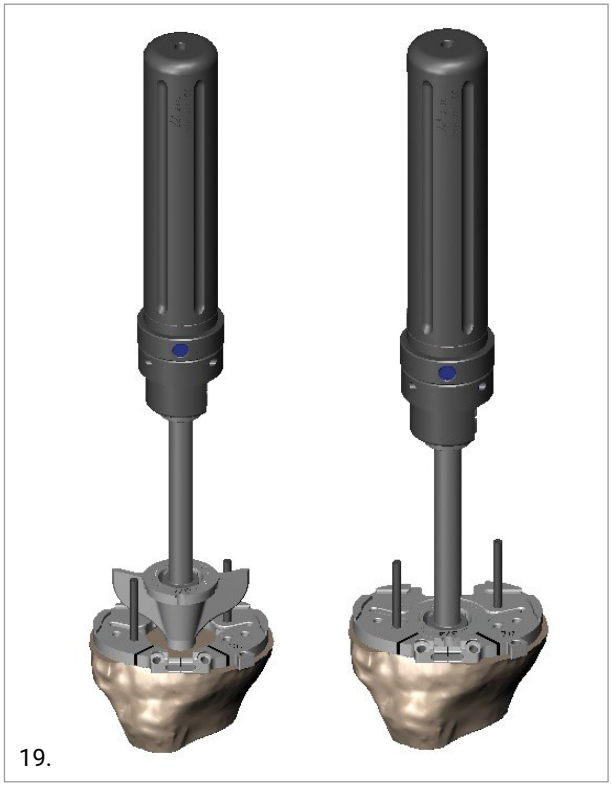
17.

Ream to accommodate the tibial keel with the conical reamer until the stopper is reached.



18.

Screw the impactor handle onto the puncher and impact the assembly through the trial baseplate using the sliding hammer to finish the keel preparation.



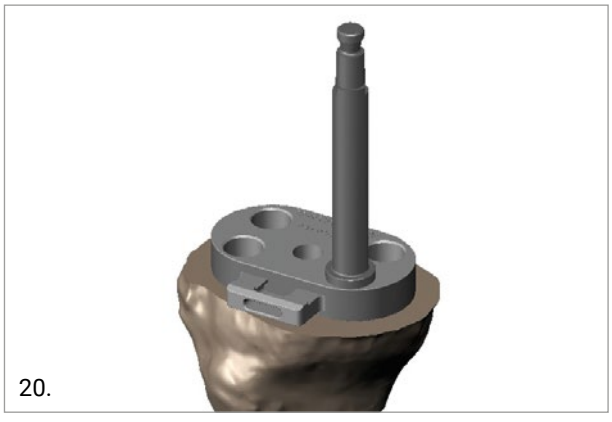
19.

NOTE: In case of sclerotic bone it is recommended to use the saw blade through the tibial tray slots before punching.

After the keel site has been created, remove the puncher together with the trial baseplate and finally the pins.

OPTION

When no tibial augments are required, it may be necessary to ream for the augment bosses located on the distal side of the tibial baseplate. If needed, position the reaming guide onto the resected tibia. Using the boss reamer, ream 4 pockets to accommodate the augment bosses.

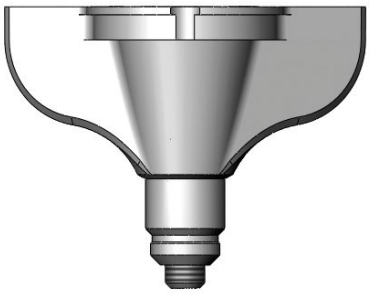


20.

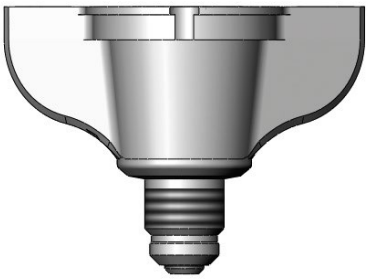
8. TRIAL TIBIAL COMPONENT

CAUTION

GMK Revision and GMK Hinge have different punchers. The larger one must be used for GMK Hinge. Pay attention to the name written on the puncher.



GMK REVISION



GMK HINGE

21.

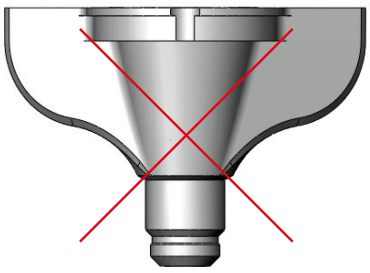
GMK REVISION

GMK HINGE

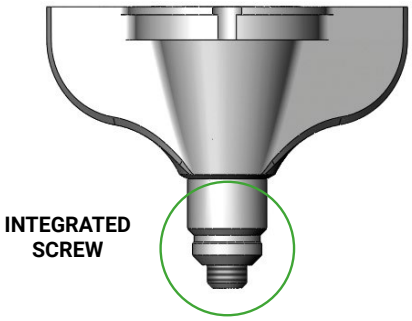
22.

CAUTION

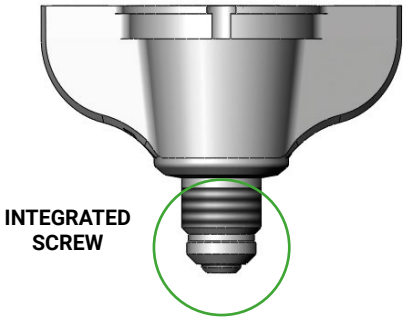
If the GMK Revision or GMK Hinge instrumentation is used for primary cases, make sure not to mix the tibial punchers. Use the punchers with the integrated screw.



GMK PRIMARY/GMK SPHERE



GMK REVISION

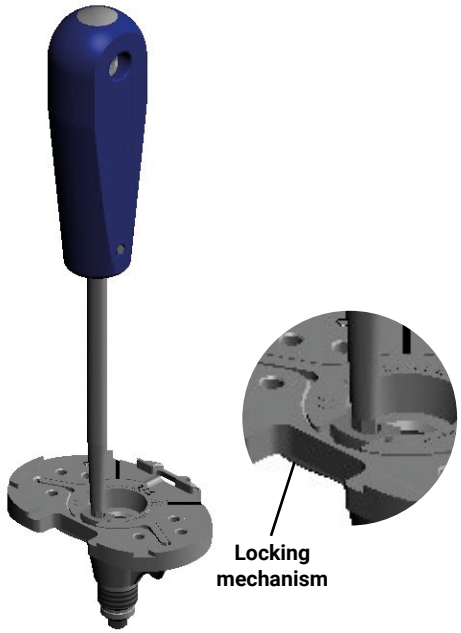


GMK HINGE

23.

8.1 TIBIA WITHOUT OFFSET

Insert the puncher into the trial baseplate, then secure the connection between the puncher and the trial baseplate by sliding the locking mechanism backward using the screwdriver.



24.

Screw the extension stem of the correct size onto the puncher.

25.

Screw the impactor handle onto the puncher and finally impact the assembly on the tibial bone by using the sliding hammer.

26.

OPTION

If a tibial augment is needed, it must be clipped on the trial baseplate before impaction on bone.

27.

CAUTION

As the ML and AP dimensions of the size X trial tibial augment are smaller than the ML and AP dimensions of the size X tibial augment of the final implant, the trial augment must be used only to check the final thickness of the implant (ref. from 02.07.10.3501 to 02.07.10.3506).

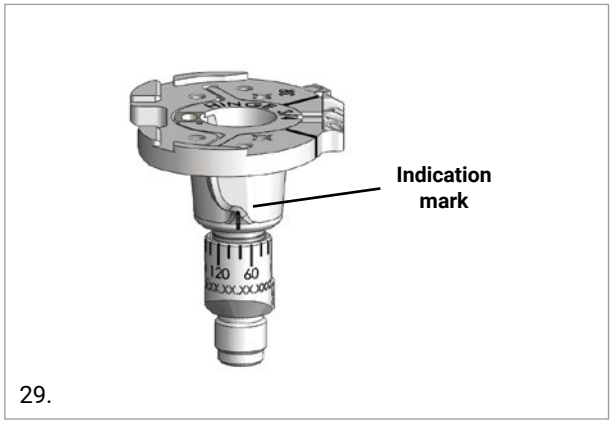
8.2 TIBIA WITH OFFSET

Insert the puncher into the trial baseplate, then secure the connection between the puncher and the trial baseplate by sliding the locking mechanism backward using the screwdriver.

28.

Clip the previously validated trial offset onto the tibial keel, then reproduce the validated angle by aligning the sundial marking on the offset coupler with the marked line on the tibial keel.

On the trial keel, the indication mark is located on the medial side of the left baseplate and on the lateral side of the right baseplate.



29.

Next, fix the offset angle using the integrated screw in the trial keel.

30.

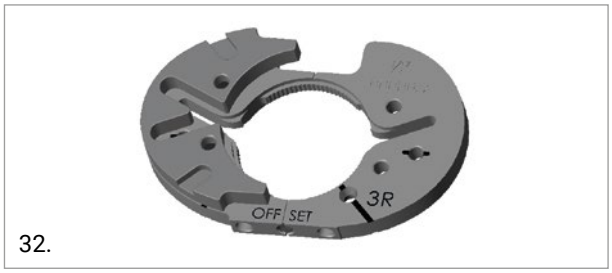
CAUTION
Ensure that the offset angle is not altered while screwing.

Finally, screw the validated extension stem onto the trial offset.

31.

Screw the impactor handle onto the puncher and impact the assembly onto the tibial bone by using the sliding hammer.

OPTION
If a tibial augment is needed, it must be clipped on the trial baseplate before impaction on bone.



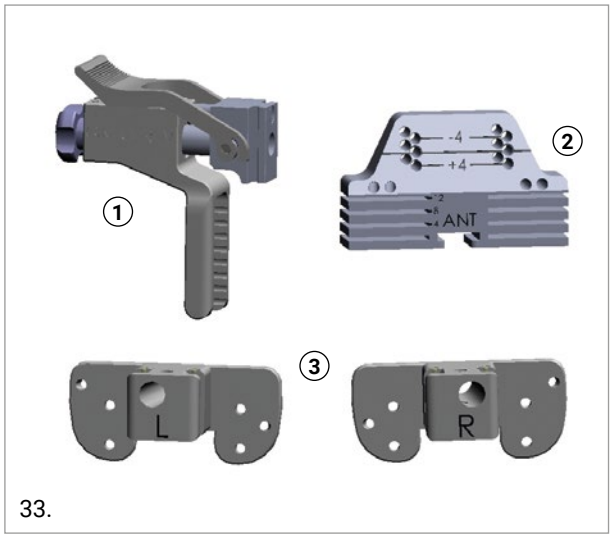
32.

CAUTION
As the ML and AP dimensions of the size X trial tibial augment are smaller than the ML and AP dimensions of the size X tibial augment of the final implant, the trial augment must be used only to check the final thickness of the implant (ref. from 02.07.10.3501 to 02.07.10.3506).

9. FEMORAL DISTAL RESECTION

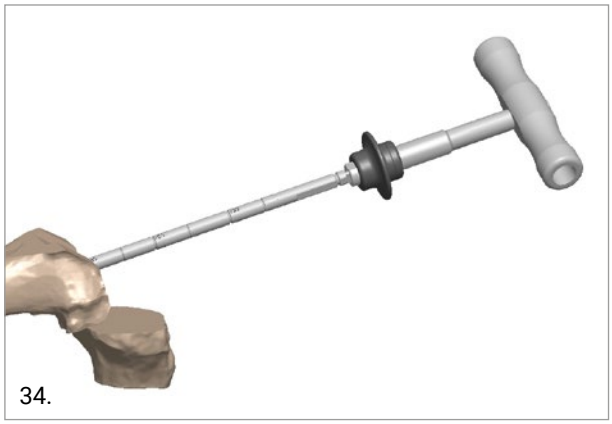
The femoral distal cut system consists of:

- Micrometric Distal Cut Positioner (1)
- Distal Cutting Block (2)
- Distal Cut Positioner (Left/Right) (3)



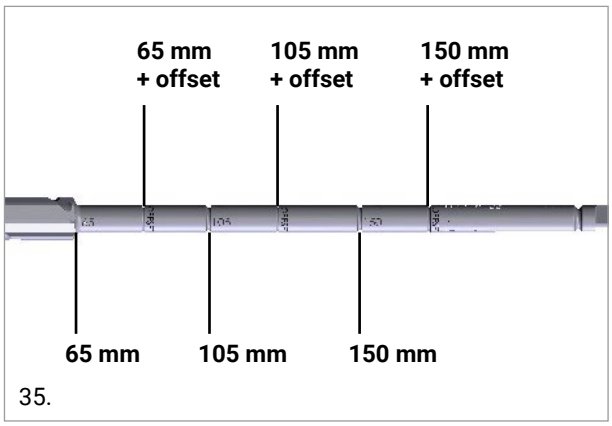
33.

Open the intramedullary canal using the 9 mm drill mounted on a motor. Connect the 9 mm safe guiding reamer to the dedicated T-handle and manually ream the femoral intramedullary canal.
Different reamer diameters are available to achieve the greatest stability into the canal.



34.

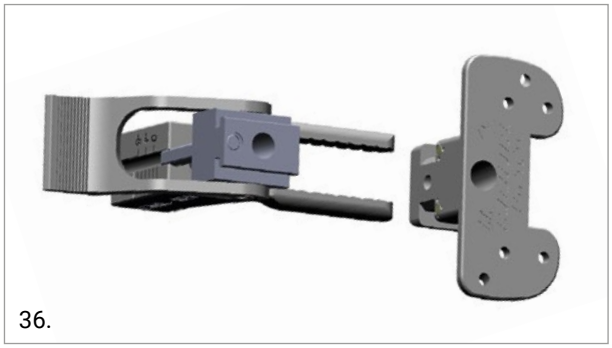
NOTE: Different reaming depths are engraved on each reamer. Make sure to align the depth marker to the existing distal resection in order to correctly reach the corresponding depth.



35.

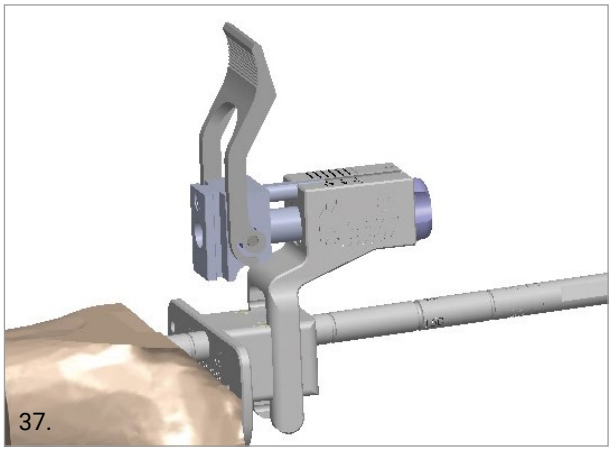
NOTE: The reamer diameter and reaming depth determine the extension stem size to be implanted.

Slide the micrometric distal cut positioner on the distal cut positioner of the correct side (left or right). When assembled onto the reamer, for a right knee, the "R" should be right side up; instead, for a left knee the "L" should be right side up.



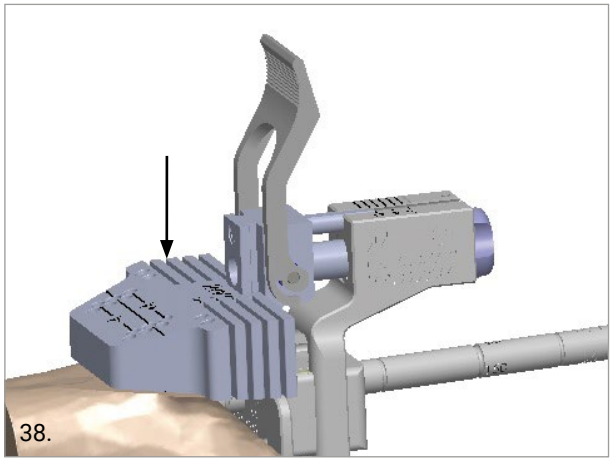
36.

Next, slide the assembly onto the reamer.
This system sets the distal cut at 6° of inclination with respect to the intramedullary axis.



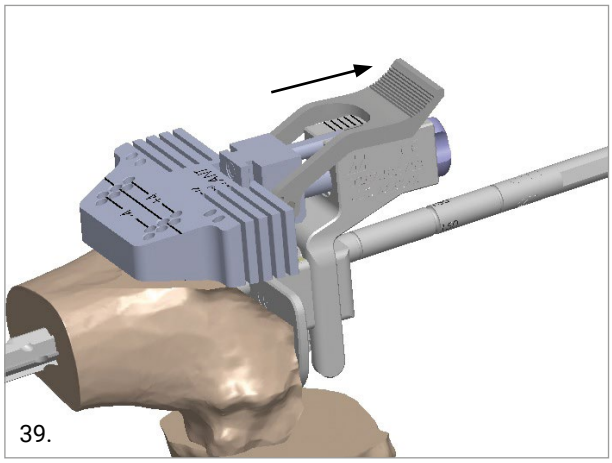
37.

Slide the distal cutting block on the plate located on the micrometric distal cut positioner.



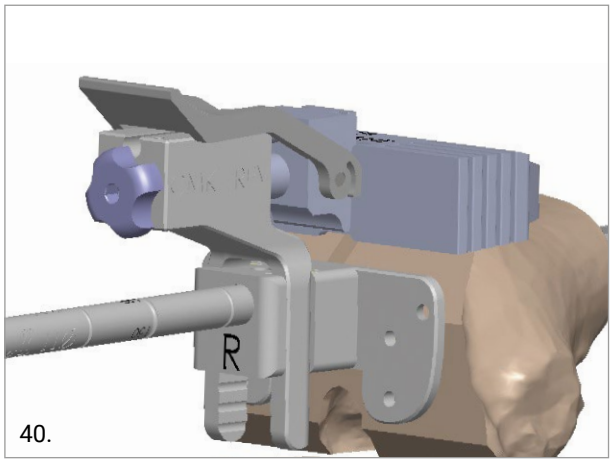
38.

Secure the connection by closing the lever on the micrometric distal cut positioner.



39.

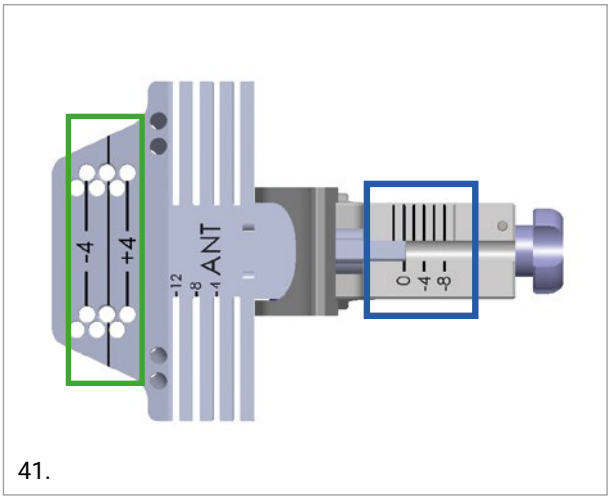
Adjust the distal cutting block position by means of the micrometric screw. Turning the screw clockwise, the distal cutting block moves more distal.



40.

The available positions allowed by the micrometric screw are from + 2 mm to – 10 mm (blue line).

The standard distal cut is planned at 0 mm when the micrometric screw is set on the 0 position. Additional holes allow for a +2, +4 mm or -2, -4, -6 mm correction (green line).



41.

Once the distal cutting guide position is deemed satisfactory, fix the block by means of two parallel pins in the marked row.

Unlock the lever and remove the micrometric distal cut positioner, the 6° distal cut positioner and finally the reamer with the T-handle.
Next, perform all the cuts as planned.

10. FEMORAL DISTAL AUGMENTS (OPTION)

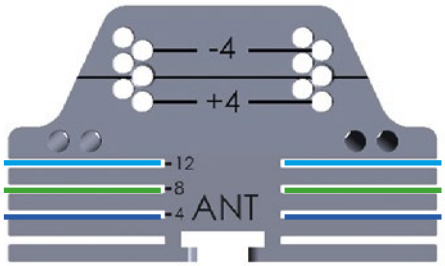
In case of bone loss, specific metal augments can be inserted on the distal condyles, either on the medial or lateral side, or both.

The following table summarizes the available distal femoral augments.

DISTAL FEMORAL AUGMENT

THICKNESS (mm)	SIZE
4	1 - 2 - 3 - 4 - 5 - 6
8	1 - 2 - 3 - 4 - 5 - 6
12	1 - 2 - 3 - 4 - 5 - 6

The corresponding cut can be performed through the dedicated slots on the distal cutting block.



42.

Distal cutting block

- 4 mm distal augment
- 8 mm distal augment
- 12 mm distal augment

These augments must be assembled on the 4in1 cutting block and on the trial femoral component later on to maintain the same joint line position.

11. FEMORAL SIZE DEFINITION

Using the femoral templates, verify the size of the femoral component defined during the preoperative planning.

OPTION

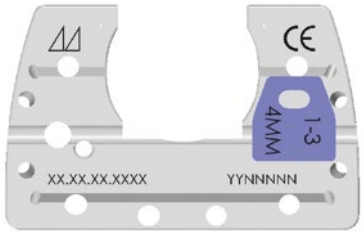
A further check of the femoral size can be performed by superimposing the trial femur on the resected femur.

12. 4IN1 FEMORAL GUIDE POSITIONING

Select the 4in1 femoral cutting block of the appropriate size.

OPTION

If any distal augment is needed, connect the provisional augment to the back of the 4in1 cutting block before positioning it on the bone.



43.

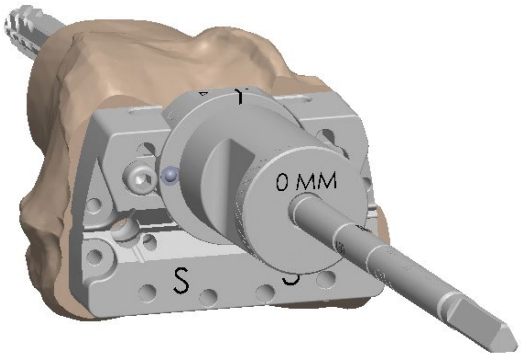
Screw the 6° oriented bushing to the 4in1 cutting block according to the operative side (left or right).

44.

The bushings with 8 mm internal diameter work off the reamer and are designed to be used as centralizers when adjusting the offset on the femur. These bushings are available for the femur in two different versions: neutral (i.e. 0 mm) and 3 mm offset.

NOTE: The 4in1 cutting block has the same mediolateral dimension as the corresponding size femoral component.

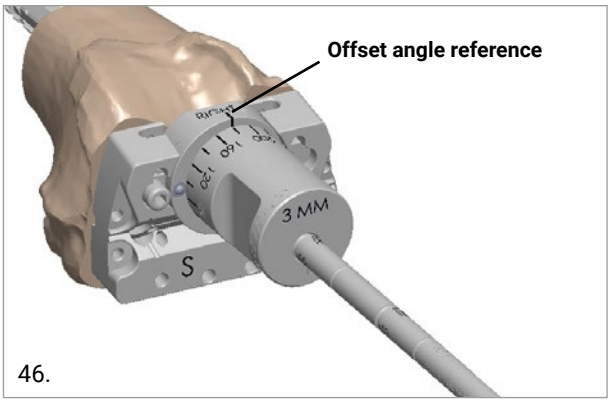
Slide the 0 mm neutral bushing onto the reamer. If the anterior cut level is properly aligned and the 4in1 cutting block properly covers the distal resection, no offset is needed.



45.

If a femoral offset is needed, replace the 0 mm neutral bushing with the 3 mm offset bushing and turn the 4in1 cutting block until the desired antero-posterior and medio-lateral position is obtained.

Read the angle referring to the reference line in the middle of the 4in1 cutting block. Each mark on the bushing corresponds to 20° angle. In the example the angle is set at 180°.



46.

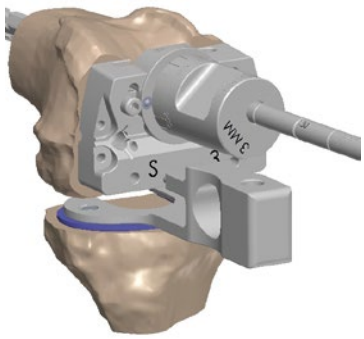
CAUTION

The 5 mm offset is not allowed for the femur.

NOTE: The femoral rotation can be checked with respect to the transepicondylar axis.

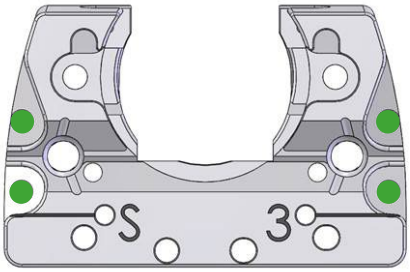
OPTION

When implanting GMK Revision or GMK Hinge in a primary case, the femoral rotation and the flexion gap can be checked through the rotational guide provided and the blue tibial spacers. In such a case, the proximal tibia cut must be performed first.
The 10 mm tibial gap is made by the rotational guide plus the 10 mm blue spacer clipped together.
To simulate thicker inserts, additional spacers from 12 to 26 mm are available.



47.

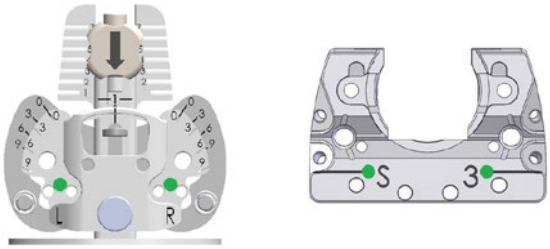
When the offset and the femoral rotation are correctly set, fix the 4in1 femoral guide with at least two lateral pins. Multiple options are available to fix the guide (green spots).



48.

OPTION

The revision 4in1 cutting blocks 02.07.10.8151-8156 have two additonal holes marked with a black line (green spots) that guarantee compatibility with GMK Sphere and GMK Primary posterior reference femoral sizer (ref. 02.07.10.9999).



49.

CAUTION

If distal augments are in place, some pin or screw holes may not be available. In such a case use alternative fixation holes.

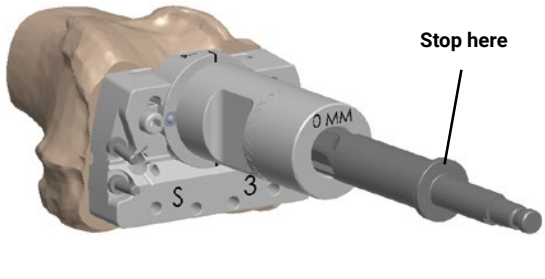
NOTE: The validated offset must be reproduced later on the trial femoral component.

13. FEMUR FINISHING

The bushings with 15.5 mm internal hole are meant to finish the preparation of the femur to create room for the offset coupler and for the stem connection, where needed.

OPTION

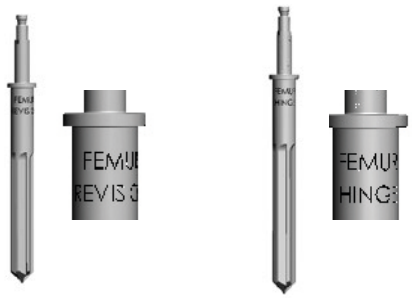
When a 3 mm offset coupler is necessary to correct placement of the femur, room must be created for the component using the 15.5 mm reamer. Insert the neutral bushing (i.e. 0 mm) into the 4in1 cutting block. Using two fingers, hold the bushing firmly and ream with the 15.5 mm reamer.



50.

CAUTION

GMK Revision and GMK Hinge have different 15.5 mm femoral reamers. The longer one must be used for GMK Hinge. Pay attention to the name written on the reamer.

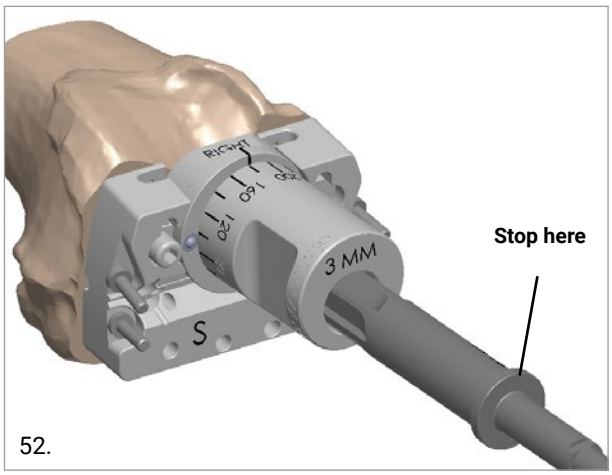


GMK REVISION GMK HINGE

51.

OPTION

If the intramedullary canal is prepared with a 15 mm or smaller reamer, room must be created for the component. Insert the 3 mm bushing into the 4in1 cutting block. Rotate the bushing until the correct angle is achieved. Using two fingers, hold the bushing firmly and ream with the 15.5 mm reamer.



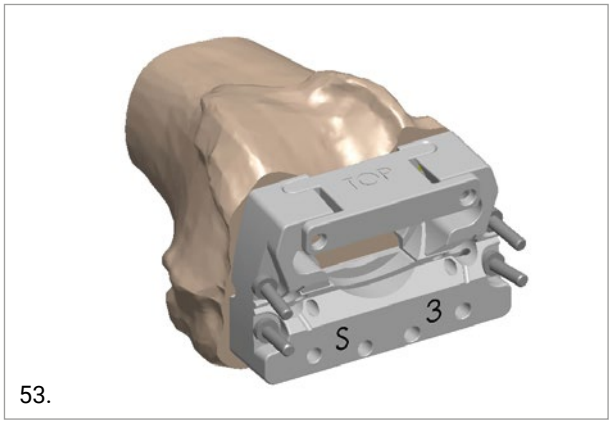
52.

CAUTION

The rotation of the offset bushing is important at this stage.

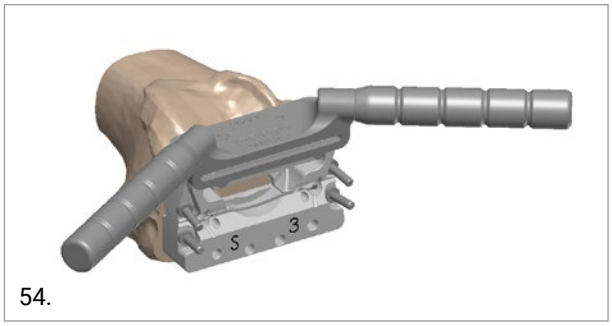
13.1 ANTERIOR, POSTERIOR AND CHAMFER CUTS

Assemble the upper coverage on the 4in1 cutting block to widen the anterior resection plane thus increasing saw blade stability.



53.

Assemble the saw blade guide on the 4in1 cutting block to perform the anterior and posterior cuts.



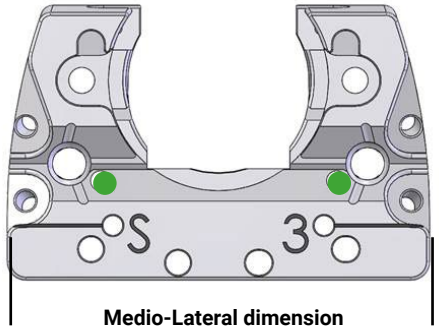
54.

Next, perform the posterior and anterior chamfers through the dedicated slots integrated in the 4in1 cutting block.

Before removing the 4in1 cutting block mark the references to position the box cutter guide later on.

Two options are available to mark the references:

- Use the pin holes provided (green spots)
- Mark the medio-lateral position of the cutting block (black lines)



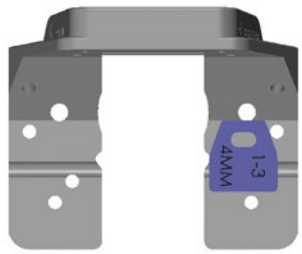
55.

Finally, remove the fixation pins and the 4in1 cutting block.

13.2 FEMORAL BOX PREPARATION

OPTION

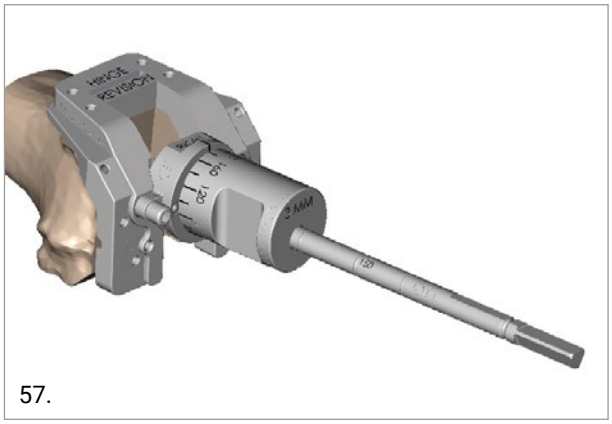
If any distal augment is needed, connect the provisional augment to the back of the box cutter guide before positioning it on the bone.



56.

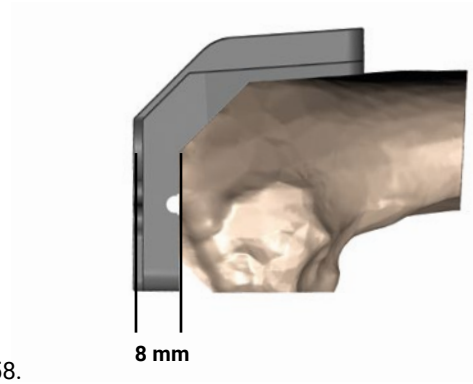
OPTION

When the anterior cortex is largely missing, the box cutter guide can work directly off the reamer to find the correct femoral position.
Screw the 6° oriented bushing onto the box cutter guide and insert the appropriate offset bushing. Then slide the assembly onto the IM reamer and turn it to find the proper femoral position.



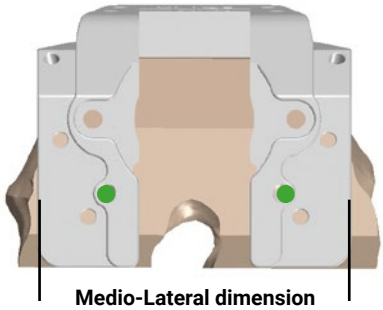
57.

The thickness of the distal part of the femoral cutting block is the same as the thickness of the final implant (8 mm).



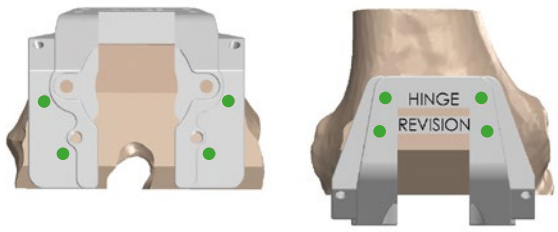
58.

Position the box cutter guide according to the reference previously marked on the 4in1 guide, either switching pin holes (green spots) or medio-lateral marks (black lines).



59.

Fix the box cutter guide with at least two pins. Multiple pin hole options are available (green spots).

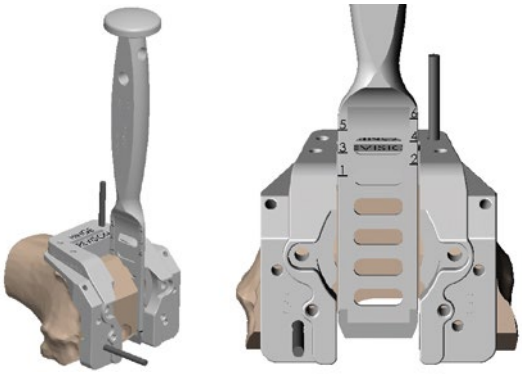


60.

CAUTION

If distal augments are in place, some of the distal pin holes may not be available to fix the box cutter guide. In such a case, use alternative fixation holes.

Perform the femoral box cut using the osteotome provided or a reciprocating saw. The cutting depth is marked on the osteotome according to the femoral size.



61.

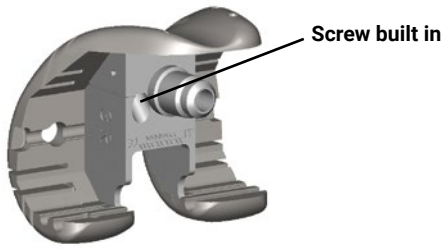
CAUTION

To finish the femoral box resection use the most distal slot for GMK Revision and the most proximal slot for GMK Hinge (Figure 60).

Once the box cut is performed, remove the pins and the box cutter guide.

14. TRIAL FEMORAL COMPONENT

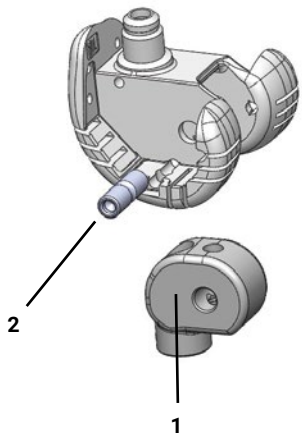
Screw the revision trial box (left or right) onto the trial femoral component.



62.

OPTION
When implanting the posterior-stabilized femoral component, also apply the postero-stabilization shaft onto the trial component.

NOTE: For GMK Hinge, the femoral box is already built in the trial femur. Moreover the trial hinge must now be assembled with the trial femur. If not yet assembled, follow the steps displayed in the image below.



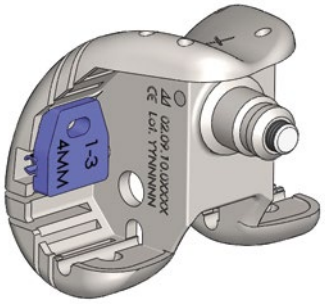
63.

14.1 FEMUR WITHOUT OFFSET

Screw the trial extension stem of the correct size on the trial box.

64.

OPTION
If a distal augment is needed, connect the validated provisional distal augment with the correct side of the trial femoral component, medial or lateral.



65.

Position the assembly on the femur using the sliding hammer and the femoral impactor.

66.

CAUTION
In case of impingement between the trial box and the internal rim of the medial condyle during trial femoral implant insertion, enlarge the medial side of the femoral box by using an osteotome.

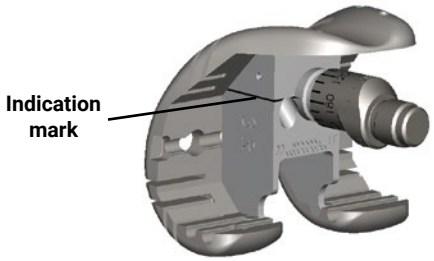
14.2 FEMUR WITH OFFSET

Before impacting the trial femoral component, the offset previously validated must be reproduced.

CAUTION
The 5 mm offset is not allowed for the femur.

Clip the validated trial offset on the femoral box, then reproduce the validated angle by aligning the angle markings on the offset coupler with the marked line on the femoral box.

The indication mark on the femoral box is located on the lateral side on a left femur and on the medial side on a right femur.
In the example, the angle is set at 180°.



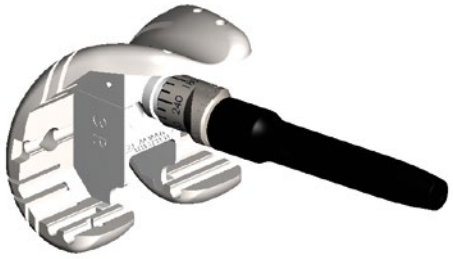
67.

Next, fix the offset angle by means of the screw integrated in the trial box.

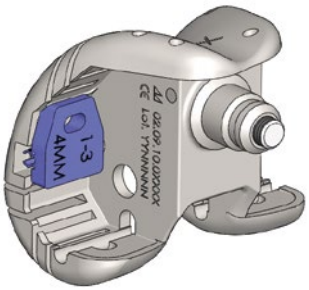

68.

CAUTION
Ensure that the offset angle is not altered while screwing.

Finally, screw the validated extension stem on the trial offset.


69.

OPTION
If a distal augment is necessary, it must be assembled on the trial femoral component before being impacted on the bone.



70.

Finally, position the assembly onto the femur using the sliding hammer and the femoral impactor.


71.

CAUTION
In case of impingement between the trial box and the internal rim of the medial condyle during trial femoral component insertion, enlarge the medial side of the femoral box by using an osteotome.

15. FEMORAL POSTERIOR AUGMENTS (OPTION)

In case of bone loss, specific metal augments can be assembled on the posterior condyles, either on the medial or lateral side, or both. The following table summarizes the available posterior femoral augments.

POSTERIOR FEMORAL AUGMENTS

THICKNESS (mm)	SIZE
5	1 - 2 - 3 - 4 - 5 - 6
10	1 - 2 - 3 - 4 - 5 - 6

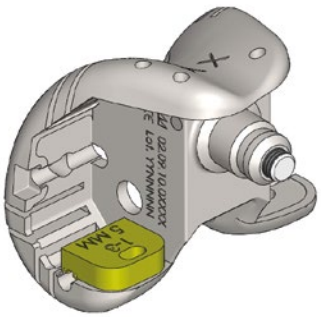
The cuts for the posterior augments can be carried out through the dedicated slots on the trial femoral component prior to placing the trial augments onto the femoral trial.

72.

5 mm posterior augment

10 mm posterior augment

If needed, remove the trial femoral component and connect the provisional posterior augment to it. Then, reposition the component on the femur.



73.

CAUTION

For the complete matching capabilities, refer to Selection of the prosthetic components - Size matching.

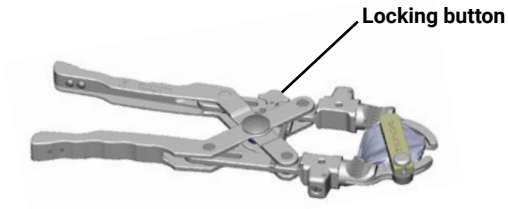
16. PATELLA

Should the preoperative planning or the intra-operative clinical evidence lead to patella replacement (inset or resurfacing), refer to the surgical technique described below.

16.1 RESURFACING PATELLA

Insert the patella resection guides into the patella clamp. After carefully releasing the periphery of the patella, position the resection guides at the appropriate resection level, with the assistance of the patellar stylus assembled in one slot of the resection guide. The stylus should be in contact with the top of the patella dome and allow for a 10 mm fixed cut.

Then, close the clamp handle until contact between the resection guides and the patella bone is made and lock the clamp with the button provided.



74.

CAUTION
Check that at least 13 mm of bone remains after resection. When revising a resurfacing patella, just refresh the existing cut, then proceed directly with the drilling phase.

Perform the patellar resection through the slots of the resection guides.

OPTION
The patella size can be measured with dedicated templates.

Open the patellar clamp, remove the two resection guides and position the spike jaw and drilling guide.


75.

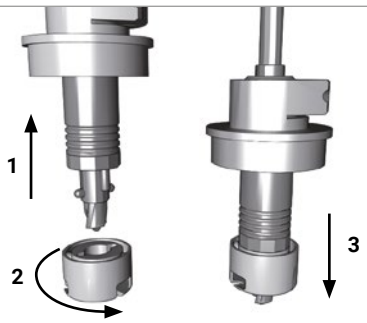
To correctly position the patellar component, its single peg must be positioned on the lateral facet of the patella and the other two pegs on the medial facet once the patella is in place, i.e., not luxated.

Apply the drilling guide on the resected surface of the patella and drill the three holes using the patellar pegs drill. Pressurize the trial resurfacing patella of the appropriate size, reduce the patella and test the knee through its full range of motion.

16.2 INSET PATELLA

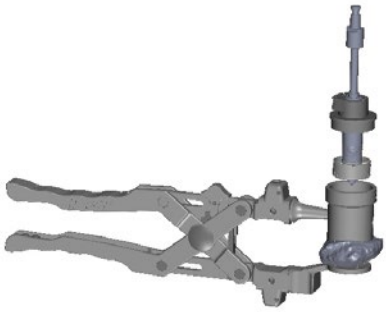
Choose the size of the patella using the different reamer guides or the dedicated template set.
Assemble the reamer guide of the chosen size and the spike jaw on the patellar clamp.

To assemble the reamer of the suitable size to the reamer holder, pull up the locking mechanism of the reamer holder, insert the reamer, turn it 90° and release the locking mechanism, making sure that the reamer is firmly fixed.



76.

Insert the reamer into the reamer guide and drill until the depth gauge touches the reamer guide.


77.

CAUTION
The hole should be shallow enough to leave a minimum wall thickness of 13 mm. When revising an inset patella, estimate the reamer size based on the former patella size, then create a new hole reaching approximately the same depth.

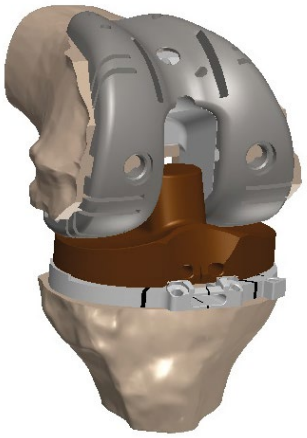
Pressurize the trial inset patella of the appropriate size, reduce the patella and test the knee through its full range of motion.

17. TRIAL IMPLANT EVALUATION

17.1 GMK REVISION

OPTION
When implanting the posterior-stabilized femur apply the posterior-stabilization shaft on the trial femur. If a Posterior Stabilized insert is used, assemble the PS trial peg on the trial tibial insert.

Position the proper trial insert (Semi-Constrained, Postero-Stabilized or Ultra Conguent) of the appropriate size and thickness into the trial baseplate.

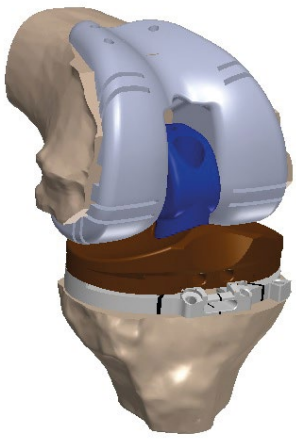


78.

Once the trial components are in place, reduce the patella and test the knee through its full range of motion.

17.2 GMK HINGE

Position the trial insert of the appropriate size and thickness into the trial baseplate.



79.

Next, flex the knee joint at 90°. Reduce the joint and rotate the trial hinge link into the trial insert. Insert the trial hinge post extension of the appropriate length into the trial hinge post and screw it to the tibial puncher, using the 3.5 mm screwdriver.

NOTE: The length of the trial hinge post extension must match the trial insert thickness.

80.

Once the trial components are in place, reduce the patella and test the knee through its full range of motion.

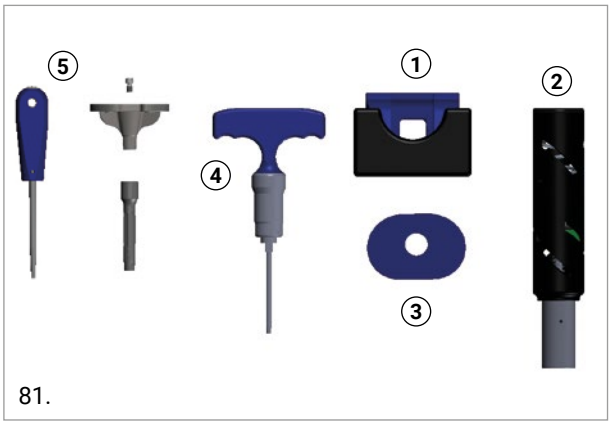
18. FINAL TIBIAL IMPLANT ASSEMBLY

CAUTION
Before assembling the final implant, verify that all the connection surfaces (threaded and tapered) are clean and dry. It is recommended to wear a new pair of surgical gloves to assemble the final implant. Be careful not to damage the articular surfaces while assembling the final implant.

18.1 TIBIA WITHOUT OFFSET

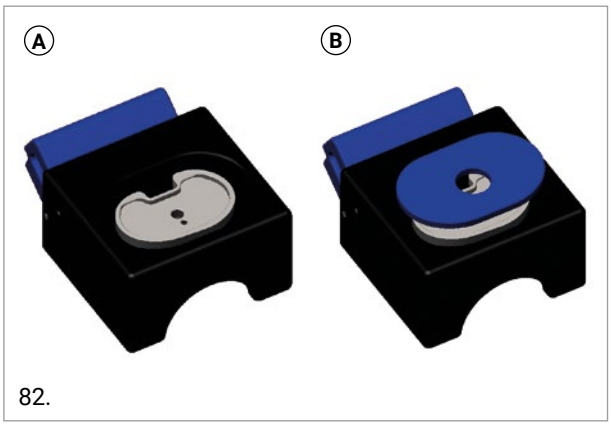
The assembling system includes:

- Base for implant assembling (1)
- Assembling hammer (2)
- Bushing for tibial impaction (3)
- 6 N·m torque wrench (4)
- Manual screwdriver (5)



81.

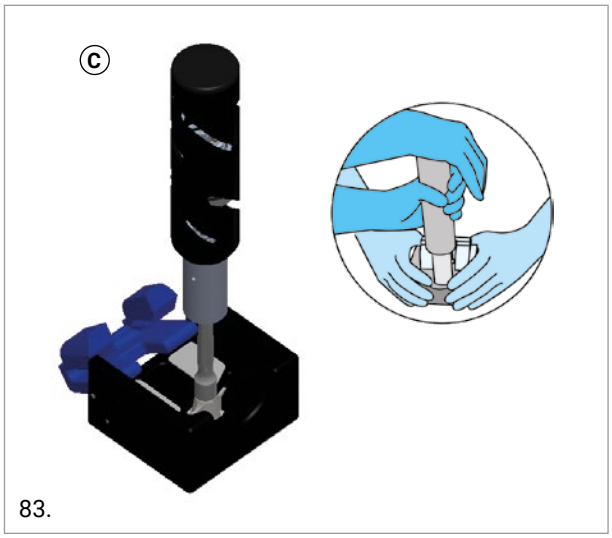
Position the final tibial tray into the dedicated slots on the base for implant assembling (A). Place the bushing for tibial impaction over the tibial tray (B), keep it in position and turn the assembly upside down.



82.

Position the validated extension stem onto the implant taper and impact the stem with the assembling hammer.

CAUTION
While impacting, make sure to be using the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).

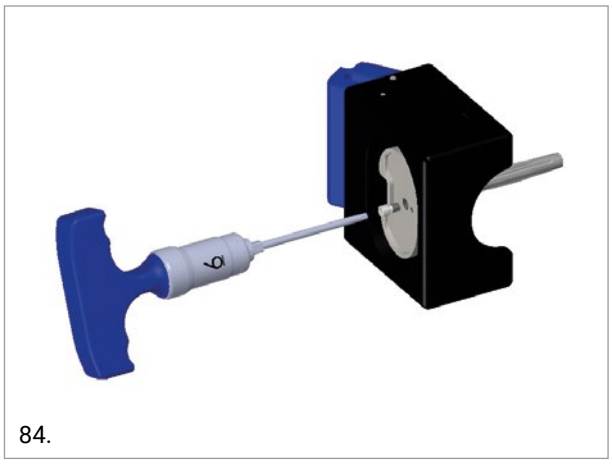


83.

NOTE: Be aware of the noise generated by the impaction stroke.

Rotate the base 90° with the tibial implant in place and tighten the fixing screw on the offset coupler with the 6 N·m torque wrench.

NOTE: The screw is packaged with the extension stem.


84.

CAUTION
When the correct torque is reached, the screwdriver clicks.

Remove the assembled implant from the base.

OPTION

If any tibial augment is needed, position the augment onto the tibial baseplate, then fix it with the provided screws using the manual screwdriver. The final fixation to the bone is obtained by means of the cement.

85.

OPTION

For cemented augments only: apply the bone cement under the tibial baseplate, position the augment onto the tibial component, press the augment to let the cement come out from the interface. Then apply the cement also under the augments. Cement should be poured on the metal components immediately after mixing: for this reason, a fresh preparation of cement should be used for the metal/bone interfaces. The final fixation between the augment and the tibial tray, as well as between the tibial augment and the bone, is obtained by means of the cement.

Finally, impact the prosthetic components on the tibia and carefully clear the extruded cement from the bone, ensuring that no cement remains on the articular surface.

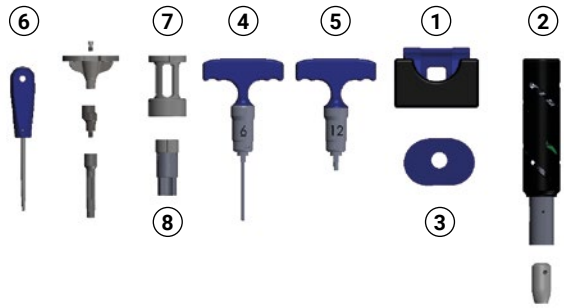
18.2 TIBIA WITH OFFSET (3 MM OR 5 MM OPTION)

CAUTION

If both a tibial offset and tibial augments are used, it is mandatory to assemble the final offset and the extension stem before the augments.

The assembling system includes:

- Base for implant assembling (1)
- Assembling hammer (2)
- Bushing for tibial impaction (3)
- 6 N·m torque wrench (4)
- 12 N·m torque wrench (5)
- Manual screwdriver (6)
- Tibial offset reference (7)
- Offset holder (8)

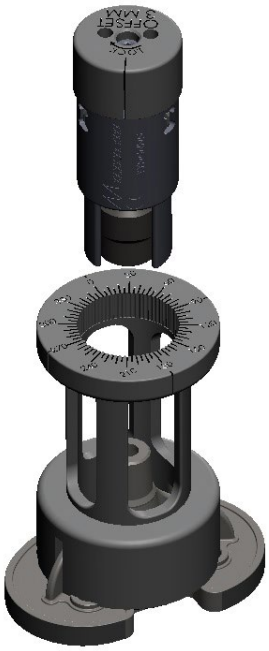


86.

Insert the offset coupler into the corresponding offset holder (3 mm or 5 mm).

87.

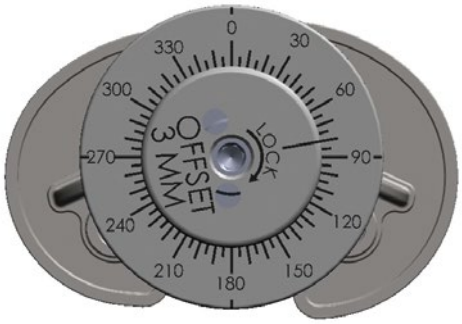
Position the tibial offset reference onto the final tibial component. The tibial fins allow for only one orientation. Then, insert the offset holder assembled with the offset into the tibial offset reference.



88.

CAUTION
Do not drop the offset holder onto the implant taper; this will prevent any premature offset engagement.

Turn the knob to reproduce the previously validated offset angle. The illustration below shows the offset angle set at 80°. Gently impact the top of the offset holder to fix the offset rotation.

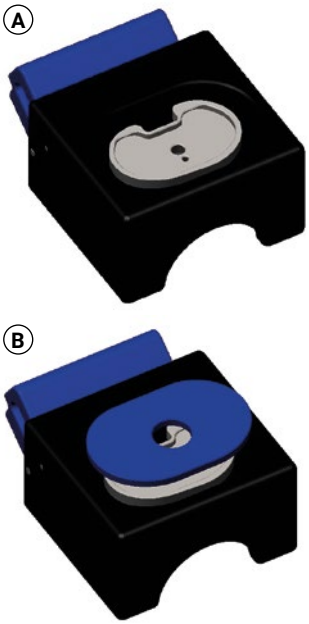


89.

Remove the offset system from the tibial component.

CAUTION
Be careful not to scratch the offset taper while removing the offset system.

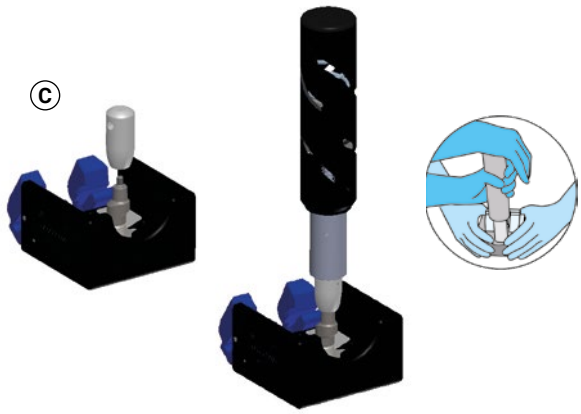
Position the final tibial tray into the dedicated slots on the base for implant assembling (A). Lean the bushing for tibial impaction over the tibial tray (B), keep it in position and rotate the assembly upside down.



90.

Screw the offset adapter for assembling hammer onto the offset coupler. Next, impact the offset coupler by using the assembling hammer (C).

CAUTION
While impacting, make sure to be using the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).

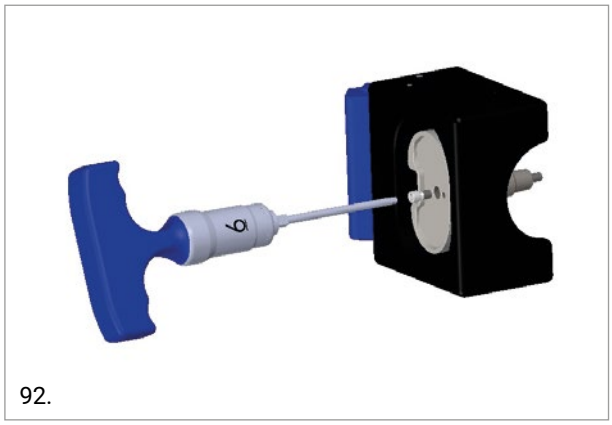


91.

NOTE: Be aware of the noise generated by the impaction stroke.

Unscrew the offset adapter for assembling hammer. Rotate the base 90° with the tibial implant in place and remove the bushing. Tighten the fixing screw on the offset coupler with the 6 N·m torque wrench.

NOTE: The screw is packaged with the extension stem.



92.

CAUTION

When the correct torque is reached, the screwdriver clicks.

Rotate again the base 90° with the tibial implant in place and insert the bushing between the implant surface and the table. Screw the extension stem on the offset coupler, then tighten with the 12 N·m torque wrench.

93.

CAUTION

When the correct torque is reached, the screwdriver clicks.

Remove the assembled implant from the base.

OPTION

If any tibial augment is needed, position the augment onto the tibial baseplate, then fix it with the provided screws and the manual screwdriver. The final fixation to the bone is obtained by means of the cement.

94.

OPTION

For cemented augments only: apply the bone cement under the tibial baseplate, position the augment onto the tibial component, press the augment to let the cement come out from the interface. Then apply the cement also under the augments. Cement should be poured on the metal components immediately after mixing: for this reason, a fresh preparation of cement should be used for the metal/bone interfaces. The final fixation between the augments and the tibial tray, as well as between the tibial augment and the bone, is obtained by means of the cement.

Finally, impact the prosthetic components onto the tibia and carefully clear the extruded cement from the bone, ensuring that no cement remains on the articular surface.

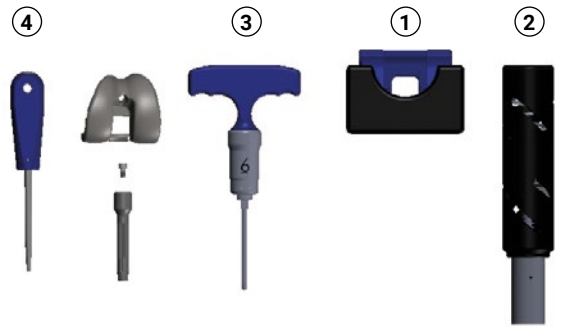
19. FINAL FEMORAL IMPLANT ASSEMBLY

19.1 FEMUR WITHOUT OFFSET

CAUTION
If femoral augments are to be used, it is mandatory to assemble the extension stem before the augments.

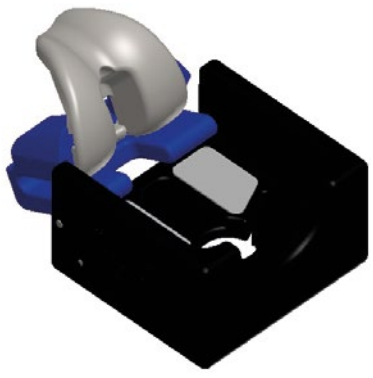
The assembling system includes :

- Base for implant assembling (1)
- Assembling hammer (2)
- 6 N·m torque wrench (3)
- Manual screwdriver (4)



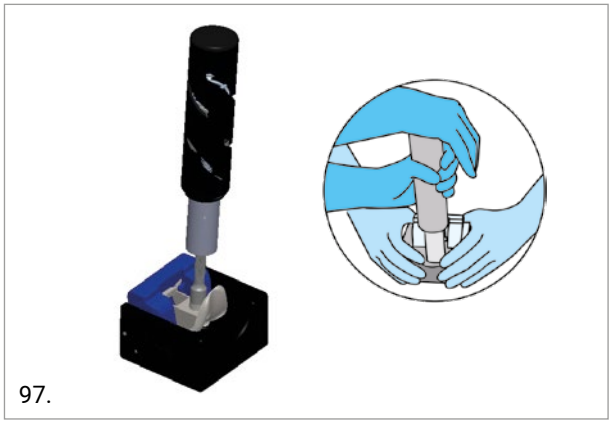
95.

Open the blue mobile part of the base and insert the posterior condyles of the final femoral component into the dedicated slots, then close the assembly towards the base.


96.

Position the validated extension stem on the implant taper and impact the stem by using the assembling hammer.

CAUTION
While impacting, make sure to be using the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).


97.

NOTE: Be aware of the noise generated by the impaction stroke.

Rotate the base 90° with the femoral implant in place and tighten the fixing screw on the stem with the 6 N·m torque wrench.


98.

NOTE: The screw is packaged with the extension stem.

CAUTION
When the correct torque is reached, the screwdriver clicks.

Remove the assembled implant from the base.

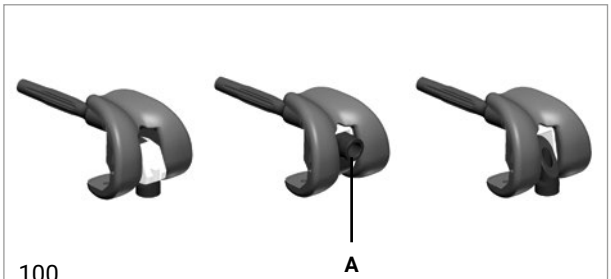
OPTION
If femoral augments are needed, posterior augments must be positioned first.
Position the posterior augment with its screw, packaged with the augment itself, onto the posterior condyle of the implant. Then engage the screw with the ball head hexagonal screwdriver provided. Finally, tighten the connection with the manual screwdriver.
Once all posterior augments are in place, proceed to position the distal augment with its screw, packaged with the augment itself, onto the distal condyle of the implant. Then engage the screw with the manual screwdriver.

99.

Finally, impact the prosthetic components on the femur and carefully clear the extruded cement from the bone, ensuring that no cement remains on the articular surface.

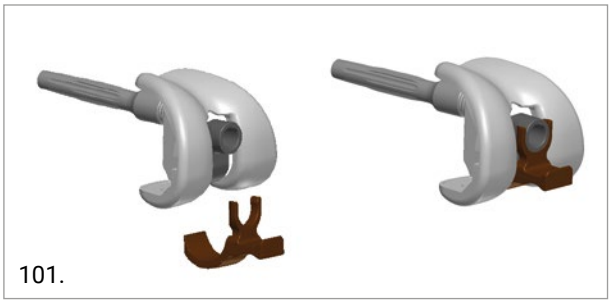
OPTION

For GMK HINGE only: When implanting GMK Hinge, the polyethylene bushing is initially loose to allow for fixation of the extension stem screw. Before impacting the femoral component on bone, engage the hinge polyethylene bushing into the intercondylar notch by rotating upwards the hinge post (A).



100.

Clip the provided protection onto the hinge mechanism to prevent cement intrusion into the hinge mechanism.



101.

Finally, position the assembly onto the femur using the sliding hammer and the femoral impactor.

Once the cement has cured and adequately hardened, the hinge protection can be removed.

19.2 FEMUR WITH OFFSET (3 MM OFFSET OPTION)

CAUTION

The 5 mm offset is not allowed for the femur.

CAUTION

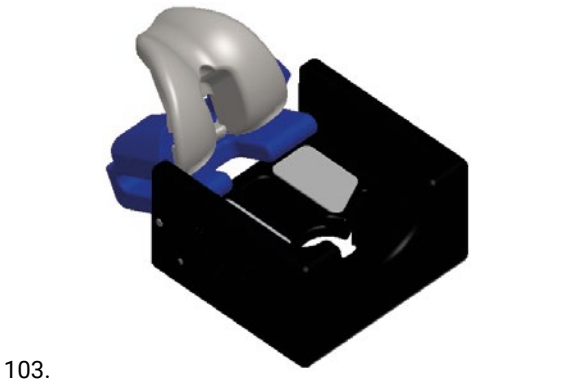
If both a femoral offset coupler and femoral augments are used, it is mandatory to assemble the final offset and the extension stem before the augments.

The assembling system includes:

- Base for implant assembling (1)
- Assembling hammer (2)
- 6 N·m torque wrench (3)
- 12 N·m torque limiter (4)
- Manual screwdriver (5)
- Femoral offset reference (left or right) (6, 7)
- Offset holder (8)

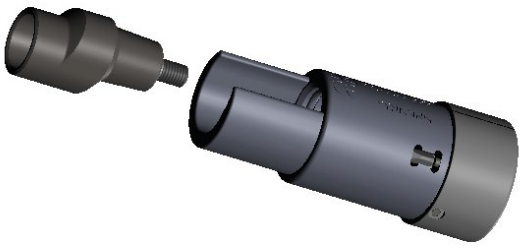
102.

Open the blue mobile part of the base and insert the posterior condyles of the final femoral component into the dedicated slots, then close the assembly towards the base.



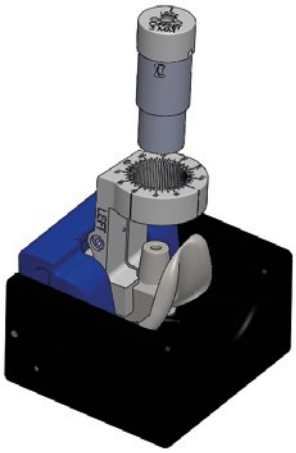
103.

Insert the offset coupler into the corresponding offset holder (3 mm).



104.

Position the femoral offset reference onto the final femoral component. Only one orientation is allowed by the femoral box. Then insert the offset adapter assembled with the offset into the femoral offset reference.



105.

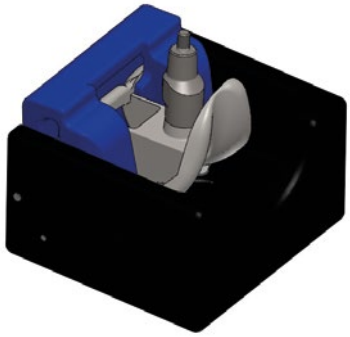
CAUTION

Do not drop the offset holder onto the implant taper; this will prevent any premature offset engagement.

Turn the knob to reproduce the previously validated offset angle. The illustration below shows the offset angle set at 180°. Gently impact the top of the offset holder to fix the offset rotation.

106.

Remove the offset system from the femoral component.



107.

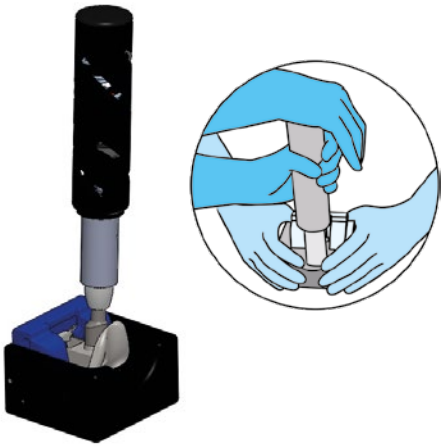
CAUTION

Be careful not to scratch the offset taper while removing the offset system.

Screw the offset adapter for assembling hammer onto the offset, then impact the offset coupler by using the assembling hammer.

CAUTION

While impacting, make sure to be using the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).



108.

NOTE: Be aware of the noise generated by the impaction stroke.

Unscrew the offset adapter for assembling hammer.

Rotate the base 90° with the femoral implant in place and tighten the fixing screw on the offset coupler with the 6 N·m torque wrench.

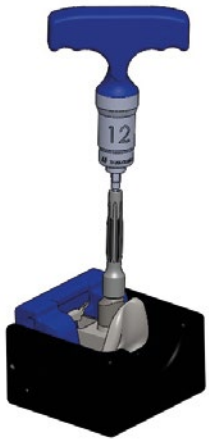
109.

NOTE: The screw is packaged with the extension stem.

CAUTION

When the correct torque is reached, the screwdriver clicks.

Rotate the base 90° with the implant in place. Screw the validated extension stem on the offset thread and tighten the extension stem onto the offset coupler with the 12 N·m torque wrench.



110.

CAUTION

When the correct torque is reached, the screwdriver clicks.

OPTION

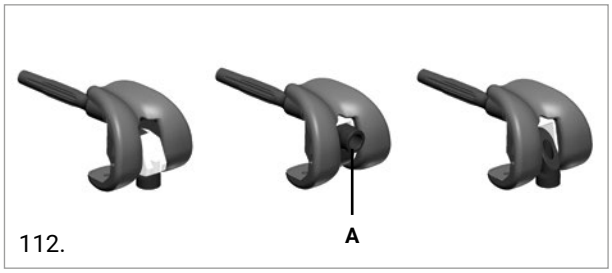
If femoral augments are needed, posterior augments must be positioned first.
Position the posterior augment with its screw, packaged with the augment itself, onto the posterior condyle of the implant. Then engage the screw with the ball head hexagonal screwdriver provided. Finally, tighten the connection with the manual screwdriver. Once all posterior augments are in place, proceed to position the distal augment with its screw, packaged with the augment itself, onto the distal condyle of the implant. Engage the screw with the manual screwdriver.

111.

Finally, impact the prosthetic components on the femur and carefully clear the extruded cement from the bone, ensuring that no cement remains on the articular surface.

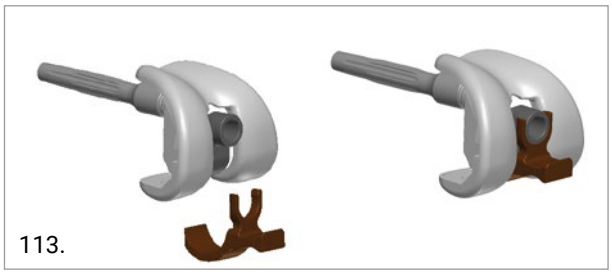
OPTION

For GMK HINGE only: When implanting GMK Hinge, the polyethylene bushing is initially loose to allow for fixation of the extension stem screw. Before impacting the femoral component on the bone, engage the hinge polyethylene bushing into the intercondylar notch by rotating upwards the hinge post (A).



112.

Clip the provided protection onto the hinge mechanism to prevent cement intrusion into the femoral/link interface.



113.

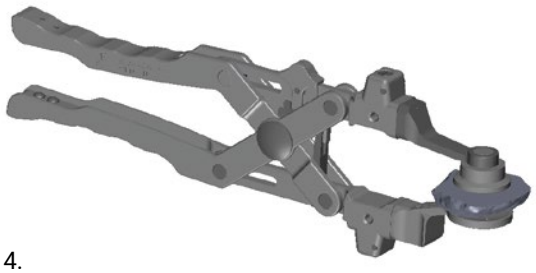
Finally, position the assembly onto the femur using the sliding hammer and the femoral impactor.

Once the cement has curred and adequately hardened, the hinge protection can be removed.

20. FINAL IMPLANTATION

CAUTION
When implanting the GMK Revision with Semi-Constrained inserts or GMK Hinge prostheses it is always mandatory to implant an extension stem both on the tibial and the femoral components.

If needed, cement the patella implant using the clamp and the provided squeezer.



114.

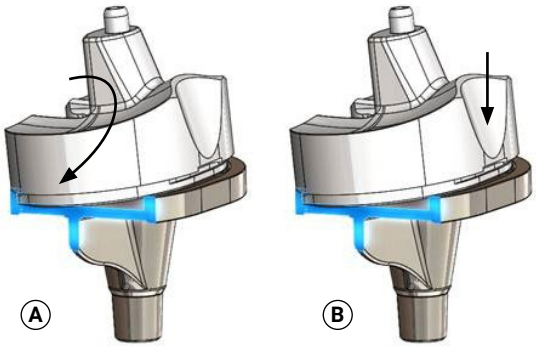
20.1 GMK REVISION

Once both femoral and tibial components have been cemented to the bone, lay the final polyethylene insert into the tibial baseplate.

To verify the final height of the insert, prior to implanting the definitive tibial insert, the trial insert can be positioned on the final baseplate.

Place the insert on the tibial baseplate according to the following steps:

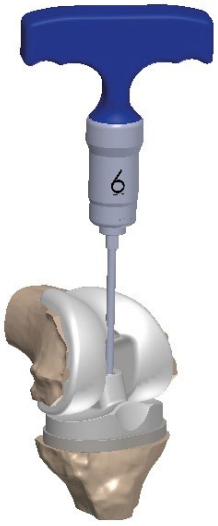
1. Make sure that the metallic upper surface of the tibial baseplate is perfectly clean and that no small debris can get interposed between tray and insert during assembly.
2. Engage the posterior lips of the insert in the posterior part of the tibial baseplate.(A)
3. Clip the anterior part of the insert, by exerting pressure on it manually.(B)



115.

WARNING
By default, the GMK Revision semi-constrained polyethylene tibial insert is supplied with a semi-constrained peg in cobalt-chromium alloy. The GMK Revision semi-constrained peg with SensiTiN coating is supplied separately (ref. 02.07.SCPXX). For cases which require SensiTiN-coated implants, ensure that the GMK Revision semi-constrained peg with SensiTiN coating is available as well. Make sure to discard the GMK Revision semi-constrained peg contained within the polyethylene tibial insert and use the GMK Revision semi-constrained peg with SensiTiN coating supplied in a separated package.

WARNING
For the Semi-Constrained inserts, tighten the corresponding screw with the 6 N·m torque wrench.



116.

WARNING
When implanting a posterior-stabilized insert **do not use** the 6 N·m torque wrench to fix the insert screw. Using the 6 N·m torque wrench may lead to screw breakage. The torque limiter screwdriver 3.5 N·m must be used to guarantee that the optimal locking of the screw is achieved.

With the final prosthetic components in place, reduce the patella and test the knee through its full range of motion.

20.2 GMK HINGE

Once both femoral and tibial components have been cemented to the bone, lay the final polyethylene insert into the tibial baseplate. Then bend the knee at about 90° and fix the anterior insert screw.

WARNING
By default, the GMK Hinge polyethylene tibial insert is supplied with a post extension in cobalt-chromium alloy. The post extension with SensiTiN coating is supplied separately (ref.02.09.HEXX). For cases which require SensiTiN-coated implants, ensure that the GMK Hinge post extension with SensiTiN coating is available as well. Make sure to discard the GMK Hinge post extension contained within the polyethylene tibial insert and use the GMK Hinge post extension with SensiTiN coating which is supplied in a separated package. Do not discard the screws.

NOTE: The screw is packaged with the insert and one size fits all the inserts.

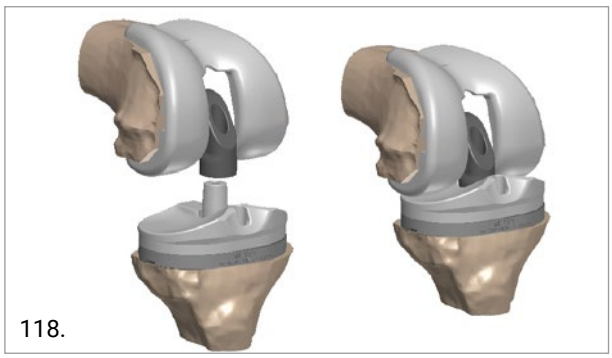
WARNING
Use the 3 N·m torque wrench to fix the anterior insert screw.


117.

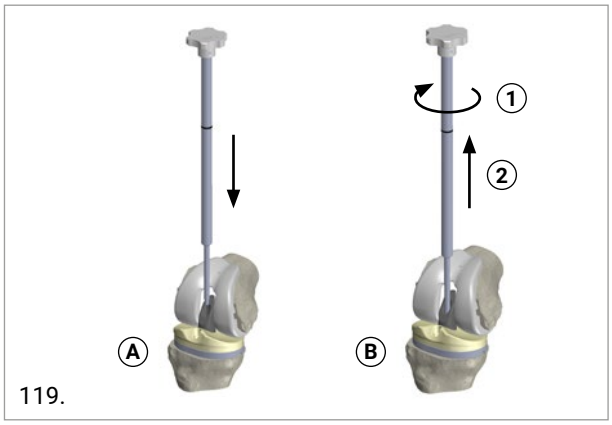
Insert the hinge post extension (a.k.a. yoke) into the tibial tray. The tapered extremity must be facing upwards.

Then reduce the hinge-post mechanism: no huge distraction of the joint is required.

NOTE: The hinge post extension (i.e. yoke) is packaged with the insert, and it is inlay thickness-specific.


118.

OPTION
The screwdriver 02.09.10.0003 can be used to engage the morse taper connection of the hinge mechanism.
Insert the screwdriver tip through the hinge-post mechanism (A) and turn the upper knob until the screwdriver firmly engages the hinge post extension (1B). Gently hammer on the knob upward in order to engage the morse taper connection between the hinge post and the hinge post extension (2B).
Turn the knob and remove the screwdriver.



119.

WARNING
Engage the connection between the hinge post and hinge post extension (a.k.a. yoke) by tightening the provided screw with the 6 N·m torque wrench.

NOTE: The screw is packaged with the insert and one size fits all the inserts.

120.

With the final prosthetic components in place, reduce the patella and test the knee through its full range of motion.

21. SELECTION OF THE PROSTHETIC COMPONENTS - SIZE MATCHING

21.1 GMK REVISION

✓ = allowed combination
× = forbidden combination

Both the GMK Revision femoral and tibial components are intended for cemented use only.

CAUTION
GMK Revision femoral component (STD and PS) and tibial component must always be implanted with an extension stem.

Fixed tibial baseplates can only be matched with fixed tibial inserts (UC, PC, SC) according to Table 1.

GMK PRIMARY AND REVISION FIXED TIBIAL TRAY***	FIXED TIBIAL INSERT (UC, PS, SC)						
	SIZE	1	2	3	4	5	6
	1/1+	✓	×	×	×	×	×
	2/2+	×	✓	×	×	×	×
	3/3+	×	×	✓	×	×	×
	T3i4/ T3+i4*	×	×	×	✓	×	×
	4/4+	×	×	×	✓	×	×
	T4i3/ T4+i3**	×	×	✓	×	×	×
	5/5+	×	×	×	×	✓	×
	6/6+	×	×	×	×	×	✓

* Tibia size T3i4/T3+i4 = Tibia size 3 for insert size 4
** Tibia size T4i3/Tt4+i3 = Tibia size 4 for insert size 3
*** GMK fixed tibial baseplates size X+ are not available for GMK Revision

Table 1: Matching capabilities of GMK tibial baseplates with tibial inserts

Fixed UC tibial inserts can only be matched with STD revision femoral components. Fixed UC tibial inserts size X can be matched with STD revision femoral components size X+1, size X and X-n (Table 2).

GMK REVISION STD FEMORAL COMPONENT	UC FIXED TIBIAL INSERT						
	SIZE	1	2	3	4	5	6
	1	✓	✓	✓	✓	✓	✓
	2	✓	✓	✓	✓	✓	✓
	3	×	✓	✓	✓	✓	✓
	4	×	×	✓	✓	✓	✓
	5	×	×	×	✓	✓	✓
	6	×	×	×	×	✓	✓

Table 2: GMK Revision STD femur and UC inserts size matching

Fixed tibial inserts PS can be matched only with PS revision femoral components. PS fixed tibial insert size X can be matched with PS revision femoral components from size X+1, size X and X-n (Table 3).

GMK REVISION PS FEMORAL COMPONENT	PS FIXED TIBIAL INSERT						
	SIZE	1	2	3	4	5	6
	1	✓	✓	✓	✓	✓	✓
	2	✓	✓	✓	✓	✓	✓
	3	×	✓	✓	✓	✓	✓
	4	×	×	✓	✓	✓	✓
	5	×	×	×	✓	✓	✓
	6	×	×	×	×	✓	✓

Table 3: GMK Revision PS femur and PS inserts size matching

Semi-Constrained fixed tibial inserts can be matched only with PS revision femoral components. Semi-Constrained fixed tibial insert size X can be matched with PS revision femoral components size X+1, size X, X-1 and X-2 (Table 4).

GMK REVISION PS FEMORAL COMPONENT	SC FIXED TIBIAL INSERT = FIXED TIBIAL TRAY						
	SIZE	1	2	3	4	5	6
	1	✓	✓	✓	×	×	×
	2	✓	✓	✓	✓	×	×
	3	×	✓	✓	✓	✓	×
	4	×	×	✓	✓	✓	✓
	5	×	×	×	✓	✓	✓
	6	×	×	×	×	✓	✓

Table 4: GMK Revision PS femur and SC inserts size matching

CAUTION
When implanting a Semi-Constrained insert, it is mandatory to use a revision extension stem both on tibial and femoral components.

NOTE: Mobile tibial inserts (STD and UC) can be matched only with STD revision femoral components from the same size and with mobile tibial baseplates. Cemented mobile tibial trays size X can be matched with mobile tibial inserts (STD and UC) from the same size, size X+1, size X-1 and X-2 (Table 5).

MOBILE CEMENTED TIBIAL TRAY	STD AND UC MOBILE TIBIAL INSERT = REVISION STD FEMORAL COMPONENT						
	SIZE	1	2	3	4	5	6
	1	✓	✓	×	×	×	×
	2	✓	✓	✓	×	×	×
	3	✓	✓	✓	✓	×	×
	4	×	✓	✓	✓	✓	×
	5	×	×	✓	✓	✓	✓
	6	×	×	×	✓	✓	✓

Table 5: Matching capabilities of the GMK mobile tibial inserts with the GMK mobile cemented tibial trays

21.2 GMK HINGE

✓ = allowed combination
× = forbidden combination

Both the GMK Hinge femoral and tibial components are intended for cemented use only.

CAUTION
Both the GMK Hinge femoral and tibial components must always be implanted with an extension stem.

Hinge tibial inserts can be matched only with Hinge tibial trays from the same size and Hinge femoral components size X+1, size X and X-1 (Table 6).

		GMK HINGE TIBIAL INSERT = GMK HINGE TIBIAL TRAY					
GMK HINGE FEMORAL COMPONENT	SIZE	1	2	3	4	5	6
	1	✓	✓	×	×	×	×
	2	✓	✓	✓	×	×	×
	3	×	✓	✓	✓	×	×
	4	×	×	✓	✓	✓	×
	5	×	×	×	✓	✓	✓
	6	×	×	×	×	✓	✓

Table 6: GMK Hinge femoral and tibial components size matching

21.3 COMMON PARTS (GMK REVISION AND GMK HINGE)

✓ = allowed combination
× = forbidden combination

CAUTION
It is forbidden to implant a 5 mm offset coupler on GMK Revision or GMK Hinge femoral components. An offset coupler can never be implanted without an extension stem (Table 7).

		GMK REVISION		GMK HINGE	
OFFSET COUPLER	OFFSET	TIBIA	FEMUR	TIBIA	FEMUR
	3 mm	✓	✓	✓	✓
	5 mm	✓	×	✓	×

Table 7: GMK Revision and GMK Hinge components and offset coupler size matching

Distal and posterior femoral augments are intended to be mechanically attached by means of a screw to the GMK Revision and GMK Hinge femoral component from the same size.
Distal femoral augments are supposed to be used on the distal condyles only, posterior femoral augments are supposed to be used on the posterior condyles only. The same femoral augment can be used either on medial or lateral side. Cementing two augments together is not allowed. The final fixation to the bone is obtained by means of bone cement (Table 8).

		DISTAL AUGMENTS		
POSTERIOR AUGMENTS	THICKNESS	4 mm	8 mm	12 mm
	5 mm	✓	✓	✓
	10 mm	✓	✓	×

Table 8: GMK Revision and GMK Hinge distal and posterior femoral augments size matching

CAUTION
12 mm distal augments (part nos. 02.07.*12FDW) are NOT compatible with 5 mm posterior augments.

CAUTION
Only use the augments made of titanium alloy (Ti6Al4V) with SensiTiN-coated femoral components.

Screw-fixed tibial augment can be used only with GMK Revision tibial tray and GMK Hinge tibial tray. Tibial augments must be fixed to the tibial baseplate with both the screws provided.

A tibial tray size X accepts screw-fixed augments size X and X-1. 5 and 10 mm tibial augments can be used either on the medial or lateral side.
Cementing two augments together is not permitted. The final fixation to the bone is obtained by means of bone cement.

		SCREW FIXED TIBIAL AUGMENT 5 mm - 10 mm						
GMK REVISION AND GMK HINGE TIBIAL TRAY	SIZE	0	1	2	3	4	5	6
	1	✓	✓	✗	✗	✗	✗	✗
	2	✗	✓	✓	✗	✗	✗	✗
	3	✗	✗	✓	✓	✗	✗	✗
	T3i4*	✗	✗	✓	✓	✗	✗	✗
	4	✗	✗	✗	✓	✓	✗	✗
	T4i3*	✗	✗	✗	✓	✓	✗	✗
	5	✗	✗	✗	✗	✓	✓	✗
	6	✗	✗	✗	✗	✗	✓	✓

* Only for GMK Revision

Table 9: GMK Revision and GMK Hinge tibial component and screw fixed tibial augment size matching

CAUTION
Tibial augments (either on medial, lateral or both sides) must always be implanted with a tibial extension stem.

CAUTION
Only use augments made of titanium alloy (Ti6Al4V) with SensiTiN-coated tibial trays.

No limitations exist for combining an extension stem with GMK Revision or GMK Hinge tibial and femoral components.

CAUTION
30 mm and 65 mm primary tibial extension stems (ref. nos: 02.07.F11030/02.07.F11066) CANNOT be implanted with tibial augments, offset couplers, GMK Revision femoral components, GMK Primary/Revision tibial tray with Semi-Constrained inserts and GMK Hinge femoral/tibial components.

No limitations exist for combining a patella and a GMK Revision or GMK Hinge femoral component: for both versions (resurfacing and inset) every patellar component size matches every femoral component size.

21.4 REVISION OPTIONS WITH GMK PRIMARY AND SPHERE

CAUTION
For trialing and final implant assembling of GMK Sphere and GMK Primary femoral component and tibial insert, please refer to the corresponding surgical technique (GMK Sphere: 99.26SPHERE.12-92; GMK Primary: 99.26PRIMARY.12-82).

✓ = allowed combination
✗ = forbidden combination

The GMK Primary and GMK Revision fixed tibial trays can be matched with the GMK Sphere FLEX and CR tibial inserts (fixed), according to Table 10.

		GMK SPHERE FIXED TIBIAL INSERT (FLEX, CR)					
GMK PRIMARY AND REVISION FIXED TIBIAL TRAY***	SIZE	1	2	3	4	5	6
	1/1+	✓	✗	✗	✗	✗	✗
	2/2+	✗	✓	✗	✗	✗	✗
	3/3+	✗	✗	✓	✗	✗	✗
	T3i4/ T3+i4*	✗	✗	✗	✓	✗	✗
	4/4+	✗	✗	✗	✓	✗	✗
	T4i3/ T4+i3**	✗	✗	✓	✗	✗	✗
	5/5+	✗	✗	✗	✗	✓	✗
	6/6+	✗	✗	✗	✗	✗	✓

* Tibia size T3i4/T3+i4 = Tibia size 3 for insert size 4
** Tibia size T4i3/Tt4+i3 = Tibia size 4 for insert size 3
*** GMK fixed tibial baseplates size X+ are not available for GMK Revision

Table 10: Matching capabilities for GMK Primary and Revision tibial trays and GMK Sphere tibial inserts

The size matching capabilities of GMK Sphere femoral components with GMK Sphere tibial inserts are indicated in Table 11.

		GMK SPHERE FIXED TIBIAL INSERT (FLEX, CR)					
GMK SPHERE FEMORAL COMPONENT	SIZE	1	2	3	4	5	6
	1/1+	✓	✓	✓	✗	✗	✗
	2/2+	✓	✓	✓	✗	✗	✗
	3/3+	✓	✓	✓	✗	✗	✗
	4/4+	✗	✗	✗	✓	✓	✓
	5/5+	✗	✗	✗	✓	✓	✓
	6/6+	✗	✗	✗	✓	✓	✓
	7	✗	✗	✗	✓	✓	✓

Table 11: Matching capabilities for GMK Sphere femoral components and tibial inserts

The GMK Primary and GMK Revision tibial trays can be matched with the GMK Primary tibial inserts (for the size matching capabilities, please refer to Table 1.) The size matching capabilities of GMK Primary femoral components with GMK Primary tibial inserts are indicated in Table 12.

		PRIMARY PS/UC INSERT					
GMK PRIMARY FEMORAL COMPONENT STD/PS	SIZE	1	2	3	4	5	6
	0	✓	✓	✓	✓	✓	✓
	1/1N	✓	✓	✓	✓	✓	✓
	2/2N	✓	✓	✓	✓	✓	✓
	3/3N	✗	✓	✓	✓	✓	✓
	4/4N	✗	✗	✓	✓	✓	✓
	5/5N	✗	✗	✗	✓	✓	✓
	6/6N	✗	✗	✗	✗	✓	✓
	7/7N	✗	✗	✗	✗	✗	✓

Table 12: Matching capabilities for GMK Primary tibial inserts and GMK Primary femoral components

Mobile tibial insert (STD and UC) must be matched with femoral component of the same size. GMK Mobile tibial trays can be matched with GMK Mobile tibial inserts according to Table 13.

		MOBILE TIBIAL INSERTS (STD/UC) = PRIMARY FEMORAL COMPONENT						
MOBILE TIBIAL TRAYS	SIZE	1	2	3	4	5	6	7
	1	✓	✓	✗	✗	✗	✗	✗
	2	✓	✓	✓	✗	✗	✗	✗
	3	✓	✓	✓	✓	✗	✗	✗
	4	✗	✓	✓	✓	✓	✗	✗
	5	✗	✗	✓	✓	✓	✓	✗
	6	✗	✗	✗	✓	✓	✓	✓

Table 13: Matching capabilities for GMK Mobile tibial trays and GMK Mobile tibial inserts

Cemented tibial augments can be used only with GMK Fixed tibial tray. A tibial tray size X accepts a tibial augment size X and X-1.

Cemented tibial augments can be used only with the GMK Primary tibial trays. Cemented tibial augments must be attached to the tibial baseplate with the fixing cylinders and bone cement. Cementing two tibial augments together is not permitted. A tibial tray size X accepts a tibial augment size X and X-1 (Table 14).

		CEMENTED TIBIAL AUGMENTS						
GMK PRIMARY TIBIAL TRAY	SIZE	0	1	2	3	4	5	6
	1/1+	✓	✓	✗	✗	✗	✗	✗
	2/2+	✗	✓	✓	✗	✗	✗	✗
	3/3+	✗	✗	✓	✓	✗	✗	✗
	T3i4/ T3+i4	✗	✗	✓	✓	✗	✗	✗
	4/4+	✗	✗	✗	✓	✓	✗	✗
	T4i3/ T4+i3	✗	✗	✗	✓	✓	✗	✗
	5/5+	✗	✗	✗	✗	✓	✓	✗
	6/6+	✗	✗	✗	✗	✗	✓	✓

Table 14: Cemented tibial augments and GMK Primary tibia size matching.

Screw-fixed tibial augments can be used only with GMK Revision and GMK Hinge tibial tray. A revision tibial tray size X accepts a tibial augment size X and X-1.

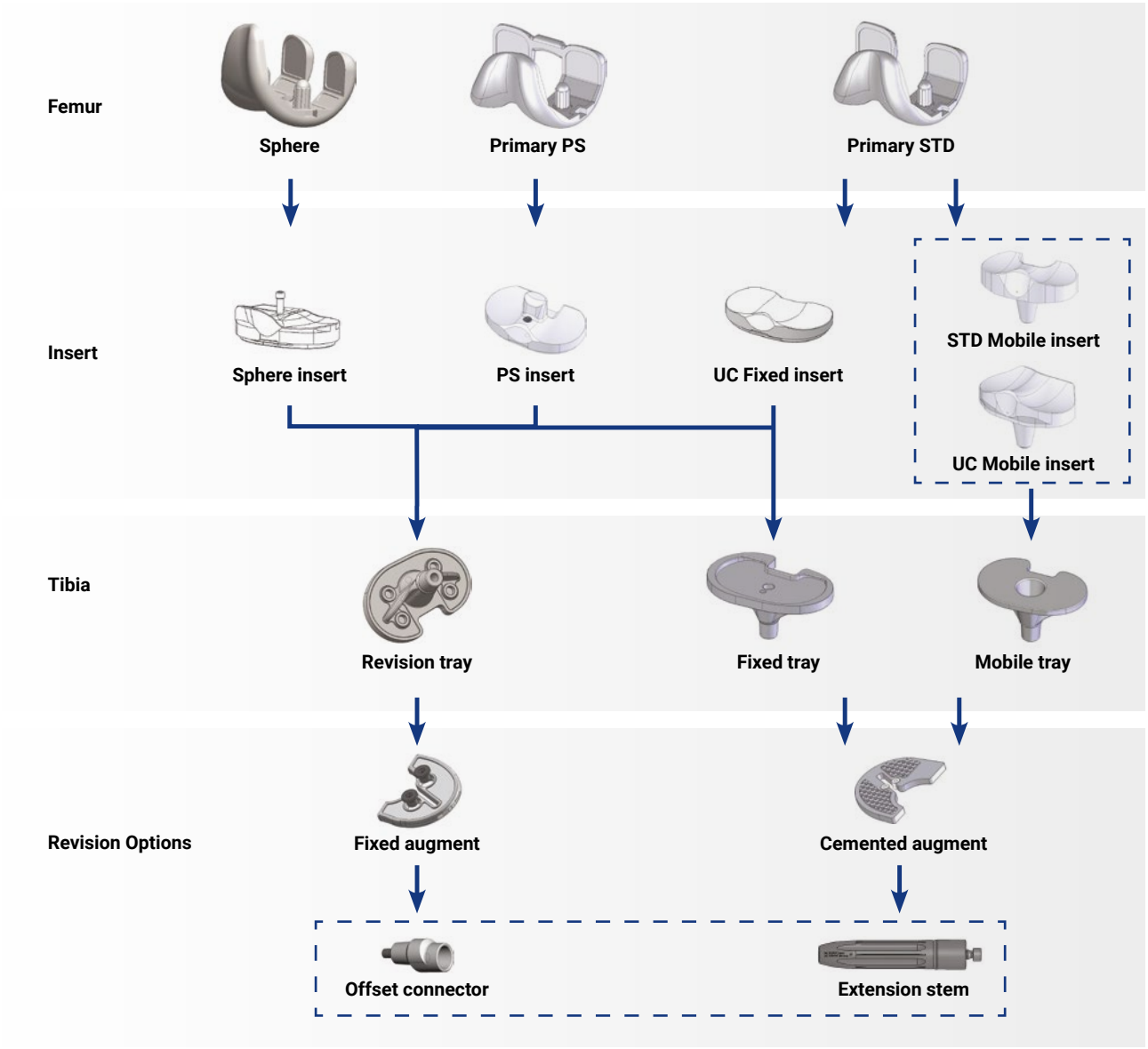
CAUTION

Tibial augments (either on medial, lateral or both sides) must always be implanted with a tibial extension stem.

No limitations exist for combining extension stems and offset with GMK Fixed/Mobile and Revision tibial trays. Every patellar component size matches every femoral component size.

CAUTION

30 mm and 65 mm primary tibial extension stems (ref. nos: 02.07.F11030/02.07.F11065) CANNOT be implanted with tibial augments, offset couplers, GMK Revision femoral components, GMK Primary/Revision tibial tray with Semi-Constrained inserts and GMK Hinge femoral/tibial components.


Femur
Sphere
Primary PS
Primary STD
Insert
Sphere insert
PS insert
UC Fixed insert
STD Mobile insert
UC Mobile insert
Tibia
Revision tray
Fixed tray
Mobile tray
Revision Options
Fixed augment
Cemented augment
Offset connector
Extension stem

22. ANNEX 1 CROSSOVER TECHNIQUE

CAUTION
This technique can be used to switch from a primary to a more constrained implant after the bone resections have been performed.
When implanting GMK Revision and GMK Hinge the use of a stem is mandatory both for femur and tibia. When using the crossover technique it is suggested to use a short cemented stem without the offset coupler both for femur and tibia.

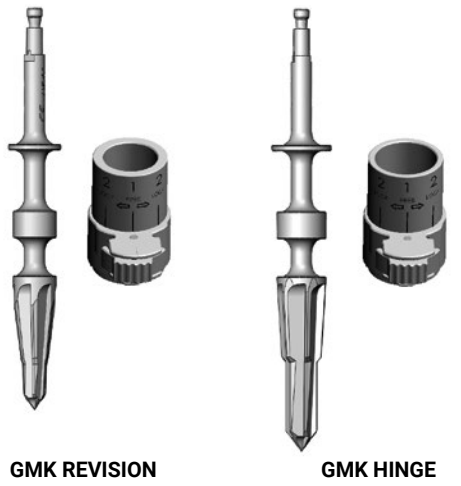
22.1 TIBIA FINISHING

OPTION
Clip the provisional tibial augment onto the bottom of the trial baseplate before positioning it on the tibia. To simulate a 10 mm augment, clip two 5 mm provisional augments together.

Position the trial baseplate on the tibial cut, optimizing the coverage of the resection and fix it with two pins.

Connect the reamer guide to the baseplate then ream with the conical reamer to create room for the tibial keel.

CAUTION
GMK Revision and GMK Hinge have different conical reamers and related reamer guides. The larger one must be used for GMK Hinge. Pay attention to the name written on the reamer.

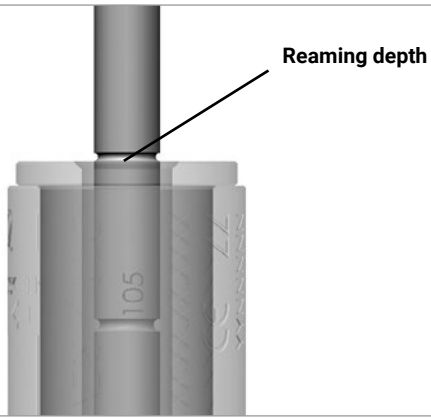


121.

Insert the D=9 mm bushing into the reamer guide and open the intramedullary canal using the D=9 mm drill bit.

To start, use the D=9 mm reamer with the T-handle provided. To determine the reaming depth, see the table below.

STEM LENGTH (mm)	REAMING DEPTH (mm)
65	105 + offset
105	150 + offset



122.

Remove the D=9 mm bushing and use the D=11 mm bushing to the same reaming depth.

If needed, use larger reamers and the related bushes to prepare the intramedullary canal until the desired diameter is reached.

CAUTION
Cemented stems are available in 11 mm, 13 mm and 16 mm diameter and 65 mm or 105 mm length.

OPTION
Only for D=11 mm and D=13 mm stems: connect the reamer guide and insert the D=16 mm bushing, then create room for the stem connection using the 15.5 mm tibial reamer.

123.

Connect the trial keel to the sliding hammer through to the impactor handle, then punch the tibia to create room for the tibial fins.

Finally remove the pins and the trial baseplate.

OPTION

On the side where no augments are planned, use the drill bit and drilling template provided to create room in the tibia to accommodate the augment holes protruding from the bottom of the baseplate.

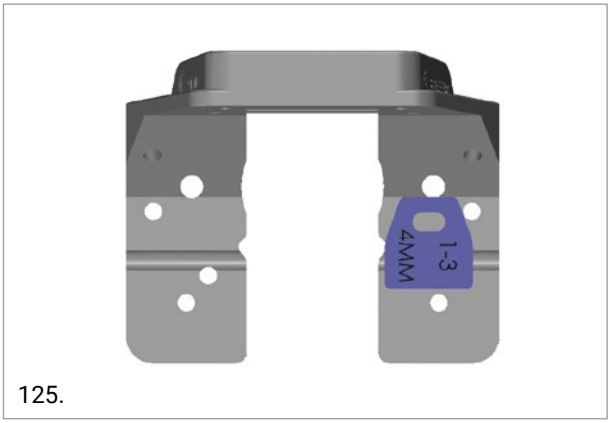
124.

This step may be skipped if the bone is not too hard.

22.2 FEMUR FINISHING

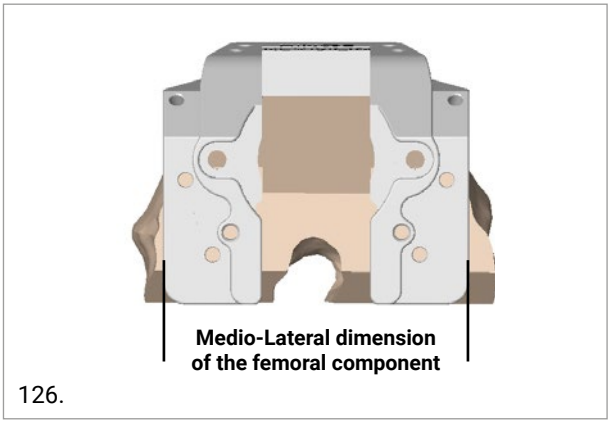
OPTION

Connect the provisional distal augment to the corresponding side (medial or lateral) at the back of the box cutter before positioning it on the femur.



125.

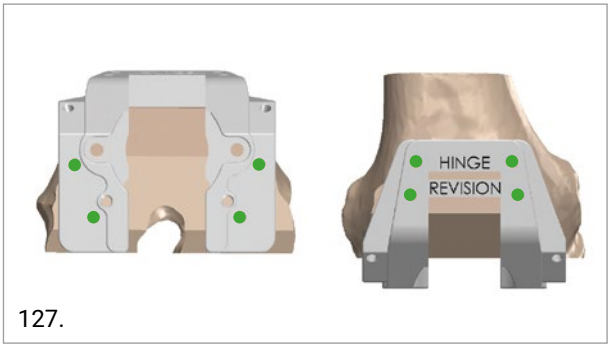
Position the box cutter guide on the femur in contact with the anterior cut, anterior chamfer and distal cut. The medio-lateral dimension is the same as for the femoral component.



126.

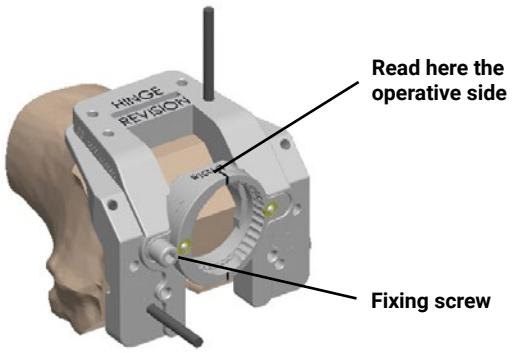
Medio-Lateral dimension of the femoral component

Pin the box cutter using at least two pins. Multiple pinning options are available (green spots).



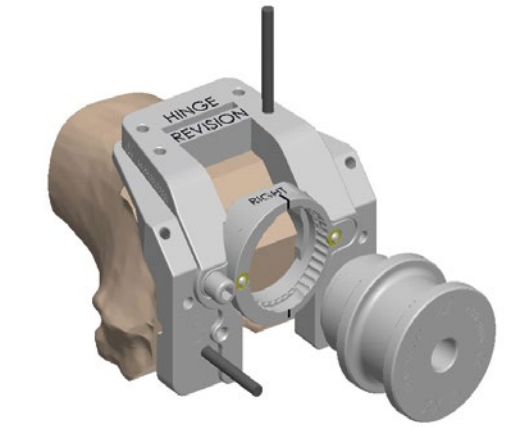
127.

Screw the 6°oriented offset bushing onto the box cutter according to the side operated on (left or right).



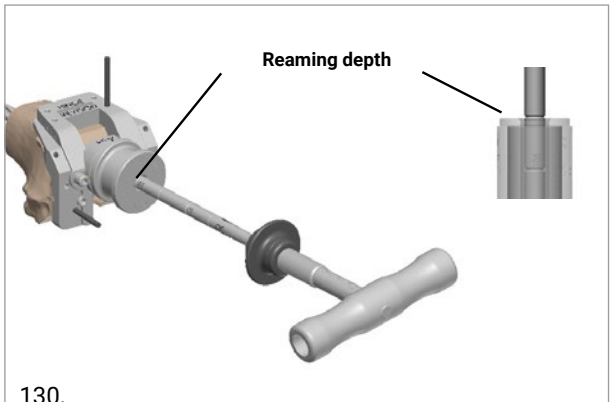
128.

Connect the 9 mm bushing onto the 6°oriented offset bushing (turn clockwise to lock). Open the intramedullary canal using the D=9 mm drill bit, if needed.



129.

To start, use the D=9 mm reamer with the T-handle provided. To define the reaming depth, see the following picture.



130.

STEM LENGTH (mm)	REAMING DEPTH (mm)
65	105 + offset
105	150 + offset

Remove the D=9 mm bushing and use the D=11 mm bushing to the same reaming depth. If needed, use larger diameter reamers and related bushing to enlarge the canal until the final desired diameter is reached.

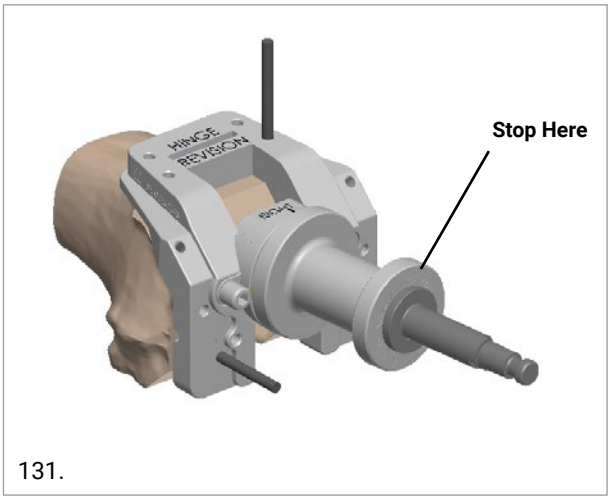
CAUTION

Cemented stems are available in 11 mm, 13 mm and 16 mm diameter and 65 mm or 105 mm length.

OPTION

Only for D=11 and 13 mm stems: connect the 6° oriented bushing and insert the D=15.5 mm bushing, then create room for the stem connection using the 15.5 mm reamer

Finally remove the pins and the box cutter.



131.

Remove the 15.5 mm bushing and the 6°oriented offset bushing and prepare the femoral box with the osteotome or reciprocating saw blade.

NOTE: Two slots are available: use the more most proximal for GMK Hinge and the more most distal for GMK Revision.

For the other surgical steps, refer to the complete surgical technique here enclosed.

23. ANNEX 2 TRIAL FIRST TECHNIQUE

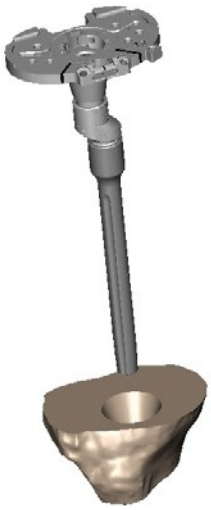
CAUTION

This eyeballing technique can be used to reproduce the trial implant assembly, including the offset position, only in case of a significant bone loss when no preliminary bone resections are required.

After reaming the tibial intramedullary canal, select the 3 mm or 5 mm offset coupler, then assemble the trial tibial tray with the finless keel provided and the trial stem of the appropriate size.

132.

Pre-adjust the angle between the offset coupler and the finless keel, trying to eyeballing the best coverage of the tibial cut, then insert the trial implant into the tibial cavity.



133.

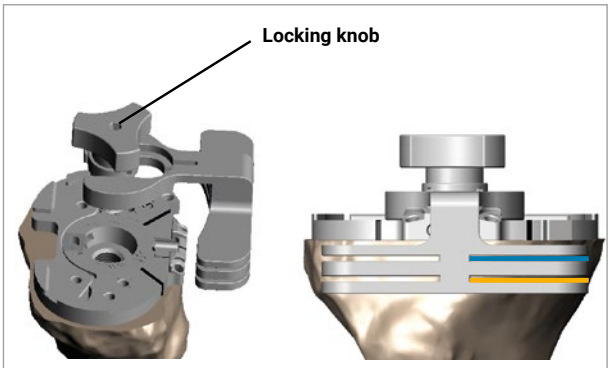
Check the tibial tray position and repeat the previous steps until the tibial tray properly covers the tibial cortical rim.

Once the tibial tray position is deemed satisfactory, fix the baseplate with two pins and screw the offset coupler to the finless keel using the manual screwdriver.

134.

OPTION

If any tibial augment is needed, the corresponding cuts can be performed though the cutting guide provided which must be fixed to the trial keel through he provided knob.



135.

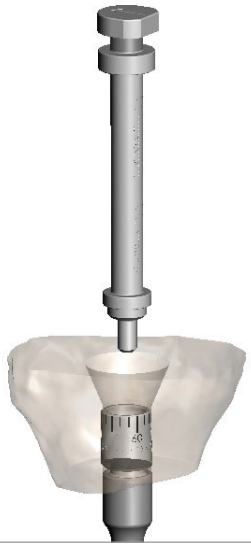
5 mm

10 mm

Remove the trial tibial implant and note the validated offset angle referring to the mark available on the finless keel.

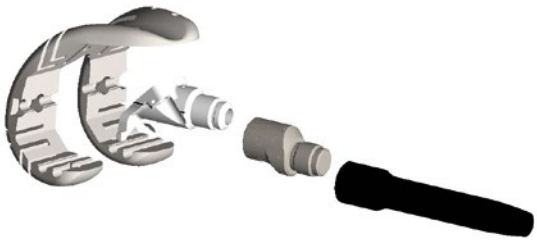
136.

CAUTION
If the connection between the finless keel and the offset coupler fails during extraction (e.g. due to improper fixation), use the extractor provided to remove the offset coupler together with the trial stem from the intramedullary canal.



137.

After reaming the femoral intramedullary canal, select the 3 mm offset coupler and assemble the provisional trial femoral implant with the boxless connector provided and the trial stem of the appropriate size.



138.

CAUTION
The 5 mm offset is not allowed for the femur.

Pre-adjust the angle between the offset coupler and the boxless connector, trying to eyeballing the best antero-posterior position, medio-lateral position and rotation of the femoral component. Then insert the trial implant into the femoral cavity.

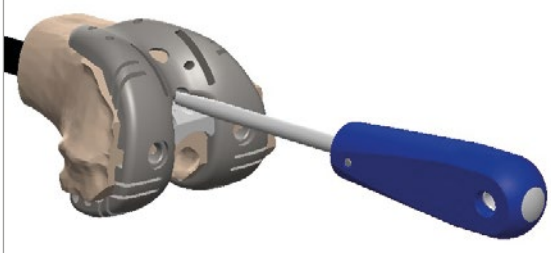
139.

OPTION
If any femoral augment is needed, it can now be connected to the trial femur. All the augment cuts can be performed later on through the slots provided on the trial femur.

140.

Check the femoral position and repeat the former steps until the trial femur properly covers the femoral cuts.

Once the femoral position is deemed satisfactory, screw the offset coupler to the boxless connector using the manual screwdriver.



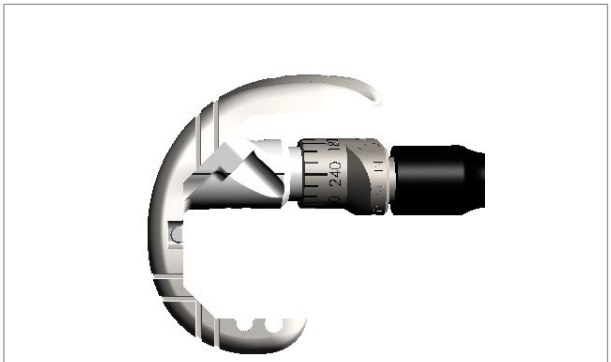
141.

Mark the medio-lateral position of the femoral component though the trial femur slots using the osteotome provided.

142.

NOTE: The medio-lateral profile can be also used as a landmark to position the box cutter, since it is the same for the trial femur and the box cutter.

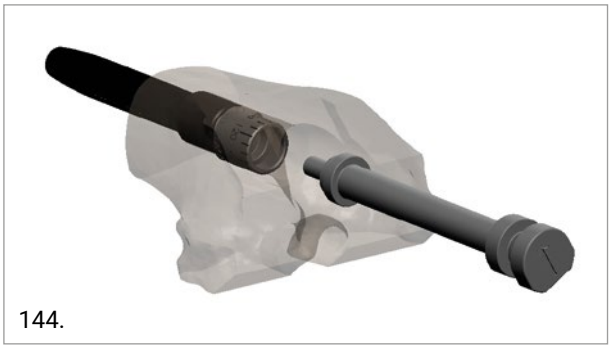
Remove the trial femoral implant and note the validated offset angle referring to the mark on the boxless connector.



143.

CAUTION

If the connection between the boxless connector and the offset coupler fails during extraction (e.g. due to improper fixation), use the extractor provided to remove the offset coupler together with the trial stem from the intramedullary canal.



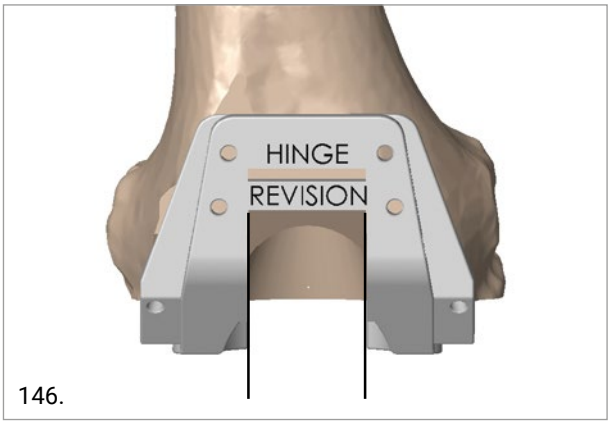
144.

OPTION

If any distal augment is needed, it must now be connected to the box cutter.

145.

Then position the femoral box cutter according to the landmarks previously marked through the trial femur.



146.

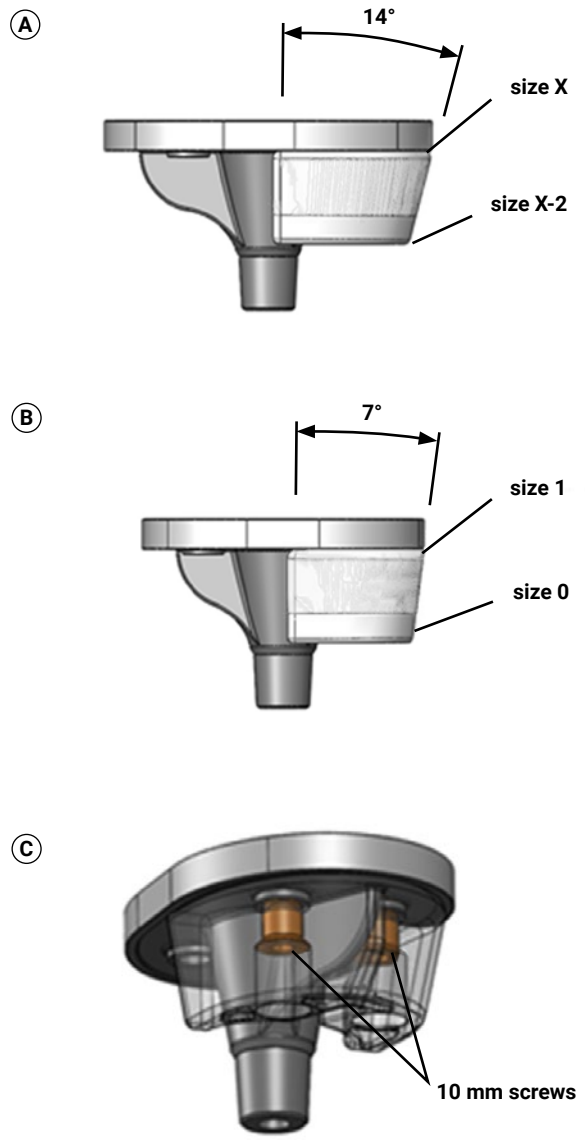
Fix the box cutter with at least two pins and proceed to the femoral box preparation.

For the other surgical steps, refer to the complete surgical technique here enclosed.

24. ANNEX 3 TIBIAL AUGMENTS 15 AND 20 MM THICK

For GMK Revision System, tibial augments with 15 and 20 mm thickness are also available on demand.

NOTE: These augments have a tapered shape. The area in the distal part is smaller by two sizes than the proximal area (A) (exception made for the size 1, which is only one size smaller, B). Moreover, as the tibial baseplate is asymmetric, two configurations are available: right medial/left lateral and left medial/right lateral. These augments must be fixed to the tibial tray by means of the two 10 mm screws provided in their package (Ref. 75.53.0132) (C). Screw-fixed tibial augmentation can be used only with GMK Revision tibial tray and GMK Hinge tibial tray.



147.

NOTE: When assembling a trial tibial component, monoblock trial tibial augments are available in the following thicknesses: 5, 15, and 20 mm. To simulate a 10 mm tibial augment, clip two 5 mm provisional augments together. The monoblock 15 and 20 mm trial tibial augments are available on demand.

The horizontal cuts for the tibial augments can be carried out through dedicated slots on the tibial cutting block.

148.

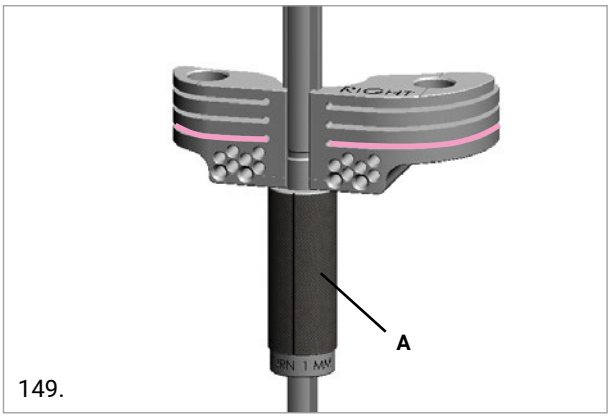
Tibial cutting block (right knee)

5 mm tibial augment

10 mm tibial augment

To perform the 15 mm and 20 mm tibial resections, assemble the 0 mm tibial stylus on the tibial cutting guide, position the stylus on the less worn side of the tibia plateau by turning the micrometric screw (A). Remove the stylus and turn the micrometric screw (A) 5 or 10 full turns downward. Perform the resection using the most distal slot of the cutting block (pink line).

NOTE: 1 full turn of the micrometric screw corresponds to 1 mm translation.



149.

A tibial baseplate size X fits trial tibial augments size X and X-1. For the complete matching capabilities, refer to the following Table 16.

		SCREW FIXED TIBIAL AUGMENT 15 mm - 20 mm					
GMK REVISION AND GMK HINGE TIBIAL BASEPLATE	SIZE	1	2	3	4	5	6
	1	✓	✗	✗	✗	✗	✗
	2	✓	✓	✗	✗	✗	✗
	3	✗	✓	✓	✗	✗	✗
	T3i4*	✗	✓	✓	✗	✗	✗
	4	✗	✗	✓	✓	✗	✗
	T4i3*	✗	✗	✓	✓	✗	✗
	5	✗	✗	✗	✓	✓	✗
	6	✗	✗	✗	✗	✓	✓

* Only for GMK Revision

Table 16: GMK Revision and GMK Hinge tibial component and screw fixed tibial augment size matching

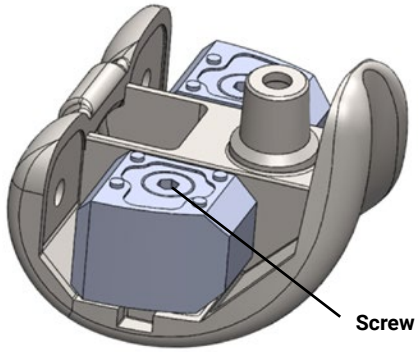
CAUTION

Tibial augments (either on medial, lateral or both sides) must always be implanted with a tibial extension stem. Cementing two augments together is not permitted. The final fixation to the bone is obtained by means of bone cement.

25. ANNEX 4 DISTAL FEMORAL AUGMENTS 16 AND 20 MM THICK

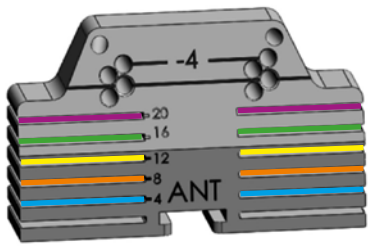
For GMK Revision System, distal femoral augments with 16 and 20 mm thickness are also available on demand.

NOTE: These distal femoral augments are intended to be mechanically attached to the GMK Revision and GMK Hinge femoral component by means of a screw packaged together with it.



150.

The cuts for the distal augments can be carried out through dedicated slots on the revision distal cutting block 02.07.10.4692 available on demand.



151.

20 mm
16 mm
12 mm
8 mm
4 mm

Monoblock 16 mm and 20 mm trial distal augments are available on demand. These trial augments must be assembled on the 4in1 cutting block, the box cutting guide and on the trial femoral component to maintain the joint line position.

A femoral component size X fits distal femoral augments size X. For the matching capabilities with posterior femoral augments refer to the following Table 17.

		DISTAL AUGMENTS				
POSTERIOR AUGMENTS	THICKNESS	4 mm	8 mm	12 mm	16 mm	20 mm
	5 mm	✓	✓	✓	✓	✓
	10 mm	✓	✓	✗	✗	✗

Table 17: GMK Revision and GMK Hinge distal and posterior femoral augments size matching

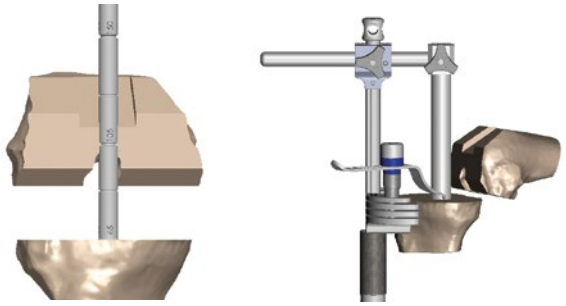
Distal femoral augments are supposed to be used on the distal condyles only, posterior femoral augments are supposed to be used on the posterior condyles only. The same femoral augment can be used either on the medial or lateral side.

CAUTION

Cementing two augments together is not allowed. The final fixation to the bone is obtained by means of bone cement.

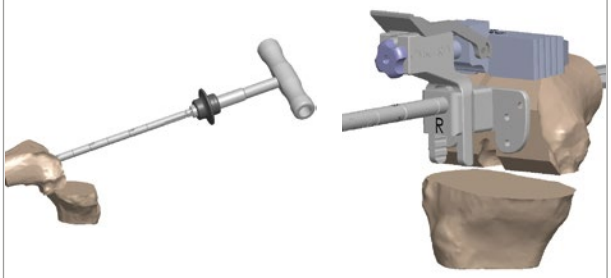
26. ANNEX 5 QUICK REFERENCE GUIDE

TIBIAL CUT



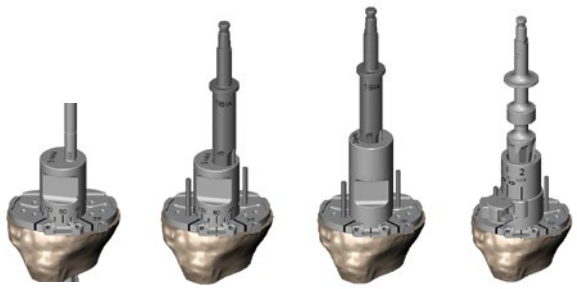
152.

DISTAL CUT



155.

TIBIAL OFFSET AND FINISHING



153.

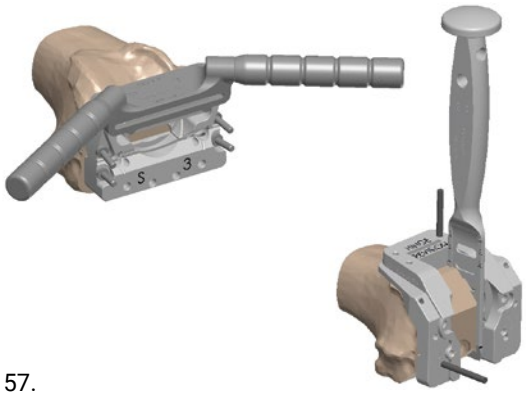
FEMORAL OFFSET AND FINISHING

156.

TRIAL TIBIAL IMPLANT

154.

FEMORAL CUTS AND BOX PREPARATION

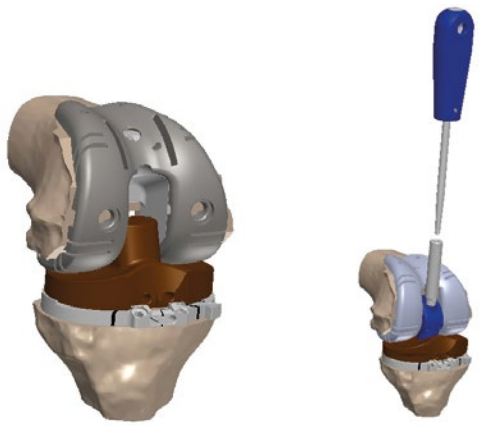


157.

TRIAL FEMORAL IMPLANT

158.

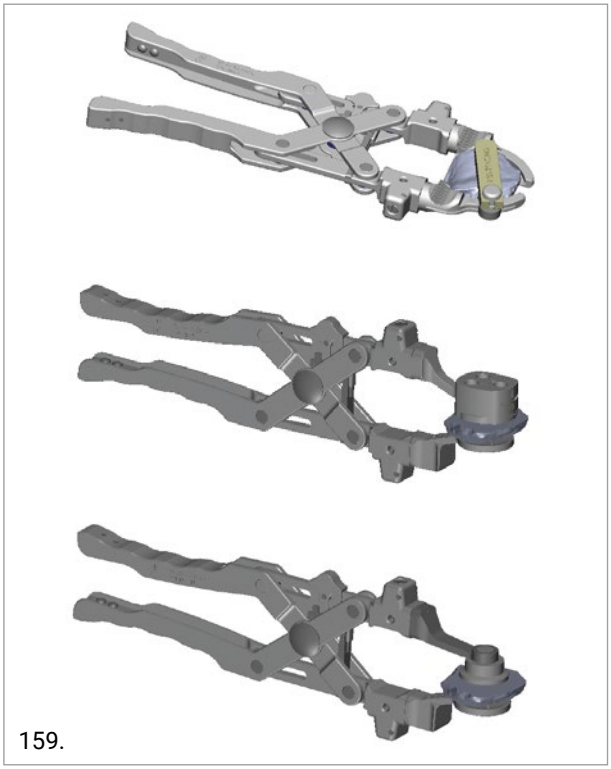
TRIAL REDUCTION



GMK REVISION **GMK HINGE**

160.

RESURFACING PATELLA

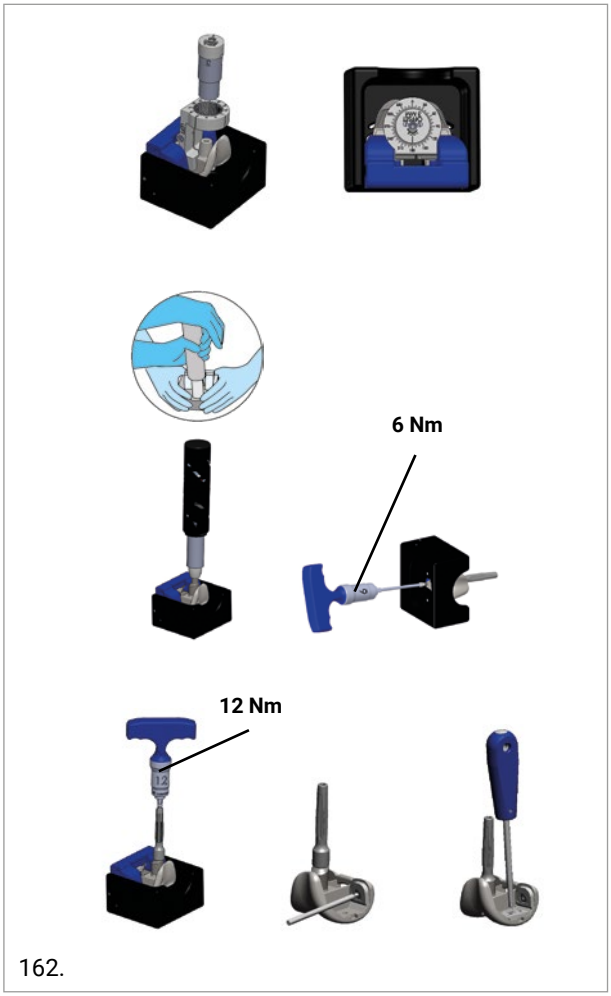


159.

FINAL TIBIAL IMPLANT ASSEMBLY

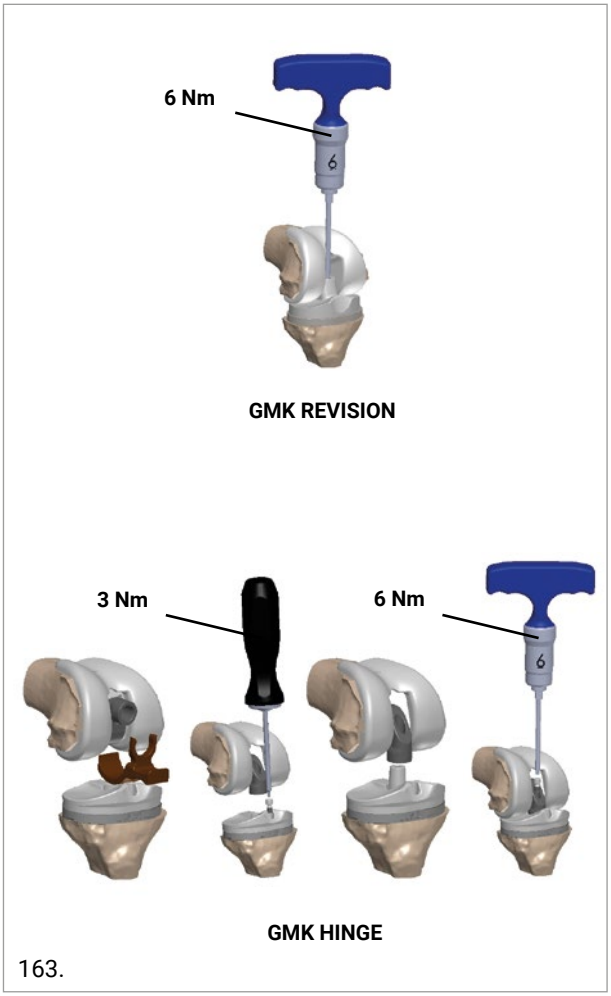
161.

FINAL FEMORAL IMPLANT ASSEMBLY



162.

FINAL REDUCTION



163.

27. ANNEX 6 IMPLANT NOMENCLATURE

GMK REVISION

GMK REVISION FEMUR STD

REF. LEFT	SIZE	REF. RIGHT
02.07.2501L	1	02.07.2501R
02.07.2502L	2	02.07.2502R
02.07.2503L	3	02.07.2503R
02.07.2504L	4	02.07.2504R
02.07.2505L	5	02.07.2505R
02.07.2506L	6	02.07.2506R

GMK REVISION FEMUR STD - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.4501L	1	02.07.4501R
02.07.4502L	2	02.07.4502R
02.07.4503L	3	02.07.4503R
02.07.4504L	4	02.07.4504R
02.07.4505L	5	02.07.4505R
02.07.4506L	6	02.07.4506R

GMK REVISION FEMUR PS

REF. LEFT	SIZE	REF. RIGHT
02.07.2401L	1	02.07.2401R
02.07.2402L	2	02.07.2402R
02.07.2403L	3	02.07.2403R
02.07.2404L	4	02.07.2404R
02.07.2405L	5	02.07.2405R
02.07.2406L	6	02.07.2406R

GMK REVISION FEMUR - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.4401L	1	02.07.4401R
02.07.4402L	2	02.07.4402R
02.07.4403L	3	02.07.4403R
02.07.4404L	4	02.07.4404R
02.07.4405L	5	02.07.4405R
02.07.4406L	6	02.07.4406R

GMK REVISION TIBIAL TRAY

REF. LEFT	SIZE	REF. RIGHT
02.07.0681L	1	02.07.0681R
02.07.0682L	2	02.07.0682R
02.07.0683L	3	02.07.0683R
02.19.T3i4L	T3i4	02.19.T3i4R
02.19.T4i3L	T4i3	02.19.T4i3R
02.07.0684L	4	02.07.0684R
02.07.0685L	5	02.07.0685R
02.07.0686L	6	02.07.0686R

GMK REVISION TIBIAL TRAY - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.4681L	1	02.07.4681R
02.07.4682L	2	02.07.4682R
02.07.4683L	3	02.07.4683R
02.19.28T3i4L	T3i4	02.19.28T3i4R
02.19.28T4i3L	T4i3	02.19.28T4i3R
02.07.4684L	4	02.07.4684R
02.07.4685L	5	02.07.4685R
02.07.4686L	6	02.07.4686R

GMK REVISION SEMI-CONSTRAINED PEG - SensiTiN -COATED

HEIGHT MM	REF.
10	02.07.SCP10
12	02.07.SCP12
14	02.07.SCP14
17	02.07.SCP17
20	02.07.SCP20
23	02.07.SCP23
26	02.07.SCP26

SEMI-CONSTRAINED FIXED TIBIAL INSERT

REF.	SIZE	THICKNESS (mm)	REF.	SIZE	THICKNESS (mm)
02.07.0110SCF	1	10	02.07.0210SCF	2	10
02.07.0112SCF		12	02.07.0212SCF		12
02.07.0114SCF		14	02.07.0214SCF		14
02.07.0117SCF		17	02.07.0217SCF		17
02.07.0120SCF		20	02.07.0220SCF		20
02.07.0123SCF		23	02.07.0223SCF		23
02.07.0126SCF		26	02.07.0226SCF		26
02.07.0310SCF	3	10	02.07.0410SCF	4	10
02.07.0312SCF		12	02.07.0412SCF		12
02.07.0314SCF		14	02.07.0414SCF		14
02.07.0317SCF		17	02.07.0417SCF		17
02.07.0320SCF		20	02.07.0420SCF		20
02.07.0323SCF		23	02.07.0423SCF		23
02.07.0326SCF		26	02.07.0426SCF		26
02.07.0510SCF	5	10	02.07.0610SCF	6	10
02.07.0512SCF		12	02.07.0612SCF		12
02.07.0514SCF		14	02.07.0614SCF		14
02.07.0517SCF		17	02.07.0617SCF		17
02.07.0520SCF		20	02.07.0620SCF		20
02.07.0523SCF		23	02.07.0623SCF		23
02.07.0526SCF		26	02.07.0626SCF		26

GMK PRIMARY TIBIAL TRAY

GMK PRIMARY FIXED TIBIAL TRAY CEMENTED

REF. LEFT	SIZE	REF. RIGHT
02.07.1201L	1	02.07.1201R
02.07.12015L	1+	02.07.12015R
02.07.1202L	2	02.07.1202R
02.07.12025L	2+	02.07.12025R
02.07.1203L	3	02.07.1203R
02.07.12035L	3+	02.07.12035R
02.12.T3I4L	t3-i4	02.12.T3I4R
02.12.T35I4L	t3+-i4	02.12.T35I4R
02.12.T4I3L	t4-i3	02.12.T4I3R
02.12.T45I3L	t4+-i3	02.12.T45I3R
02.07.1204L	4	02.07.1204R
02.07.12045L	4+	02.07.12045R
02.07.1205L	5	02.07.1205R
02.07.12055L	5+	02.07.12055R
02.07.1206L	6	02.07.1206R

GMK PRIMARY FIXED TIBIAL TRAY CEMENTED TiNbN COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.2801L	1	02.07.2801R
02.07.28015L	1+	02.07.28015R
02.07.2802L	2	02.07.2802R
02.07.28025L	2+	02.07.28025R
02.07.2803L	3	02.07.2803R
02.07.28035L	3+	02.07.28035R
02.12.28T3I4L	t3-i4	02.12.28T3I4R
02.12.28T35I4L	t3+-i4	02.12.28T35I4R
02.12.28T4I3L	t4-i3	02.12.28T4I3R
02.12.28T45I3L	t4+-i3	02.12.28T45I3R
02.07.2804L	4	02.07.2804R
02.07.28045L	4+	02.07.28045R
02.07.2805L	5	02.07.2805R
02.07.28055L	5+	02.07.28055R
02.07.2806L	6	02.07.2806R

GMK PRIMARY

GMK PRIMARY FEMUR STD CEMENTED

REF. LEFT	SIZE	REF. RIGHT
02.07.2000L	0	02.07.2000R
02.07.2001L	1	02.07.2001R
02.07.2002L	2	02.07.2002R
02.07.2003L	3	02.07.2003R
02.07.2004L	4	02.07.2004R
02.07.2005L	5	02.07.2005R
02.07.2006L	6	02.07.2006R
02.07.2007L	7	02.07.2007R

GMK PRIMARY FEMUR PS CEMENTED

REF. LEFT	SIZE	REF. RIGHT
02.07.2200L	0	02.07.2200R
02.07.2201L	1	02.07.2201R
02.07.2202L	2	02.07.2202R
02.07.2203L	3	02.07.2203R
02.07.2204L	4	02.07.2204R
02.07.2205L	5	02.07.2205R
02.07.2206L	6	02.07.2206R
02.07.2207L	7	02.07.2207R

GMK PRIMARY FEMUR STD CEMENTLESS

REF. LEFT	SIZE	REF. RIGHT
02.07.2300L	0	02.07.2300R
02.07.2301L	1	02.07.2301R
02.07.2302L	2	02.07.2302R
02.07.2303L	3	02.07.2303R
02.07.2304L	4	02.07.2304R
02.07.2305L	5	02.07.2305R
02.07.2306L	6	02.07.2306R
02.07.2307L	7	02.07.2307R

GMK PRIMARY FEMUR PS CEMENTLESS

REF. LEFT	SIZE	REF. RIGHT
02.07.2100L	0	02.07.2100R
02.07.2101L	1	02.07.2101R
02.07.2102L	2	02.07.2102R
02.07.2103L	3	02.07.2103R
02.07.2104L	4	02.07.2104R
02.07.2105L	5	02.07.2105R
02.07.2106L	6	02.07.2106R
02.07.2107L	7	02.07.2107R

GMK PRIMARY FEMUR STD CEMENTED - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.2700L	0	02.07.2700R
02.07.2701L	1	02.07.2701R
02.07.2702L	2	02.07.2702R
02.07.2703L	3	02.07.2703R
02.07.2704L	4	02.07.2704R
02.07.2705L	5	02.07.2705R
02.07.2706L	6	02.07.2706R
02.07.2707L	7	02.07.2707R

GMK PRIMARY FEMUR PS CEMENTED - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.2900L	0	02.07.2900R
02.07.2901L	1	02.07.2901R
02.07.2902L	2	02.07.2902R
02.07.2903L	3	02.07.2903R
02.07.2904L	4	02.07.2904R
02.07.2905L	5	02.07.2905R
02.07.2906L	6	02.07.2906R
02.07.2907L	7	02.07.2907R

GMK PRIMARY FEMUR STD CEMENTED - NARROW

REF. LEFT	SIZE	REF. RIGHT
02.07.2011L	1N	02.07.2011R
02.07.2012L	2N	02.07.2012R
02.07.2013L	3N	02.07.2013R
02.07.2014L	4N	02.07.2014R
02.07.2015L	5N	02.07.2015R
02.07.2016L	6N	02.07.2016R
02.07.2017L	7N	02.07.2017R

GMK PRIMARY FEMUR PS CEMENTED - NARROW

REF. LEFT	SIZE	REF. RIGHT
02.07.2211L	1N	02.07.2211R
02.07.2212L	2N	02.07.2212R
02.07.2213L	3N	02.07.2213R
02.07.2214L	4N	02.07.2214R
02.07.2215L	5N	02.07.2215R
02.07.2216L	6N	02.07.2216R
02.07.2217L	7N	02.07.2217R

GMK PRIMARY FEMUR STD CEMENTLESS - NARROW

REF. LEFT	SIZE	REF. RIGHT
02.07.2311L	1N	02.07.2311R
02.07.2312L	2N	02.07.2312R
02.07.2313L	3N	02.07.2313R
02.07.2314L	4N	02.07.2314R
02.07.2315L	5N	02.07.2315R
02.07.2316L	6N	02.07.2316R
02.07.2317L	7N	02.07.2317R

GMK PRIMARY FEMUR PS CEMENTLESS - NARROW

REF. LEFT	SIZE	REF. RIGHT
02.07.2111L	1N	02.07.2111R
02.07.2112L	2N	02.07.2112R
02.07.2113L	3N	02.07.2113R
02.07.2114L	4N	02.07.2114R
02.07.2115L	5N	02.07.2115R
02.07.2116L	6N	02.07.2116R
02.07.2117L	7N	02.07.2117R

GMK PRIMARY FEMUR STD CEMENTED - NARROW - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.3401L	1N	02.07.3401R
02.07.3402L	2N	02.07.3402R
02.07.3403L	3N	02.07.3403R
02.07.3404L	4N	02.07.3404R
02.07.3405L	5N	02.07.3405R
02.07.3406L	6N	02.07.3406R
02.07.3407L	7N	02.07.3407R

GMK PRIMARY FEMUR PS CEMENTED - NARROW - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.3301L	1N	02.07.3301R
02.07.3302L	2N	02.07.3302R
02.07.3303L	3N	02.07.3303R
02.07.3304L	4N	02.07.3304R
02.07.3305L	5N	02.07.3305R
02.07.3306L	6N	02.07.3306R
02.07.3307L	7N	02.07.3307R

GMK PRIMARY MOBILE TIBIAL TRAY CEMENTED

REF. LEFT	SIZE	REF. RIGHT
02.07.1001L	1	02.07.1001R
02.07.1002L	2	02.07.1002R
02.07.1003L	3	02.07.1003R
02.07.1004L	4	02.07.1004R
02.07.1005L	5	02.07.1005R
02.07.1006L	6	02.07.1006R

GMK PRIMARY TIBIAL COMPONENT MOBILE CEMENTED SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.07.2811L	1	02.07.2811R
02.07.2812L	2	02.07.2812R
02.07.2813L	3	02.07.2813R
02.07.2814L	4	02.07.2814R
02.07.2815L	5	02.07.2815R
02.07.2816L	6	02.07.2816R

UC FIXED TIBIAL INSERT

REF.	SIZE	THICKNESS (mm)	REF.	SIZE	THICKNESS (mm)
02.07.0110FUC	1	10	02.07.0210FUC	2	10
02.07.0112FUC		12	02.07.0212FUC		12
02.07.0114FUC		14	02.07.0214FUC		14
02.07.0117FUC		17	02.07.0217FUC		17
02.07.0120FUC		20	02.07.0220FUC		20
02.07.0310FUC	3	10	02.07.0410FUC	4	10
02.07.0312FUC		12	02.07.0412FUC		12
02.07.0314FUC		14	02.07.0414FUC		14
02.07.0317FUC		17	02.07.0417FUC		17
02.07.0320FUC		20	02.07.0420FUC		20
02.07.0510FUC	5	10	02.07.0610FUC	6	10
02.07.0512FUC		12	02.07.0612FUC		12
02.07.0514FUC		14	02.07.0614FUC		14
02.07.0517FUC		17	02.07.0617FUC		17
02.07.0520FUC		20	02.07.0620FUC		20

PS FIXED TIBIAL INSERT

REF.	SIZE	THICKNESS (mm)	REF.	SIZE	THICKNESS (mm)
02.07.0110PSF	1	10	02.07.0210PSF	2	10
02.07.0112PSF		12	02.07.0212PSF		12
02.07.0114PSF		14	02.07.0214PSF		14
02.07.0117PSF		17	02.07.0217PSF		17
02.07.0120PSF		20	02.07.0220PSF		20
02.07.0310PSF	3	10	02.07.0410PSF	4	10
02.07.0312PSF		12	02.07.0412PSF		12
02.07.0314PSF		14	02.07.0414PSF		14
02.07.0317PSF		17	02.07.0417PSF		17
02.07.0320PSF		20	02.07.0420PSF		20
02.07.0510PSF	5	10	02.07.0610PSF	6	10
02.07.0512PSF		12	02.07.0612PSF		12
02.07.0514PSF		14	02.07.0614PSF		14
02.07.0517PSF		17	02.07.0617PSF		17
02.07.0520PSF		20	02.07.0620PSF		20

UC MOBILE TIBIAL INSERT

REF.	SIZE	THICKNESS (mm)	REF.	SIZE	THICKNESS (mm)
02.07.0110MUC	1	10	02.07.0210MUC	2	10
02.07.0112MUC		12	02.07.0212MUC		12
02.07.0114MUC		14	02.07.0214MUC		14
02.07.0117MUC		17	02.07.0217MUC		17
02.07.0120MUC		20	02.07.0220MUC		20
02.07.0310MUC	3	10	02.07.0410MUC	4	10
02.07.0312MUC		12	02.07.0412MUC		12
02.07.0314MUC		14	02.07.0414MUC		14
02.07.0317MUC		17	02.07.0417MUC		17
02.07.0320MUC		20	02.07.0420MUC		20
02.07.0510MUC	5	10	02.07.0610MUC	6	10
02.07.0512MUC		12	02.07.0612MUC		12
02.07.0514MUC		14	02.07.0614MUC		14
02.07.0517MUC		17	02.07.0617MUC		17
02.07.0520MUC		20	02.07.0620MUC		20

STD MOBILE TIBIAL INSERT

REF.	SIZE	THICKNESS (mm)	REF.	SIZE	THICKNESS (mm)
02.07.0110SM	1	10	02.07.0210SM	2	10
02.07.0112SM		12	02.07.0212SM		12
02.07.0114SM		14	02.07.0214SM		14
02.07.0117SM		17	02.07.0217SM		17
02.07.0120SM		20	02.07.0220SM		20
02.07.0310SM	3	10	02.07.0410SM	4	10
02.07.0312SM		12	02.07.0412SM		12
02.07.0314SM		14	02.07.0414SM		14
02.07.0317SM		17	02.07.0417SM		17
02.07.0320SM		20	02.07.0420SM		20
02.07.0510SM	5	10	02.07.0610SM	6	10
02.07.0512SM		12	02.07.0612SM		12
02.07.0514SM		14	02.07.0614SM		14
02.07.0517SM		17	02.07.0617SM		17
02.07.0520SM		20	02.07.0620SM		20

GMK SPHERE

GMK SPHERE FEMUR CEMENTED

REF. LEFT	SIZE	REF. RIGHT)
02.12.0001L	1	02.12.0001R
02.12.0021L	1+	02.12.0021R
02.12.0002L	2	02.12.0002R
02.12.0022L	2+	02.12.0022R
02.12.0003L	3	02.12.0003R
02.12.0023L	3+	02.12.0023R
02.12.0004L	4	02.12.0004R
02.12.0024L	4+	02.12.0024R
02.12.0005L	5	02.12.0005R
02.12.0025L	5+	02.12.0025R
02.12.0006L	6	02.12.0006R
02.12.0026L	6+	02.12.0026R
02.12.0007L	7	02.12.0007R

GMK SPHERE FEMUR CEMENTED - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.12.0701L	1	02.12.0701R
02.12.0721L	1+	02.12.0721R
02.12.0702L	2	02.12.0702R
02.12.0722L	2+	02.12.0722R
02.12.0703L	3	02.12.0703R
02.12.0723L	3+	02.12.0723R
02.12.0704L	4	02.12.0704R
02.12.0724L	4+	02.12.0724R
02.12.0705L	5	02.12.0705R
02.12.0725L	5+	02.12.0725R
02.12.0706L	6	02.12.0706R
02.12.0726L	6+	02.12.0726R
02.12.0707L	7	02.12.0707R

GMK SPHERE FEMUR CEMENTLESS

REF. LEFT	SIZE	REF. RIGHT)
02.12.1001L	1	02.12.1001R
02.12.1021L	1+	02.12.1021R
02.12.1002L	2	02.12.1002R
02.12.1022L	2+	02.12.1022R
02.12.1003L	3	02.12.1003R
02.12.1023L	3+	02.12.1023R
02.12.1004L	4	02.12.1004R
02.12.1024L	4+	02.12.1024R
02.12.1005L	5	02.12.1005R
02.12.1025L	5+	02.12.1025R
02.12.1006L	6	02.12.1006R
02.12.1026L	6+	02.12.1026R
02.12.1007L	7	02.12.1007R

GMK SPHERE TIBIAL INSERT FLEX

SIZE 1		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0110FL	10	02.12.0110FR
02.12.0111FL	11	02.12.0111FR
02.12.0112FL	12	02.12.0112FR
02.12.0113FL	13	02.12.0113FR
02.12.0114FL	14	02.12.0114FR
02.12.0117FL	17	02.12.0117FR
02.12.0120FL	20	02.12.0120FR

SIZE 2		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0210FL	10	02.12.0210FR
02.12.0211FL	11	02.12.0211FR
02.12.0212FL	12	02.12.0212FR
02.12.0213FL	13	02.12.0213FR
02.12.0214FL	14	02.12.0214FR
02.12.0217FL	17	02.12.0217FR
02.12.0220FL	20	02.12.0220FR

SIZE 3		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0310FL	10	02.12.0310FR
02.12.0311FL	11	02.12.0311FR
02.12.0312FL	12	02.12.0312FR
02.12.0313FL	13	02.12.0313FR
02.12.0314FL	14	02.12.0314FR
02.12.0317FL	17	02.12.0317FR
02.12.0320FL	20	02.12.0320FR

SIZE 4		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0410FL	10	02.12.0410FR
02.12.0411FL	11	02.12.0411FR
02.12.0412FL	12	02.12.0412FR
02.12.0413FL	13	02.12.0413FR
02.12.0414FL	14	02.12.0414FR
02.12.0417FL	17	02.12.0417FR
02.12.0420FL	20	02.12.0420FR

SIZE 5		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0510FL	10	02.12.0510FR
02.12.0511FL	11	02.12.0511FR
02.12.0512FL	12	02.12.0512FR
02.12.0513FL	13	02.12.0513FR
02.12.0514FL	14	02.12.0514FR
02.12.0517FL	17	02.12.0517FR
02.12.0520FL	20	02.12.0520FR

SIZE 6		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0610FL	10	02.12.0610FR
02.12.0611FL	11	02.12.0611FR
02.12.0612FL	12	02.12.0612FR
02.12.0613FL	13	02.12.0613FR
02.12.0614FL	14	02.12.0614FR
02.12.0617FL	17	02.12.0617FR
02.12.0620FL	20	02.12.0620FR

GMK SPHERE TIBIAL INSERT FLEX E-CROSS

SIZE 1		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0110FL	10	02.12.E0110FR
02.12.E0111FL	11	02.12.E0111FR
02.12.E0112FL	12	02.12.E0112FR
02.12.E0113FL	13	02.12.E0113FR
02.12.E0114FL	14	02.12.E0114FR
02.12.E0117FL	17	02.12.E0117FR
02.12.E0120FL	20	02.12.E0120FR

SIZE 2		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0210FL	10	02.12.E0210FR
02.12.E0211FL	11	02.12.E0211FR
02.12.E0212FL	12	02.12.E0212FR
02.12.E0213FL	13	02.12.E0213FR
02.12.E0214FL	14	02.12.E0214FR
02.12.E0217FL	17	02.12.E0217FR
02.12.E0220FL	20	02.12.E0220FR

SIZE 3		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0310FL	10	02.12.E0310FR
02.12.E0311FL	11	02.12.E0311FR
02.12.E0312FL	12	02.12.E0312FR
02.12.E0313FL	13	02.12.E0313FR
02.12.E0314FL	14	02.12.E0314FR
02.12.E0317FL	17	02.12.E0317FR
02.12.E0320FL	20	02.12.E0320FR

SIZE 4		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0410FL	10	02.12.E0410FR
02.12.E0411FL	11	02.12.E0411FR
02.12.E0412FL	12	02.12.E0412FR
02.12.E0413FL	13	02.12.E0413FR
02.12.E0414FL	14	02.12.E0414FR
02.12.E0417FL	17	02.12.E0417FR
02.12.E0420FL	20	02.12.E0420FR

SIZE 5		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0510FL	10	02.12.E0510FR
02.12.E0511FL	11	02.12.E0511FR
02.12.E0512FL	12	02.12.E0512FR
02.12.E0513FL	13	02.12.E0513FR
02.12.E0514FL	14	02.12.E0514FR
02.12.E0517FL	17	02.12.E0517FR
02.12.E0520FL	20	02.12.E0520FR

SIZE 6		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0610FL	10	02.12.E0610FR
02.12.E0611FL	11	02.12.E0611FR
02.12.E0612FL	12	02.12.E0612FR
02.12.E0613FL	13	02.12.E0613FR
02.12.E0614FL	14	02.12.E0614FR
02.12.E0617FL	17	02.12.E0617FR
02.12.E0620FL	20	02.12.E0620FR

GMK SPHERE TIBIAL INSERT CR

SIZE 1		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0110CRL	10	02.12.0110CRR
02.12.0111CRL	11	02.12.0111CRR
02.12.0112CRL	12	02.12.0112CRR
02.12.0113CRL	13	02.12.0113CRR
02.12.0114CRL	14	02.12.0114CRR

SIZE 2		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0210CRL	10	02.12.0210CRR
02.12.0211CRL	11	02.12.0211CRR
02.12.0212CRL	12	02.12.0212CRR
02.12.0213CRL	13	02.12.0213CRR
02.12.0214CRL	14	02.12.0214CRR

SIZE 3		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0310CRL	10	02.12.0310CRR
02.12.0311CRL	11	02.12.0311CRR
02.12.0312CRL	12	02.12.0312CRR
02.12.0313CRL	13	02.12.0313CRR
02.12.0314CRL	14	02.12.0314CRR

SIZE 4		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0410CRL	10	02.12.0410CRR
02.12.0411CRL	11	02.12.0411CRR
02.12.0412CRL	12	02.12.0412CRR
02.12.0413CRL	13	02.12.0413CRR
02.12.0414CRL	14	02.12.0414CRR

SIZE 5		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0510CRL	10	02.12.0510CRR
02.12.0511CRL	11	02.12.0511CRR
02.12.0512CRL	12	02.12.0512CRR
02.12.0513CRL	13	02.12.0513CRR
02.12.0514CRL	14	02.12.0514CRR

SIZE 6		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.0610CRL	10	02.12.0610CRR
02.12.0611CRL	11	02.12.0611CRR
02.12.0612CRL	12	02.12.0612CRR
02.12.0613CRL	13	02.12.0613CRR
02.12.0614CRL	14	02.12.0614CRR

GMK SPHERE TIBIAL INSERT CR E-CROSS

SIZE 1		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0110CRL	10	02.12.E0110CRR
02.12.E0111CRL	11	02.12.E0111CRR
02.12.E0112CRL	12	02.12.E0112CRR
02.12.E0113CRL	13	02.12.E0113CRR
02.12.E0114CRL	14	02.12.E0114CRR

SIZE 2		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0210CRL	10	02.12.E0210CRR
02.12.E0211CRL	11	02.12.E0211CRR
02.12.E0212CRL	12	02.12.E0212CRR
02.12.E0213CRL	13	02.12.E0213CRR
02.12.E0214CRL	14	02.12.E0214CRR

SIZE 3		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0310CRL	10	02.12.E0310CRR
02.12.E0311CRL	11	02.12.E0311CRR
02.12.E0312CRL	12	02.12.E0312CRR
02.12.E0313CRL	13	02.12.E0313CRR
02.12.E0314CRL	14	02.12.E0314CRR

SIZE 4		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0410CRL	10	02.12.E0410CRR
02.12.E0411CRL	11	02.12.E0411CRR
02.12.E0412CRL	12	02.12.E0412CRR
02.12.E0413CRL	13	02.12.E0413CRR
02.12.E0414CRL	14	02.12.E0414CRR

SIZE 5		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0510CRL	10	02.12.E0510CRR
02.12.E0511CRL	11	02.12.E0511CRR
02.12.E0512CRL	12	02.12.E0512CRR
02.12.E0513CRL	13	02.12.E0513CRR
02.12.E0514CRL	14	02.12.E0514CRR

SIZE 6		
REF. LEFT	THICKNESS (mm)	REF. RIGHT
02.12.E0610CRL	10	02.12.E0610CRR
02.12.E0611CRL	11	02.12.E0611CRR
02.12.E0612CRL	12	02.12.E0612CRR
02.12.E0613CRL	13	02.12.E0613CRR
02.12.E0614CRL	14	02.12.E0614CRR

GMK HINGE

GMK HINGE FEMUR

REF. LEFT	SIZE	REF. RIGHT
02.09.2601L	1	02.09.2601R
02.09.2602L	2	02.09.2602R
02.09.2603L	3	02.09.2603R
02.09.2604L	4	02.09.2604R
02.09.2605L	5	02.09.2605R
02.09.2606L	6	02.09.2606R

GMK HINGE FEMUR - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.09.2701L	1	02.09.2701R
02.09.2702L	2	02.09.2702R
02.09.2703L	3	02.09.2703R
02.09.2704L	4	02.09.2704R
02.09.2705L	5	02.09.2705R
02.09.2706L	6	02.09.2706R

GMK HINGE TIBIAL TRAY

REF. LEFT	SIZE	REF. RIGHT
02.09.4001L	1	02.09.4001R
02.09.4002L	2	02.09.4002R
02.09.4003L	3	02.09.4003R
02.09.4004L	4	02.09.4004R
02.09.4005L	5	02.09.4005R
02.09.4006L	6	02.09.4006R

GMK HINGE TIBIAL TRAY - SensiTiN-COATED

REF. LEFT	SIZE	REF. RIGHT
02.09.4801L	1	02.09.4801R
02.09.4802L	2	02.09.4802R
02.09.4803L	3	02.09.4803R
02.09.4804L	4	02.09.4804R
02.09.4805L	5	02.09.4805R
02.09.4806L	6	02.09.4806R

GMK-HINGE POST EXTENSION - SensiTiN-COATED

HEIGHT MM	REF.
10	02.09.HE10
12	02.09.HE12
14	02.09.HE14
17	02.09.HE17
20	02.09.HE20
23	02.09.HE23
26	02.09.HE26

GMK HINGE TIBIAL INSERT

REF.	SIZE	THICKNESS (mm)	REF.	SIZE	THICKNESS (mm)
02.09.0110H	1	10	02.09.0210H	2	10
02.09.0112H		12	02.09.0212H		12
02.09.0114H		14	02.09.0214H		14
02.09.0117H		17	02.09.0217H		17
02.09.0120H		20	02.09.0220H		20
02.09.0123H		23	02.09.0223H		23
02.09.0126H		26	02.09.0226H		26
02.09.0310H	3	10	02.09.0410H	4	10
02.09.0312H		12	02.09.0412H		12
02.09.0314H		14	02.09.0414H		14
02.09.0317H		17	02.09.0417H		17
02.09.0320H		20	02.09.0420H		20
02.09.0323H		23	02.09.0423H		23
02.09.0326H		26	02.09.0426H		26
02.09.0510H	5	10	02.09.0610H	6	10
02.09.0512H		12	02.09.0612H		12
02.09.0514H		14	02.09.0614H		14
02.09.0517H		17	02.09.0617H		17
02.09.0520H		20	02.09.0620H		20
02.09.0523H		23	02.09.0623H		23
02.09.0526H		26	02.09.0626H		26

FEMORAL AND TIBIAL REVISION OPTIONS

FEMORAL POSTERIOR AUGMENT 5 mm **

SIZE	REF.
1	02.05.01PW
2	02.05.02PW
3	02.05.03PW
4	02.05.04PW
5	02.05.05PW
6	02.05.06PW

FEMORAL POSTERIOR AUGMENT 10 mm **

SIZE	REF.
1	02.07.110FPW
2	02.07.210FPW
3	02.07.310FPW
4	02.07.410FPW
5	02.07.510FPW
6	02.07.610FPW

FEMORAL POSTERIOR AUGMENT 5 mm - Ti6Al4V

SIZE	REF.
1	02.07.7105FPW
2	02.07.7205FPW
3	02.07.7305FPW
4	02.07.7405FPW
5	02.07.7505FPW
6	02.07.7605FPW

FEMORAL POSTERIOR AUGMENT 10 mm - Ti6Al4V

SIZE	REF.
1	02.07.7110FPW
2	02.07.7210FPW
3	02.07.7310FPW
4	02.07.7410FPW
5	02.07.7510FPW
6	02.07.7610FPW

FEMORAL DISTAL AUGMENT 4 mm **

SIZE	REF.
1	02.07.104FDW
2	02.07.204FDW
3	02.07.304FDW
4	02.07.404FDW
5	02.07.504FDW
6	02.07.604FDW

FEMORAL DISTAL AUGMENT 8 mm **

SIZE	REF.
1	02.05.01DW
2	02.05.02DW
3	02.05.03DW
4	02.05.04DW
5	02.05.05DW
6	02.05.06DW

FEMORAL DISTAL AUGMENT 12 mm **

SIZE	REF.
1	02.07.112FDA
2	02.07.212FDA
3	02.07.312FDA
4	02.07.412FDA
5	02.07.512FDA
6	02.07.612FDA

FEMORAL DISTAL AUGMENT 12 mm * **

SIZE	REF.
1	02.07.112FDW
2	02.07.212FDW
3	02.07.312FDW
4	02.07.412FDW
5	02.07.512FDW
6	02.07.612FDW

* Not compatible with 5 mm femoral posterior augments

FEMORAL DISTAL AUGMENT 4 mm - Ti6Al4V

SIZE	REF.
1	02.07.7104FDW
2	02.07.7204FDW
3	02.07.7304FDW
4	02.07.7404FDW
5	02.07.7504FDW
6	02.07.7604FDW

FEMORAL DISTAL AUGMENT 8 mm - Ti6Al4V

SIZE	REF.
1	02.07.7108FDW
2	02.07.7208FDW
3	02.07.7308FDW
4	02.07.7408FDW
5	02.07.7508FDW
6	02.07.7608FDW

FEMORAL DISTAL AUGMENT 12 mm - Ti6Al4V

SIZE	REF.
1	02.07.7112FDA
2	02.07.7212FDA
3	02.07.7312FDA
4	02.07.7412FDA
5	02.07.7512FDA
6	02.07.7612FDA

** Must NOT be coupled with SensiTiN-coated femoral component or tibial component

FEMORAL DISTAL AUGMENT 16 mm **

SIZE	REF.
1	02.07.116FDA
2	02.07.216FDA
3	02.07.316FDA
4	02.07.416FDA
5	02.07.516FDA
6	02.07.616FDA

FEMORAL DISTAL AUGMENT 16 mm - Ti6Al4V

SIZE	REF.
1	02.07.7116FDA
2	02.07.7216FDA
3	02.07.7316FDA
4	02.07.7416FDA
5	02.07.7516FDA
6	02.07.7616FDA

FEMORAL DISTAL AUGMENT 20 mm **

SIZE	REF.
1	02.07.120FDA
2	02.07.220FDA
3	02.07.320FDA
4	02.07.420FDA
5	02.07.520FDA
6	02.07.620FDA

FEMORAL DISTAL AUGMENT 20 mm - Ti6Al4V

SIZE	REF.
1	02.07.7120FDA
2	02.07.7220FDA
3	02.07.7320FDA
4	02.07.7420FDA
5	02.07.7520FDA
6	02.07.7620FDA

CEMENTED TIBIAL AUGMENT 5 mm

SIZE	REF.
0	02.07.00TW
1	02.07.01TW
2	02.07.02TW
3	02.07.03TW
4	02.07.04TW
5	02.07.05TW
6	02.07.06TW

CEMENTED TIBIAL AUGMENT 10 mm

SIZE	REF.
0	02.07.10TW
1	02.07.11TW
2	02.07.12TW
3	02.07.13TW
4	02.07.14TW
5	02.07.15TW
6	02.07.16TW

SCREW-FIXED TIBIAL AUGMENT 5 mm **

SIZE	REF.
0	02.09.TA005
1	02.09.TA105
2	02.09.TA205
3	02.09.TA305
4	02.09.TA405
5	02.09.TA505
6	02.09.TA605

SCREW-FIXED TIBIAL AUGMENT 10 mm **

SIZE	REF.
0	02.09.TA010
1	02.09.TA110
2	02.09.TA210
3	02.09.TA310
4	02.09.TA410
5	02.09.TA510
6	02.09.TA610

** Must NOT be coupled with SensiTiN-coated femoral component or tibial component

SCREW-FIXED TIBIAL AUGMENT 5 mm - Ti6Al4V

SIZE	REF.
0	02.09.8TA005
1	02.09.8TA105
2	02.09.8TA205
3	02.09.8TA305
4	02.09.8TA405
5	02.09.8TA505
6	02.09.8TA605

SCREW-FIXED TIBIAL AUGMENT 10 mm - Ti6Al4V

SIZE	REF.
0	02.09.8TA010
1	02.09.8TA110
2	02.09.8TA210
3	02.09.8TA310
4	02.09.8TA410
5	02.09.8TA510
6	02.09.8TA610

SCREW-FIXED TIBIAL AUGMENT 15 mm **

REF. RIGHT MEDIAL - LEFT LATERAL	SIZE	REF. LEFT MEDIAL - RIGHT LATERAL
02.09.TA115RMLL	1	02.09.TA115LMRL
02.09.TA215RMLL	2	02.09.TA215LMRL
02.09.TA315RMLL	3	02.09.TA315LMRL
02.09.TA415RMLL	4	02.09.TA415LMRL
02.09.TA515RMLL	5	02.09.TA515LMRL
02.09.TA615RMLL	6	02.09.TA615LMRL

SCREW-FIXED TIBIAL AUGMENT 15 mm - TI6AL4V

REF. RIGHT MEDIAL - LEFT LATERAL	SIZE	REF. LEFT MEDIAL - RIGHT LATERAL
02.09.8TA115RMLL	1	02.09.8TA115LMRL
02.09.8TA215RMLL	2	02.09.8TA215LMRL
02.09.8TA315RMLL	3	02.09.8TA315LMRL
02.09.8TA415RMLL	4	02.09.8TA415LMRL
02.09.8TA515RMLL	5	02.09.8TA515LMRL
02.09.8TA615RMLL	6	02.09.8TA615LMRL

SCREW-FIXED TIBIAL AUGMENT 20 mm **

REF. RIGHT MEDIAL - LEFT LATERAL	SIZE	REF. LEFT MEDIAL - RIGHT LATERAL
02.09.TA120RMLL	1	02.09.TA120LMRL
02.09.TA220RMLL	2	02.09.TA220LMRL
02.09.TA320RMLL	3	02.09.TA320LMRL
02.09.TA420RMLL	4	02.09.TA420LMRL
02.09.TA520RMLL	5	02.09.TA520LMRL
02.09.TA620RMLL	6	02.09.TA620LMRL

SCREW-FIXED TIBIAL AUGMENT 20 mm - Ti6Al4V

REF. RIGHT MEDIAL - LEFT LATERAL	SIZE	REF. LEFT MEDIAL - RIGHT LATERAL
02.09.8TA120RMLL	1	02.09.8TA120LMRL
02.09.8TA220RMLL	2	02.09.8TA220LMRL
02.09.8TA320RMLL	3	02.09.8TA320LMRL
02.09.8TA420RMLL	4	02.09.8TA420LMRL
02.09.8TA520RMLL	5	02.09.8TA520LMRL
02.09.8TA620RMLL	6	02.09.8TA620LMRL

GMK RESURFACING PATELLA

SIZE	REF.
1	02.07.0033RP
2	02.07.0034RP
3	02.07.0035RP
4	02.07.0036RP

GMK INSET PATELLA

SIZE	REF.
1	02.07.0040IP
2	02.07.0041IP
3	02.07.0042IP
4	02.07.0043IP

** Must NOT be coupled with SensiTiN-coated femoral component or tibial component

FLUTED CEMENTLESS EXTENSION STEM

REF.	Ø (mm)	L (mm)	REF.	Ø (mm)	L (mm)
02.07.FCL10065	10	65	02.07.FCL15065	15	65
02.07.FCL10105	10	105	02.07.FCL15105	15	105
02.07.FCL10150	10	150	02.07.FCL15150	15	150
02.07.FCL11065	11	65	02.07.FCL16065	16	65
02.07.FCL11105	11	105	02.07.FCL16105	16	105
02.07.FCL11150	11	150	02.07.FCL16150	16	150
02.07.FCL12065	12	65	02.07.FCL18065	18	65
02.07.FCL12105	12	105	02.07.FCL18105	18	105
02.07.FCL12150	12	150	02.07.FCL18150	18	150
02.07.FCL13065	13	65	02.07.FCL20065	20	65
02.07.FCL13105	13	105	02.07.FCL20105	20	105
02.07.FCL13150	13	150	02.07.FCL20150	20	150
02.07.FCL14065	14	65	02.07.FCL22065	22	65
02.07.FCL14105	14	105	02.07.FCL22105	22	105
02.07.FCL14150	14	150	02.07.FCL22150	22	150

CEMENTLESS EXTENSION STEM

REF.	Ø (mm)	L (mm)
02.07.F11065	11	65
02.07.F11105	11	105
02.07.F11150	11	150
02.07.F13065	13	65
02.07.F13105	13	105
02.07.F13150	13	150
02.07.F16065	16	65
02.07.F16105	16	105
02.07.F16150	16	150
02.07.F19065	19	65
02.07.F19105	19	105
02.07.F19150	19	150
02.07.F22065	22	65
02.07.F22105	22	105
02.07.F22150	22	150

CEMENTED EXTENSION STEM

REF.	Ø (mm)	L (mm)
02.07.FSC11065	11	65
02.07.FSC11105	11	105
02.07.FSC13065	13	65
02.07.FSC13105	13	105
02.07.FSC16065	16	65
02.07.FSC16105	16	105

OFFSET CONNECTOR

REF.	OFFSET(mm)
02.07.0003	3
02.07.0005	5

Part numbers subject to change.

NOTE FOR STERILISATION

The instrumentation is not sterile upon delivery. It must be cleaned before use and sterilised in an autoclave respecting the regulations of the country, EU directives where applicable and following the instructions for use of the autoclave manufacturer. For detailed instructions, please refer to the document “Recommendations for cleaning decontamination and sterilisation of Medacta International orthopaedic devices” available at www.medacta.com.

REDEFINING BETTER
IN ORTHOPAEDICS
AND SPINE SURGERY

MEDACTA.COM

Medacta
International

Medacta International SA
Strada Regina, 34 - 6874 Castel San Pietro - Switzerland
Phone +41 91 696 60 60 - Fax +41 91 696 60 66
info@medacta.ch

Find your local dealer at: medacta.com/locations

GMK® Revision System
Surgical Technique

ref: 99.27S.12
rev. 04bis

Last update: December 2022
CE 0476