

# GAAK<sup>®</sup> REVISION SYSTEM

GLOBAL MEDACTA KNEE

DIFFERENT NEEDS... ...YOUR GLOBAL SOLUTION



## Surgical Technique

Joint

Spine

Sports Med

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## 1. INTRODUCTION

GMK Revision System includes GMK Revision and GMK Hinge.

These prostheses are indicated for total knee replacement primary or revision surgeries in presence of a collateral ligament deficiency from moderate to serious 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 for a successful total knee revision include, but are not limited to:

- 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.

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

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

The primary goal of a GMK Revision and GMK Hinge knee replacement includes the restoration of anatomical alignment and functional stability, the accurate re-establishment of the joint line and the fixation and stabilization of the revision prosthetic implant components.

### 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 CANNOT 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. 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 assembly is provided in Appendix 1.

### CAUTION

Federal law (USA) restricts this device to be sold by, or on order of, any physician. Please consult the package insert for complete product information.

## 1.1 INDICATION OF USE

### GMK REVISION

The Evolis/GMK 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.

This knee replacement system is indicated in the following cases:

- Severely painful and/or disabled joint as a result of arthritis, traumatic arthritis, rheumatoid arthritis or polyarthritis
- Avascular necrosis of femoral condyle
- Post traumatic loss of joint configuration
- Primary implantation failure

Cemented tibial augments are to be attached to the tibial baseplate with both the fixing cylinders and bone cement.

The screwed tibial augments are for screwed fixation to the tibial baseplate.

If a semi-constrained liner is used, an extension stem must be implanted both on the tibial and on the femoral components.

If a GMK Revision tibial tray is 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 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

Tibial augments are to be screwed 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 PREOPERATIVE PLANNING

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

Using the X-ray images, the surgeon can evaluate bone stock and alignment and fixation of the primary implant. They can also document the joint line position and state of the patella.

Template the X-rays and, if possible, compare the limb undergoing surgery with the healthy one to: estimate the correct alignment, estimate implant size, confirm the joint line position, and assess the need for tibial or femoral augment.

## 2. PRIMARY IMPLANT REMOVAL

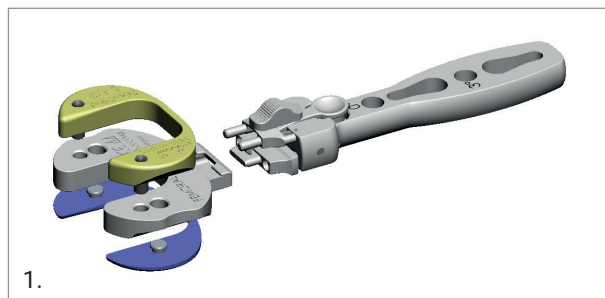
When removing the previous implant to prepare for revision surgery, it is important to preserve as much bone as possible.

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

If needed, use a thicker tibial spacer to fill the flexion gap. Then place the knee into extension and reinsert the spacers which were previously 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.

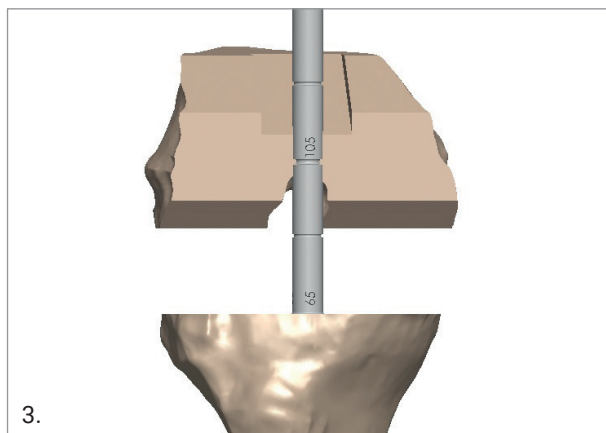
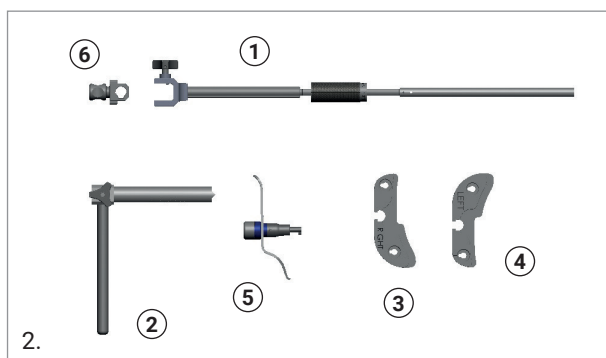


## 4. TIBIAL RESECTION

The Intramedullary alignment system includes:

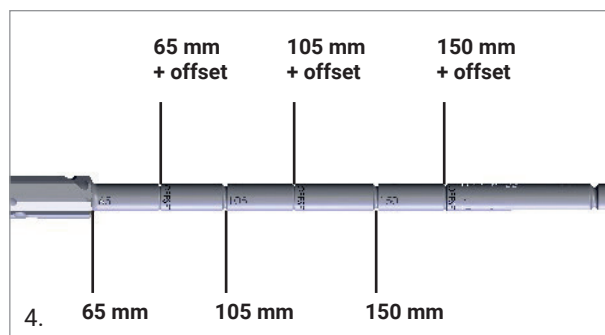
- Revision Intramedullary Guide (1)
- Intramedullary Rod Guide (2)
- Revision Right/Left Tibial Cutting Guide (3) (4)
- 0 mm Tibial Palpator (5)
- Sliding block for revision IM guide (6)

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.



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

**NOTICE:** Different reaming depths are engraved on each reamer. Be careful to align the depth marker with the existing distal resection in order to correctly reach the corresponding depth.

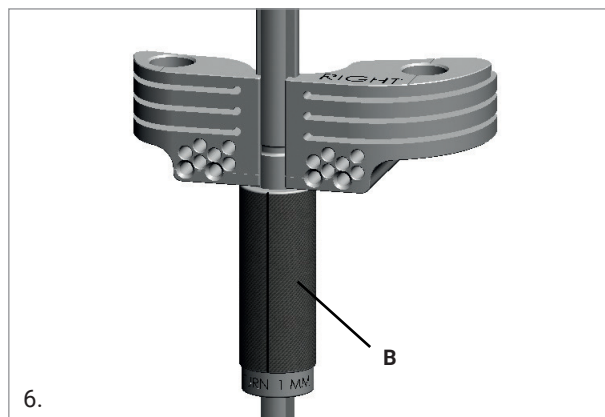


**NOTICE:** The reamer diameter and reaming depth determine the extension stem size to be implanted.

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).



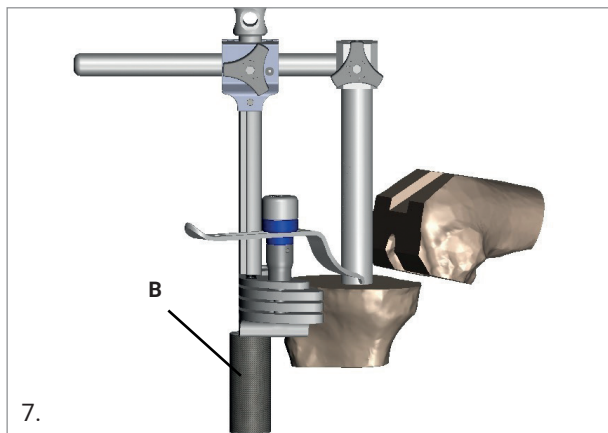
Insert the tibial cutting block for the correct side (left/right) on the threaded part of the revision intramedullary guide and slide it up manually along the rail by turning the micrometric screw (B).



**NOTICE:** If the medial and lateral sides of the existing tibial cut show different wear, 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.

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

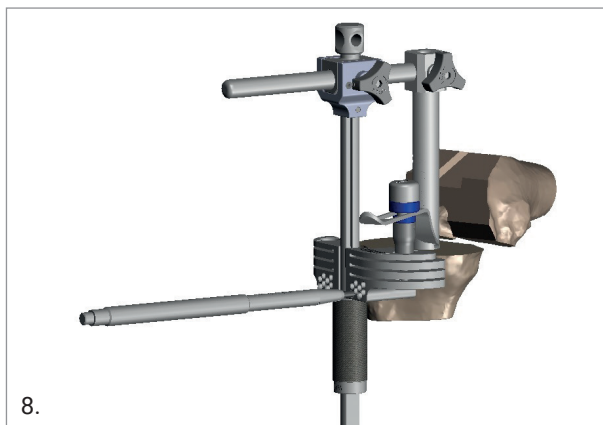
Insert the assembly onto the reamer. To define the cut height, a 0 mm tibial stylus can be assembled on the tibial cutting guide. To adjust the position of the tibial cutting block, turn the micrometric screw (B).



### 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 holes row marked with a line with the help of a pin impactor.



Check the guide position with the help of the angel wings 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, remove the alignment system in the order below:

- 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

Insert the third oblique stabilization pin, and 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 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 tibial augments.

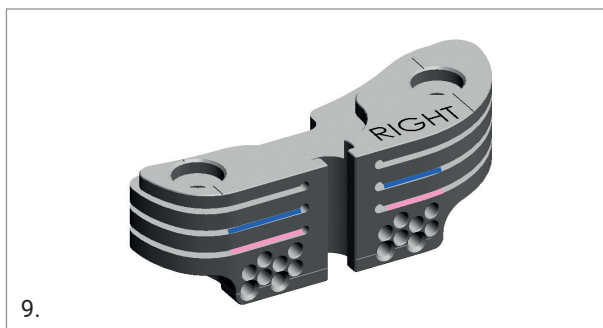
### TIBIAL AUGMENTS

| 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.



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.

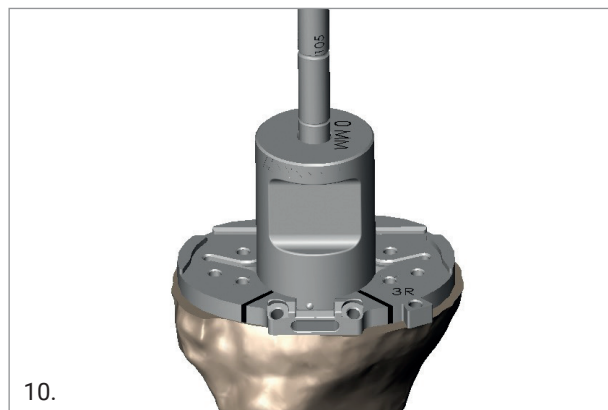
The bushings with 8 mm internal diameter work off the reamer and are designed to be used as centralizers when adjusting the offset on the tibia.

The bushings are available for the tibia in different versions: neutral (i.e. 0 mm), 2, 3, 4 and 5 mm offset.

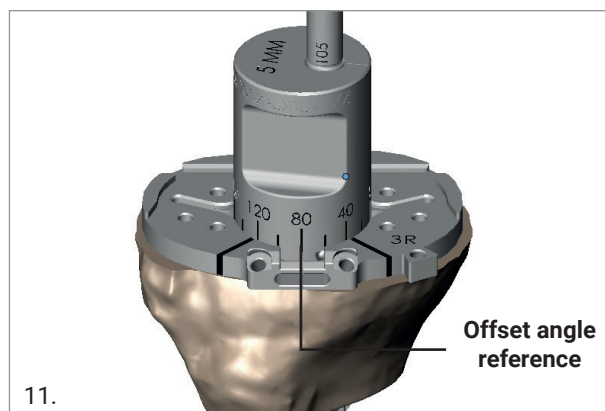
### CAUTION

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

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



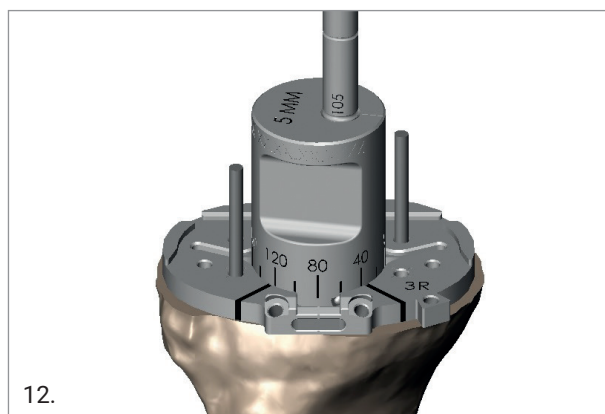
If a tibial offset is needed, replace the 0 mm neutral bushing with the 2, 3, 4 or 5 mm offset bushing and turn the baseplate until the desired position on the cortical rim is obtained.



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°.

**NOTICE:** If needed, 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.



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

Finally, remove the bushing and intramedullary reamer.

## 7. TIBIA FINISHING

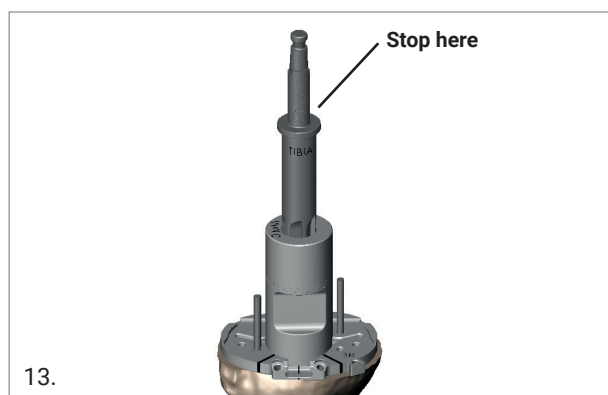
### OPTION

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

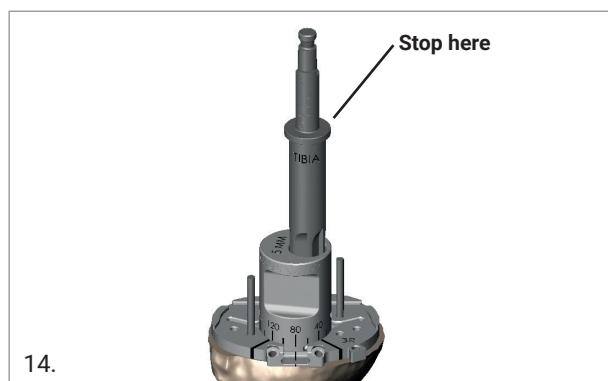
When a 2, 3, 4, 5 mm offset coupler is required for correct placement of the tibial tray, room must be created for the component using the 15.5 mm reamer. Attach the neutral bushing (i.e., 0 mm) onto the fixed tibial baseplate. Using two fingers, hold the bushing firmly and ream with the 15.5 mm reamer.



**NOTICE:** 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 2, 3, 4, 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.

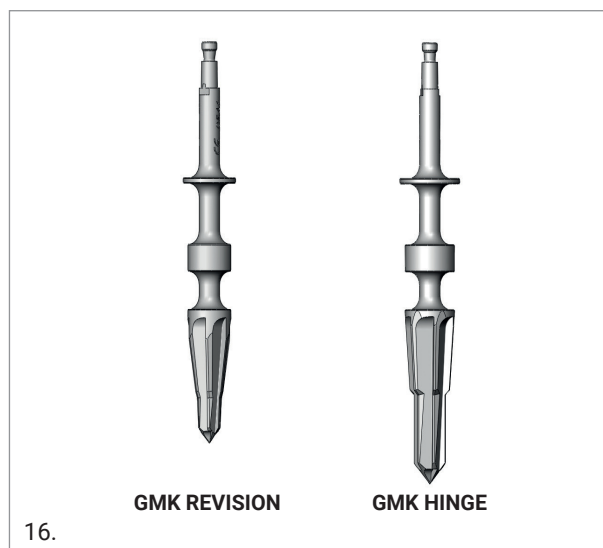
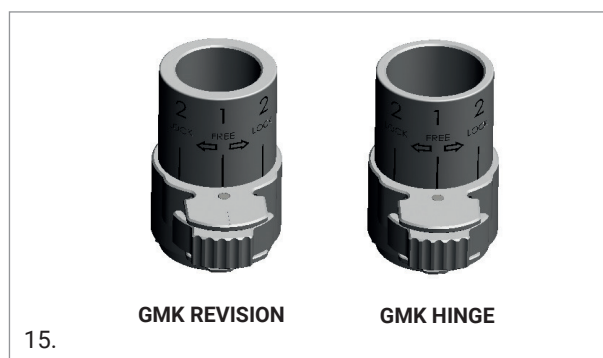


### CAUTION

The rotation of the bushing is important at this stage.

### CAUTION

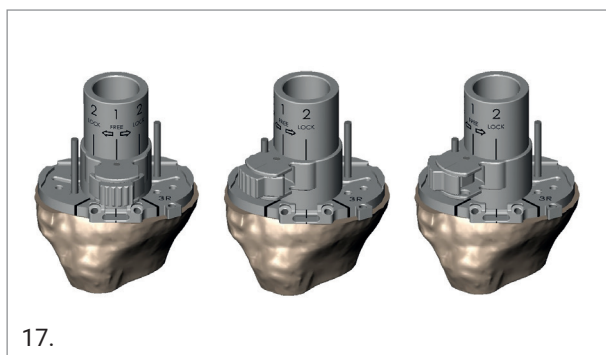
The keel on the GMK Hinge has a larger diameter than the keel of the GMK Revision. To accommodate the difference, a larger keel reamer and reamer guide is provided for the GMK Hinge. Note the description provided on the instruments.



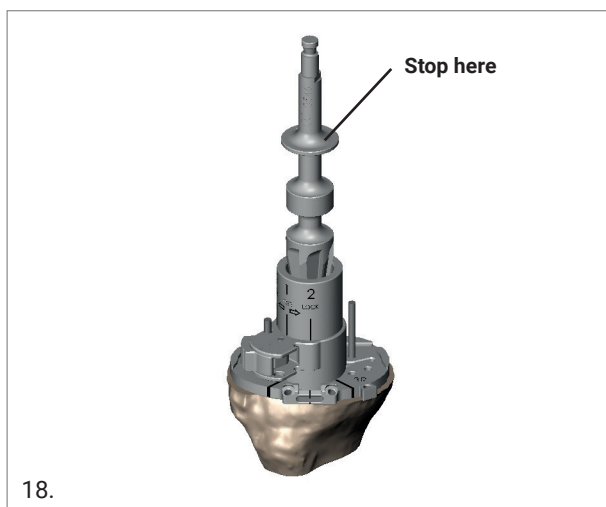
Assemble the reamer guide on the trial base plate following these steps:

- 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 to the step off.



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.

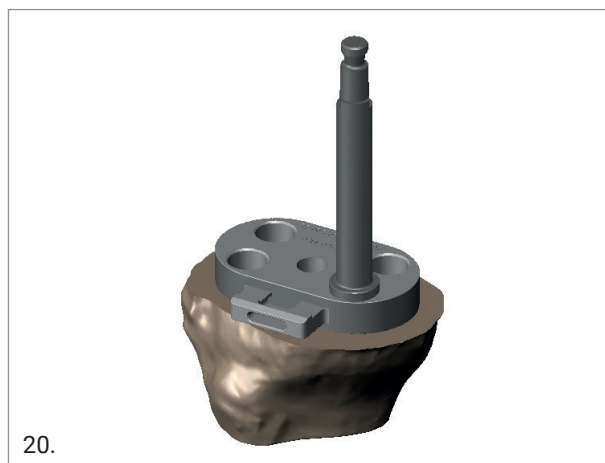


19.

After the keel site has been created, remove the tibial keel punch together with the trial baseplate. Finally, remove 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.

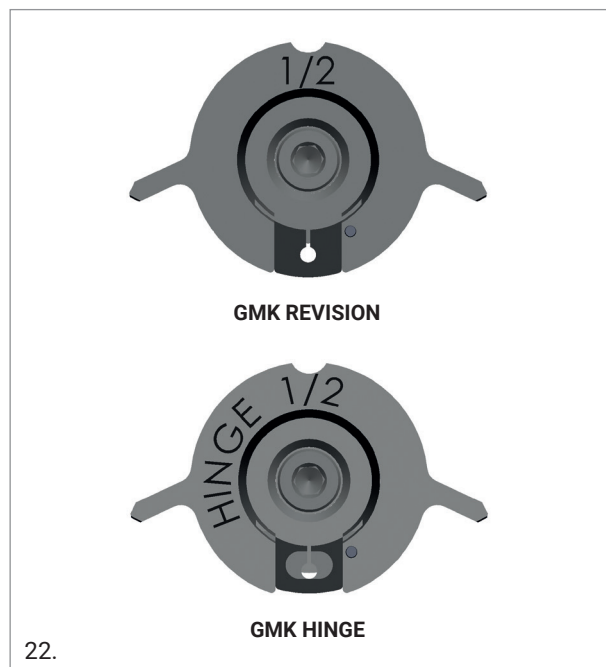
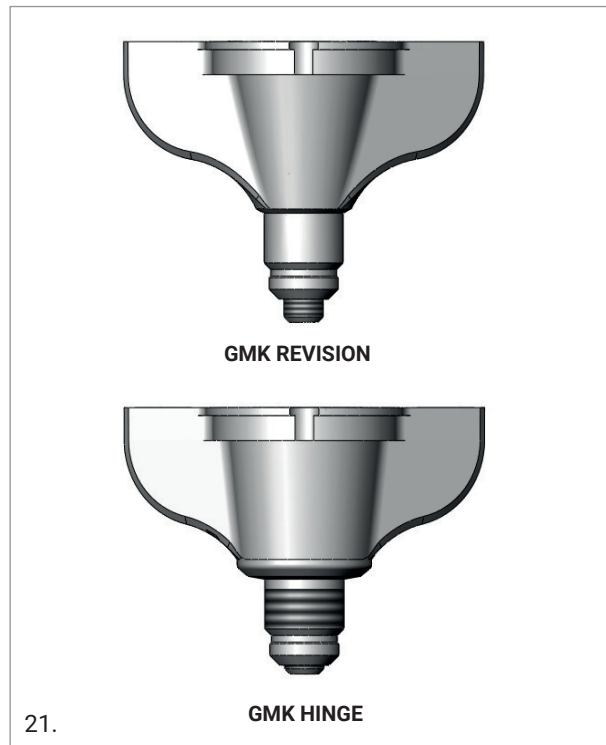


20.

## 8. TRIAL TIBIAL COMPONENT

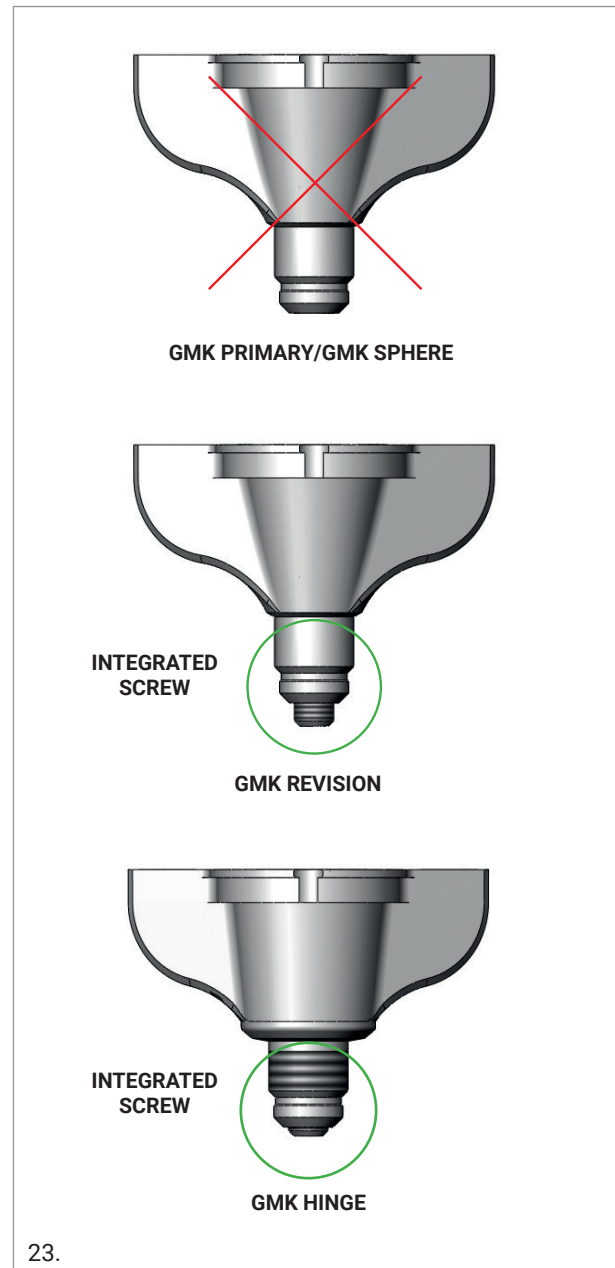
### CAUTION

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



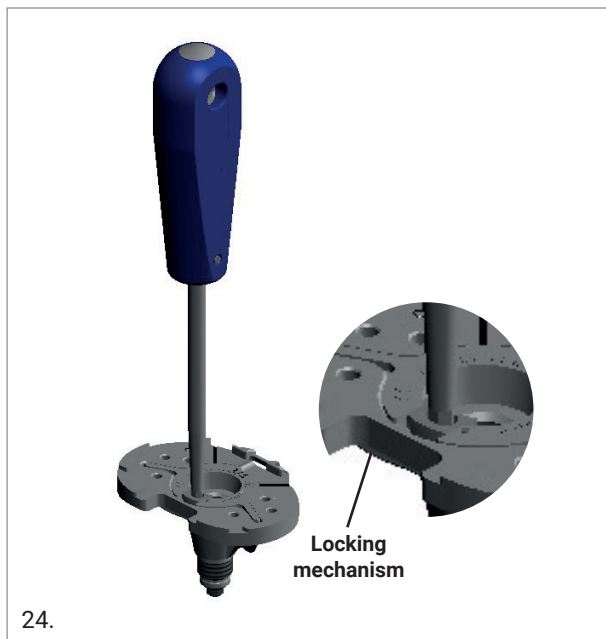
### CAUTION

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.



## 8.1 TIBIA WITHOUT OFFSET

Insert the tibial keel punch into the trial base plate then secure the connection between the tibial keel punch and the trial baseplate by sliding the locking mechanism backward using the screwdriver.



Screw the extension stem of the correct size onto the tibial keel punch.



Screw the impactor handle onto the tibial keel punch and finally impact the assembly on 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.



### 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. 02.07.10.3500-06).

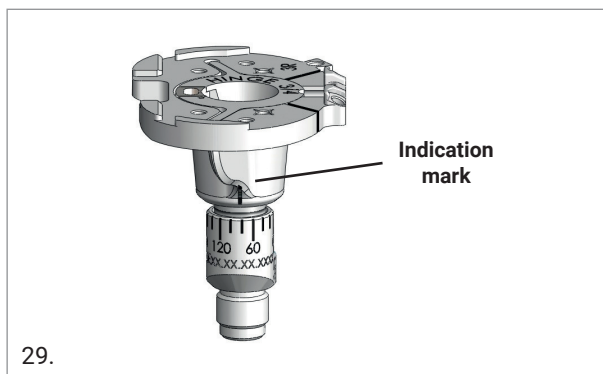
## 8.2 TIBIA WITH OFFSET

Insert the tibial keel punch into the trial base plate then secure the connection between the tibial keel punch and the trial baseplate by sliding the locking mechanism backward using the screwdriver.



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.



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



### CAUTION

Ensure that the offset angle is not altered while screwing.

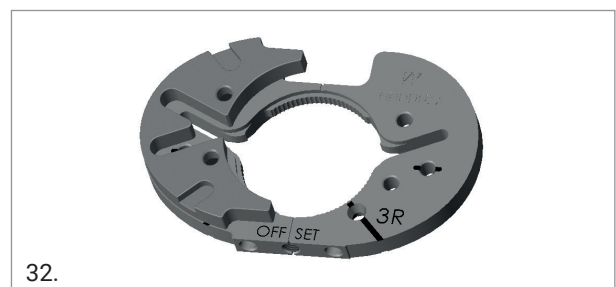
Finally screw the validated extension stem onto the trial offset.



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.



### 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. 02.07.10.3500-06).

## 9. FEMORAL SIZE DEFINITION

Using the femoral templates, verify the size of the femoral component defined during the pre-operative planning.

### OPTION

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

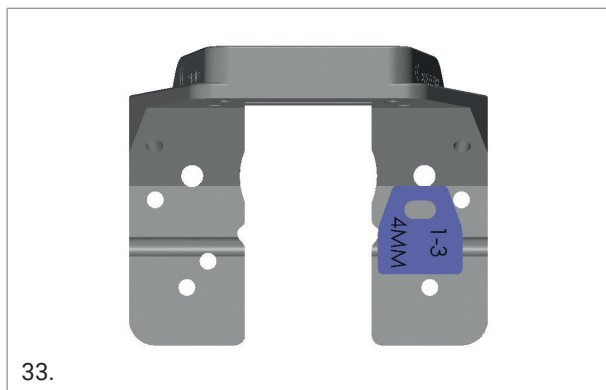
## 10. FEMUR FINISHING

In case of primary surgery or non-compatibility between the existing bone resections and the internal profile of the GMK implant, the femoral resections must be performed. Please refer to Appendix 2.

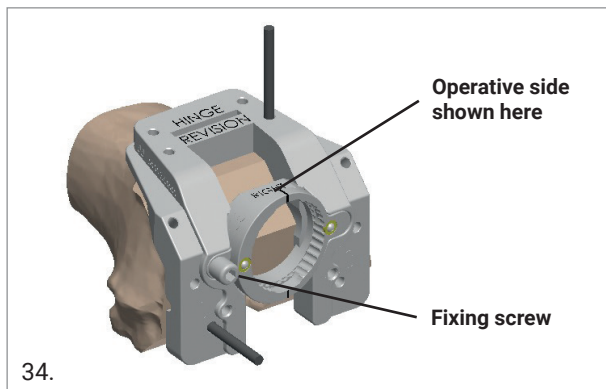
Select the appropriately sized box cutter guide.

### OPTION

In case of bone loss, specific metal augments can be inserted on the distal condyles either on medial, lateral or both sides. Connect the provisional augment to the back of the box cutter guide before positioning it on the bone. Before positioning the box, a freehand cut may be necessary to smooth the distal surface of the femur. Please refer to chapter 14 for augment selection and availability.



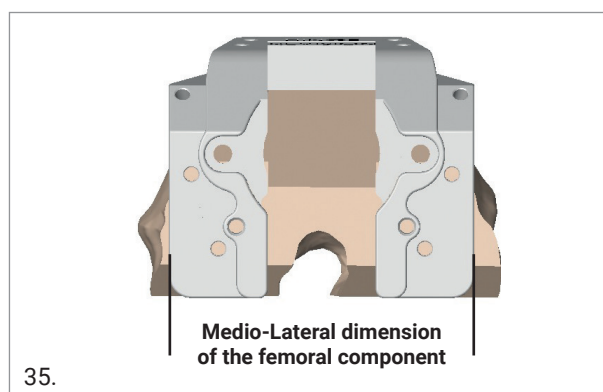
Screw the 6 degrees oriented bushing onto the box cutter guide according to the side operated on (left or right).



Insert the 0 mm offset bushing and slide the assembly onto the reamer.

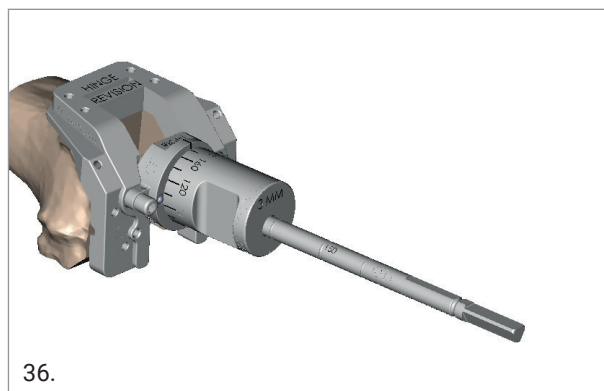
If the box cutter guide properly covers the distal resection, no offset is needed.

The mediolateral dimension and the level of posterior cut are the same in the box cutter guide as well as in the implant.



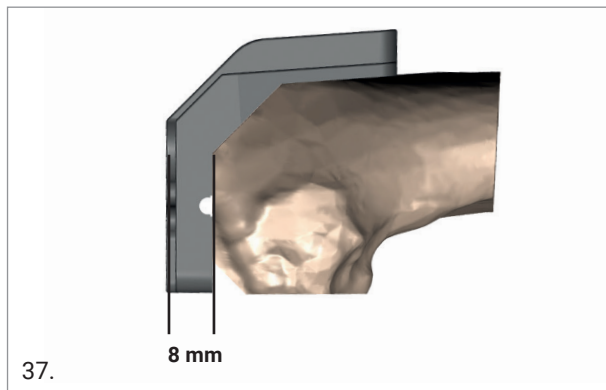
Before positioning the box, a freehand anterior cut may be necessary to smooth the anterior surface of the femur.

If a femoral offset is needed, replace the 0 mm neutral bushing with the 3 mm offset bushing and turn the box cutter guide to find the proper femoral position.

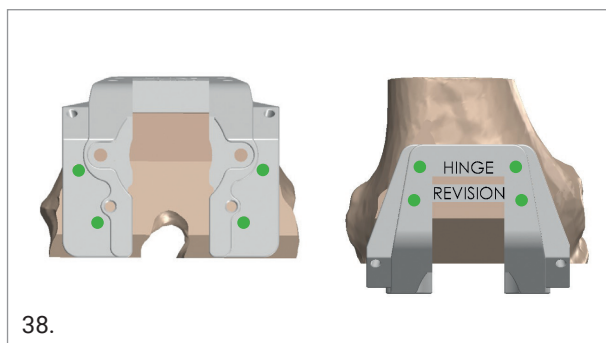




Both the distal portion of the femoral cutting block and the final implant have a thickness of 8 mm.



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



### 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.

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 the 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 femoral box cutter guide. Using two fingers, hold the bushing firmly and ream with the 15.5 mm reamer.

### CAUTION

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



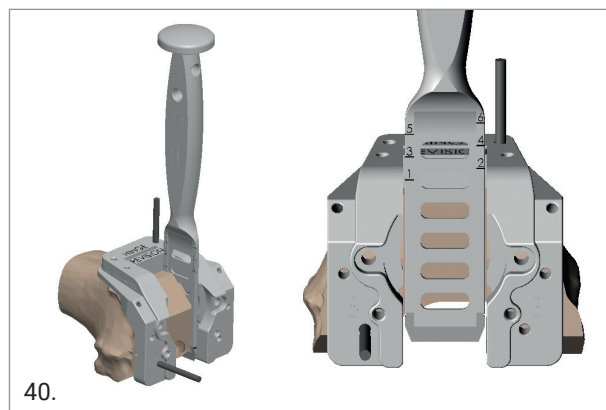
### OPTION

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 femoral box cutter guide. Rotate the bushing until the correct angle is achieved. Using two fingers hold the bushing firmly and ream with the 15.5 mm reamer.

### CAUTION

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

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.



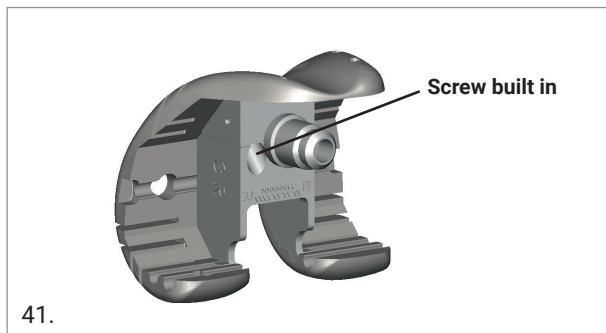
### CAUTION

To finish the femoral box resection use the most distal slot for GMK Revision and the most proximal slot for GMK Hinge (Figure 38).

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

## 11. TRIAL FEMORAL COMPONENT

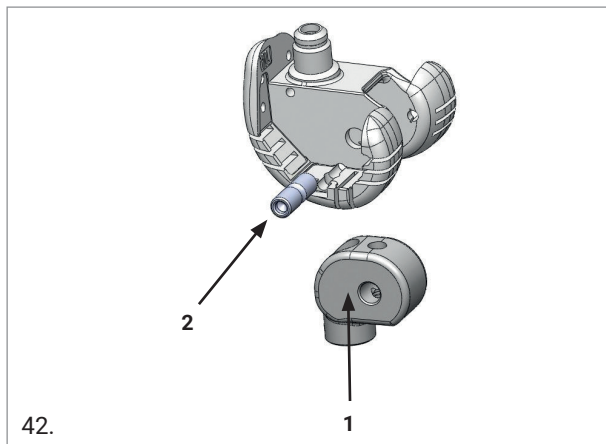
Screw the revision trial box (left or right) onto the trial femoral component.



### OPTION

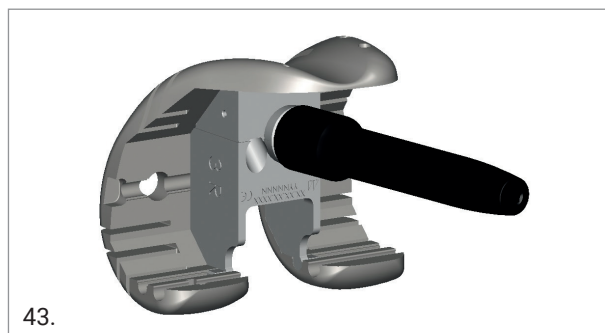
When implanting the posterior-stabilized femoral component, also apply the postero-stabilization shaft onto the trial component.

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



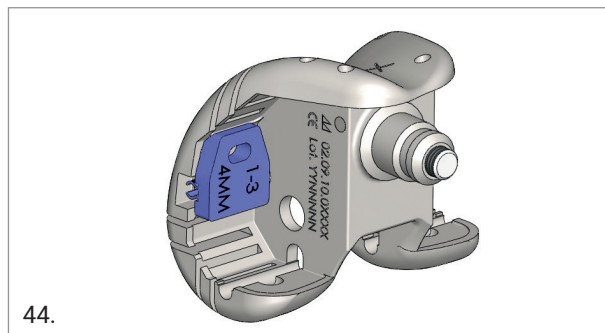
### 11.1 FEMUR WITHOUT OFFSET

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

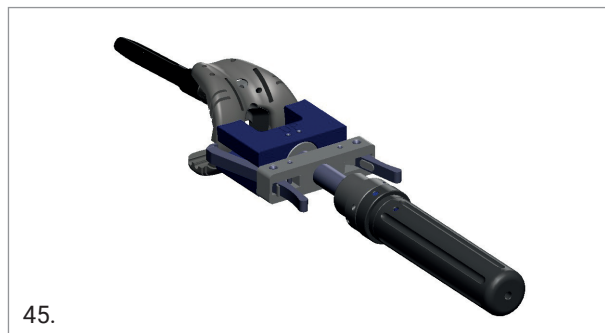


### OPTION

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



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



### CAUTION

If impingement between trial box and the internal rim of the medial condyle occurs during the insertion of trial femoral component insert, enlarge the medial side of the femoral box using an osteotome.

## 11.2 FEMUR WITH OFFSET

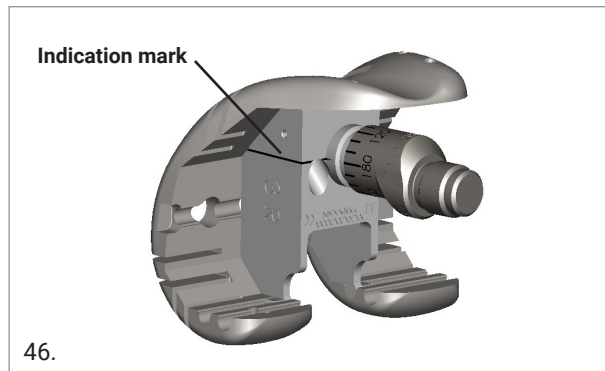
Before impacting the trial femoral component, the offset previously validated must be reproduced.

### CAUTION

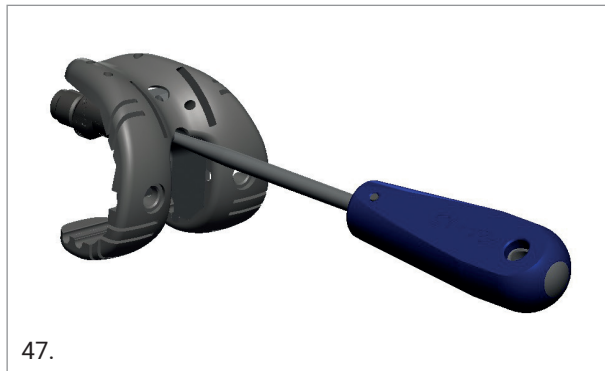
The 5 mm offset is not allowed for the femur.

Clip the validated trial offset on the femoral box, then reproduce the validated angle by aligning the angle markings on the offset coupler to 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 directly below, the angle is set at 180°.



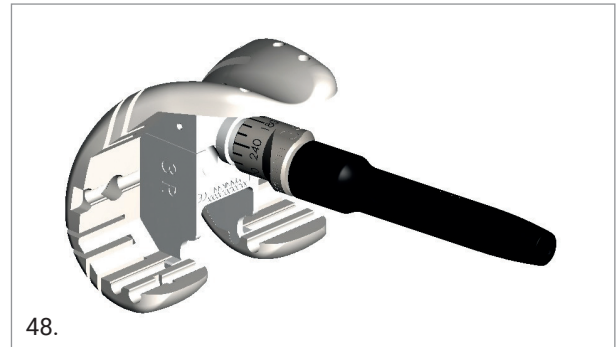
Next, fix the offset angle using the screw included in the trial box.



### CAUTION

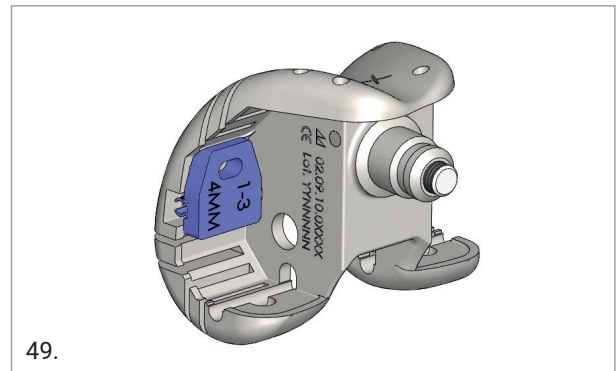
Ensure the offset angle is not altered while screwing.

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

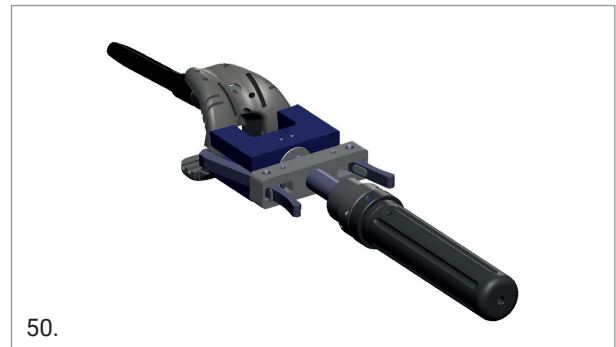


### OPTION

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



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



### CAUTION

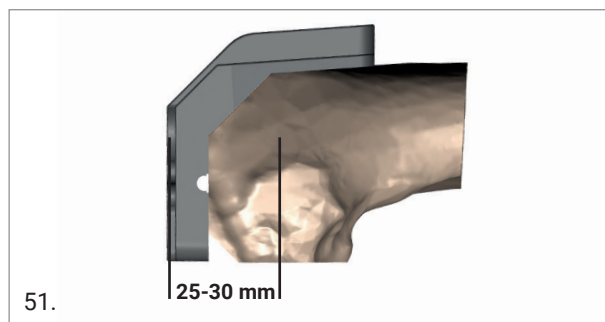
If impingement between trial box and the internal rim of the medial condyle occurs during the insertion of trial femoral component, enlarge the medial side of the femoral box using an osteotome.

## 12. FEMORAL DISTAL AND POSTERIOR AUGMENTS (OPTIONAL)

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

### Distal femoral augments

Since the distal thickness of the femoral box cutting guide matches the distal thickness of the GMK Revision/Hinge femoral component (8 mm), the joint line can be established by measuring the distance between the distal surface of the femoral box and the center of the medial epicondyle (25-30 mm).



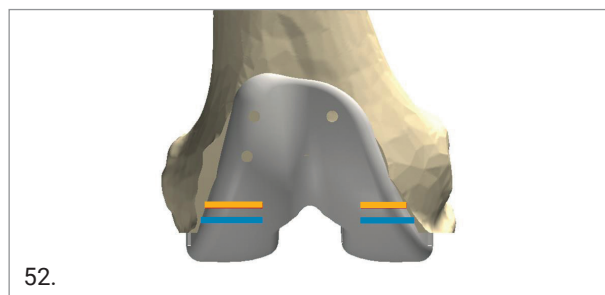
The thickness of the augment must be appropriately chosen to restore the joint line.

The following table summarizes the available distal femoral augments.

### DISTAL FEMORAL AUGMENTS

| 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 cuts for the distal augments can be carried out through dedicated slots on the trial femoral component prior to placing the trial augments onto the femoral trial. The cuts for 12 mm distal augments must be carried out free hand.



— 4 mm distal augment  
— 8 mm distal augment

### CAUTION

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

### Posterior femoral augments

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 5 mm and 10 mm posterior augments can be carried out through dedicated slots on the trial femoral component prior to placing the trial augments onto the femoral trial.



— 5 mm posterior augment  
— 10 mm posterior augment

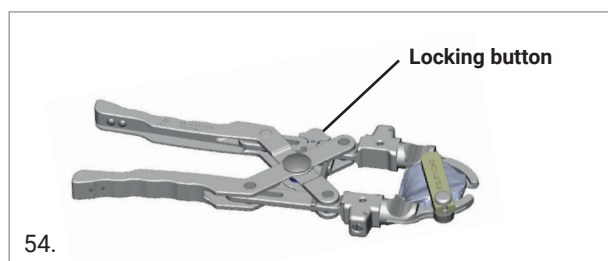
If needed, remove the trial femoral component and connect the provisional distal and posterior augments to it. Then, reposition the component on the femur.

## 13. PATELLA

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

### 13.1 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 using 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 is made between the resection guides and the patella. Lock the clamp with the button provided.



#### CAUTION

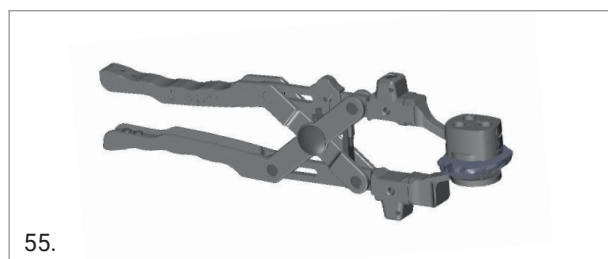
Check that at least 13 mm of bone remains after resection. When revising a resurfacing patella, just refresh the existing cut, then proceed directly with the drilling phase.

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.



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.

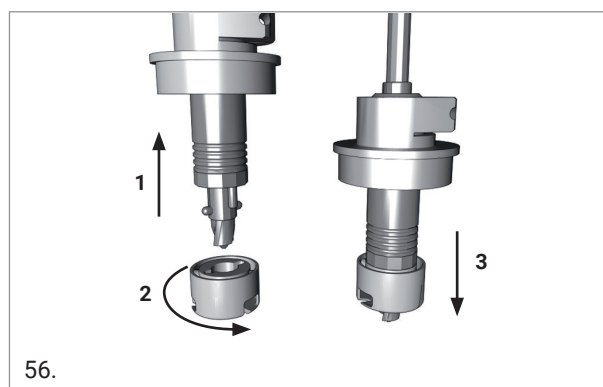
Place the drilling guide on the resected surface of the patella and drill the three holes using the patellar pegs drill.

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

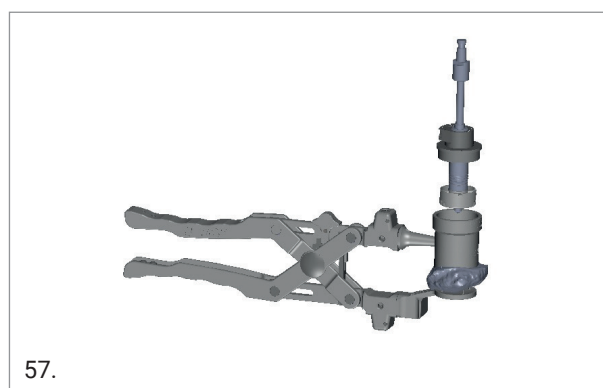
### 13.2 INSET PATELLA

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 suitably sized reamer 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.



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



#### 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.



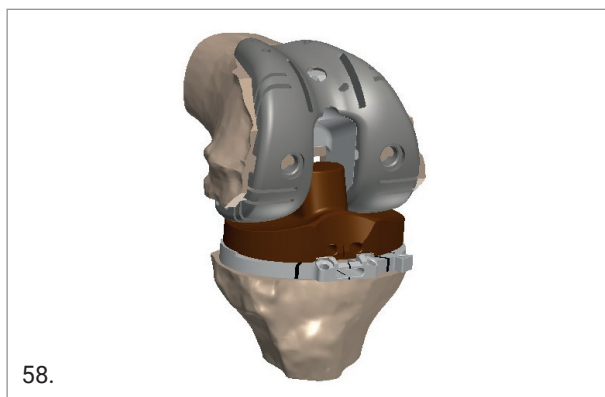
## 14. TRIAL IMPLANT EVALUATION

### 14.1 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.

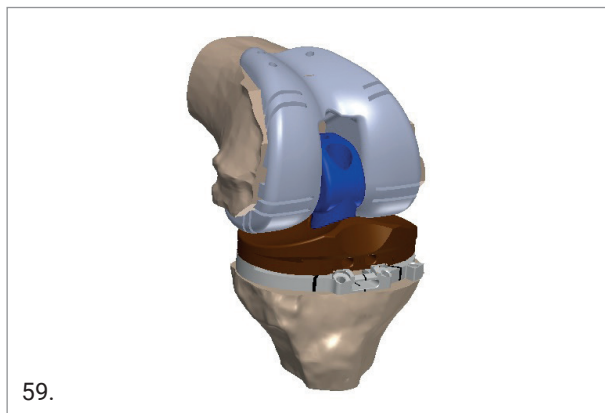
Position the proper trial insert (Semi-Constrained, Postero-Stabilized or Ultra Conguent) of the appropriate size and thickness into the trial baseplate.



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

### 14.2 GMK HINGE

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



#### CAUTION

Please note that plastic yoke housing is larger on the trial relative to the actual implant.

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.

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



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

## 15. FINAL TIBIAL IMPLANT ASSEMBLY

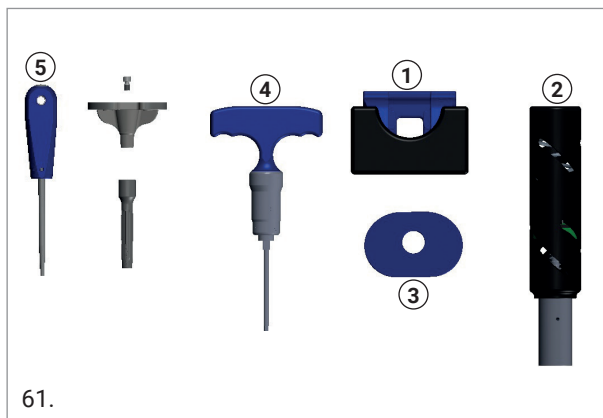
### CAUTION

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

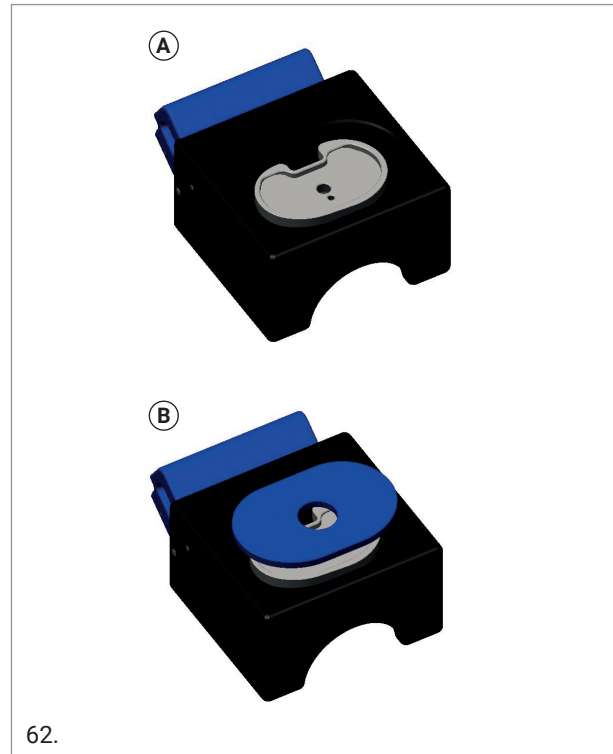
### 15.1 TIBIA WITHOUT OFFSET

The assembly system includes:

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



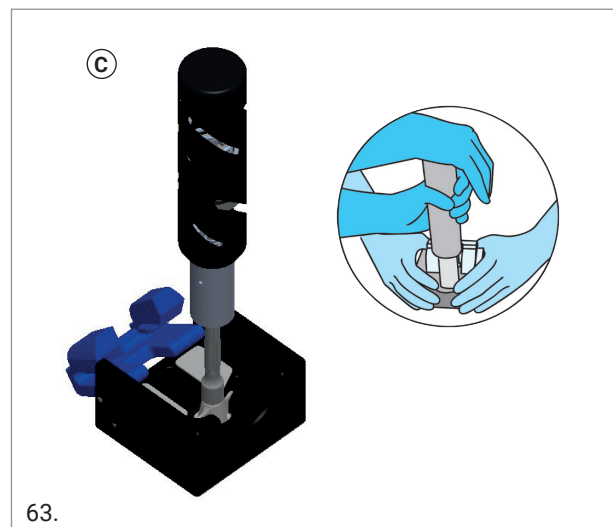
Position the final tibial tray into the dedicated slots on the base for implant assembly (A). Place the bushing for tibial impaction over the tibial tray (B), keep it in position and turn the assembly upside down.



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

### CAUTION

While impacting, use the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).



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.

**NOTICE:** The screw is packaged with the extension stem.

### CAUTION

The correct torque is reached when the torque limiter is released.

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.

### OPTION

**For cemented augments only:** put the bone cement under the tibial baseplate, position the augment onto the tibial component, and press the augment to let the cement come out from the interface. Then put the cement also under the augments. Cement should be added 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 part remains on the articular surface.

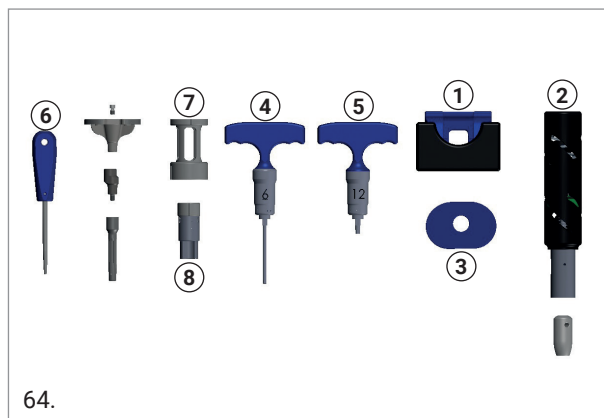
## 15.2 TIBIA WITH OFFSET

### CAUTION

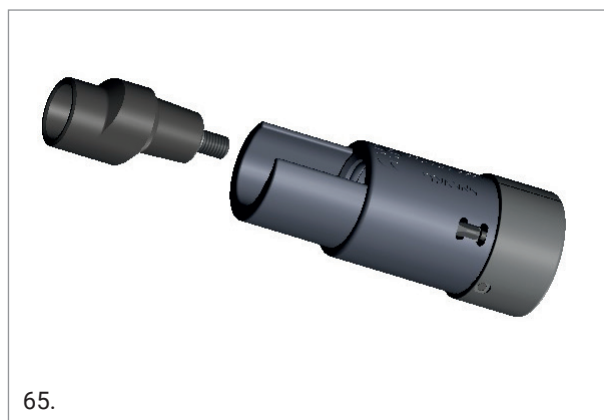
If both a tibial offset and tibial augments must be used, it is mandatory to assemble the final offset and the extension stem before the augments.

The assembly system includes:

- Base for implant assembly (1)
- Assembly 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)



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



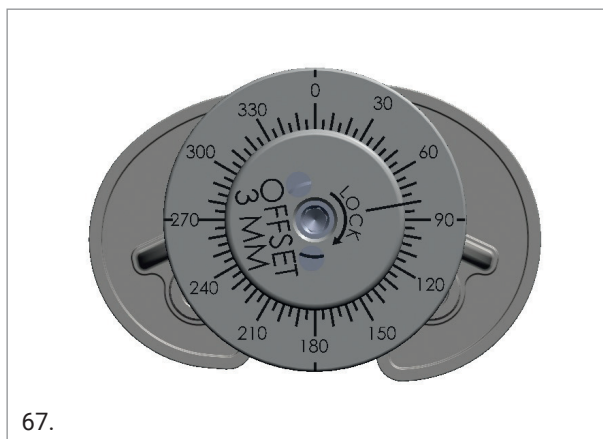
Position the tibial offset reference onto the final tibial component. The tibial fins allow for only one orientation. Then, insert the offset holder assembled with the offset into the tibial offset reference.



### 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.

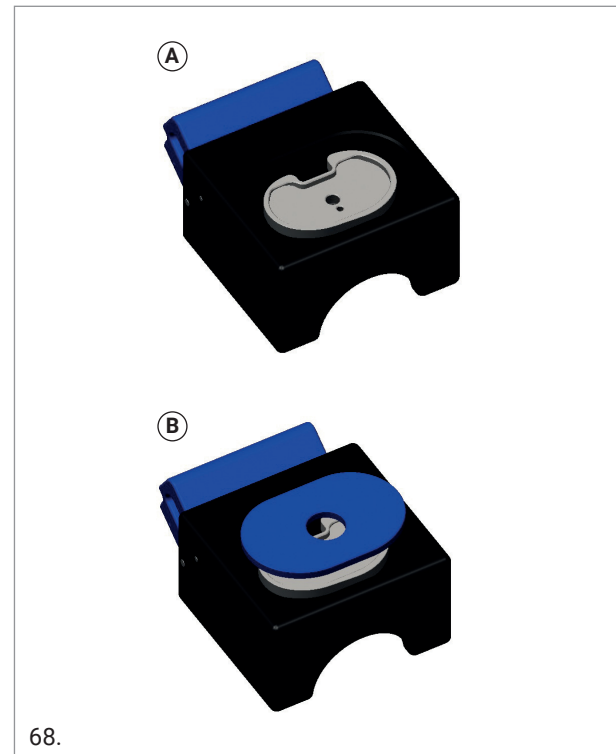


Remove the offset system from the tibial component.

### CAUTION

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

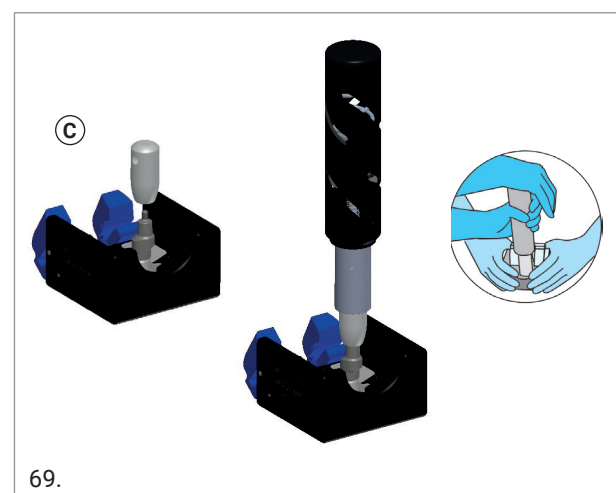
Position the final tibial tray into the dedicated slots on the base for implant assembly (A). Lean the bushing for tibial impactation over the tibial tray (B), keep it in position and rotate the assembly upside down.



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

### CAUTION

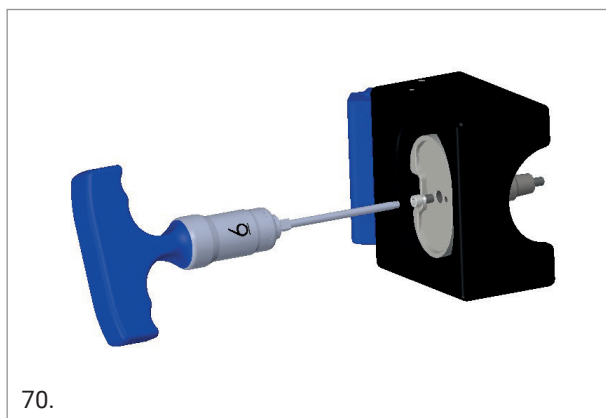
While impacting, make sure to be using the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).



**NOTICE:** Be aware of the noise generated by the impaction stroke.

Unscrew the offset adapter for assembly hammer. With the tibial implant in place, rotate the base 90° and insert the bushing. Tighten the fixing screw on the offset coupler with the 6 N·m torque wrench.

**NOTICE:** The screw is packaged with the extension stem.



### CAUTION

When the correct torque is reached, the screwdriver clicks.

With the tibial implant in place, rotate the base 90° and insert the bushing. Screw the extension stem onto the offset coupler, then tighten with the 12 N·m torque wrench.



### 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.



### OPTION

**For cemented augments only:** put the bone cement under the tibial baseplate, position the augment onto the tibial component, and press the augment to let the cement come out from the interface. Then put the cement also under the augments. Cement should be added 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 onto the tibia and carefully clear the extruded cement from the bone, ensuring that no cement remains on the articular surface.



## 16. FINAL FEMORAL IMPLANT ASSEMBLY

### 16.1 FEMUR WITHOUT OFFSET

#### CAUTION

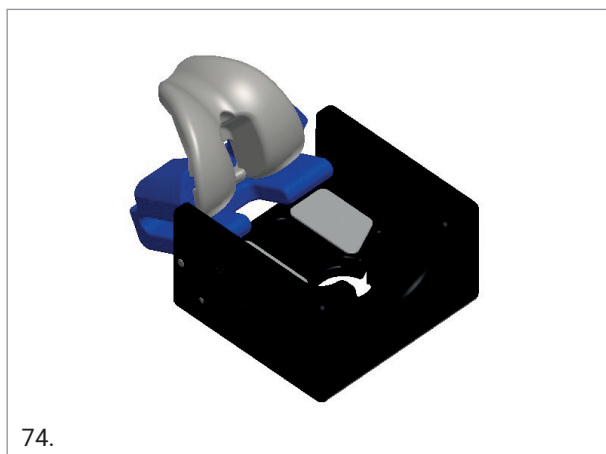
If femoral augments are to be used, it is mandatory to assemble the extension stem before the augments.

The assembly system includes :

- Base for implant assembly (1)
- Assembly hammer (2)
- 6 N-m torque wrench (3)
- Manual screwdriver (4)



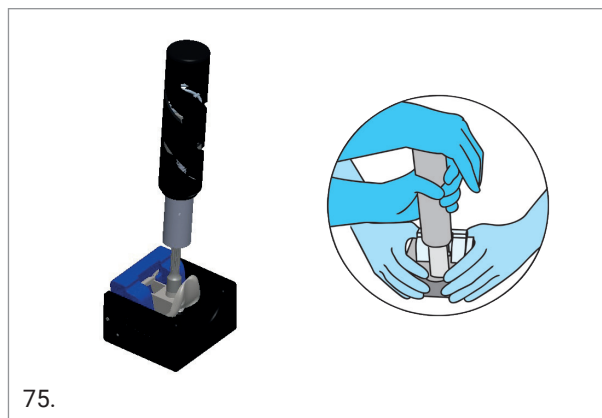
Open the blue mobile part of the base and insert the posterior condyles of the final femoral component into the dedicated slots, then close the assembly towards the base.



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

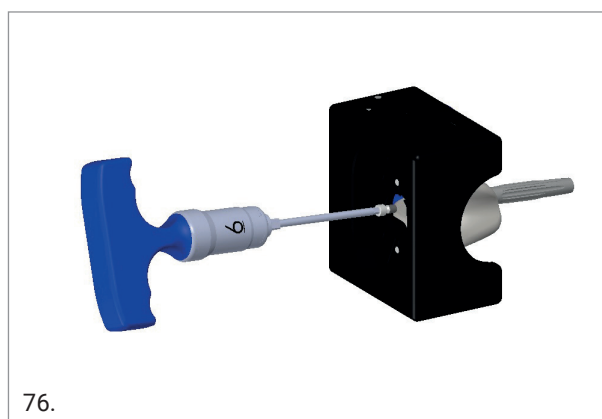
#### CAUTION

While impacting, use the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).



**NOTICE:** Be aware of the noise generated by the impactation stroke.

With the femoral implant in place, rotate the base 90° and use the 6 Nm torque wrench to tighten the fixing screw on the stem.



**NOTICE:** 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, onto the posterior condyle of the implant. Then engage the screw with the ball head hexagonal screwdriver provided.

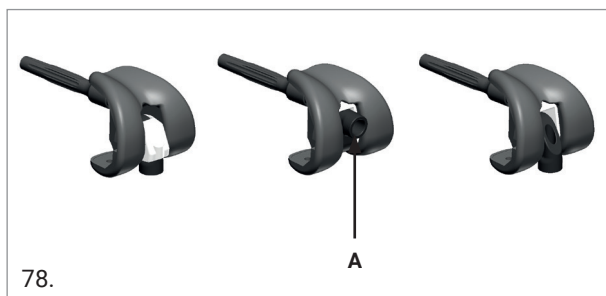
Finally, tighten the connection with the manual screwdriver. Once all posterior augments are in place, proceed to position the distal augment through screw fixation, onto the distal condyle of the implant. Engage the screw with the manual screwdriver.



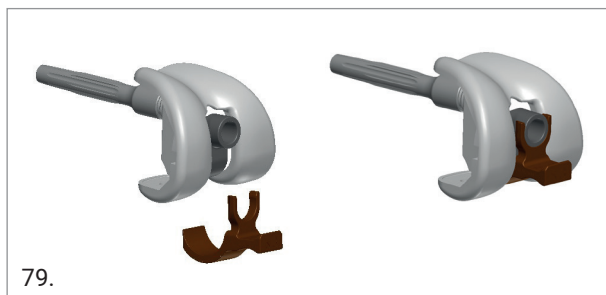
Finally, impact the prosthetic components on the femur and carefully clear the extruded cement from the bone, ensuring that no cement part remains on the articular surface.

### OPTION

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



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



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.

## 16.2 FEMUR WITH OFFSET (3 MM OFFSET OPTION)

### CAUTION

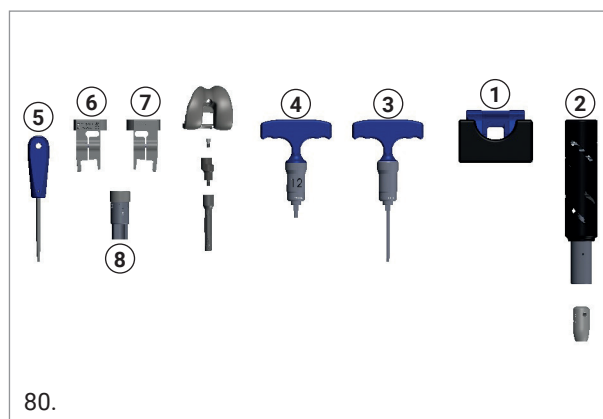
The 5 mm offset is not allowed for the femur.

### CAUTION

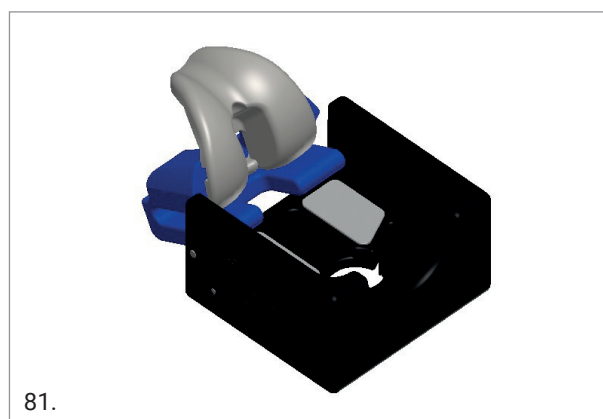
If both a femoral offset coupler and femoral augments must be used, it is mandatory to assemble the final offset and the extension stem before the augments.

The assembly system includes:

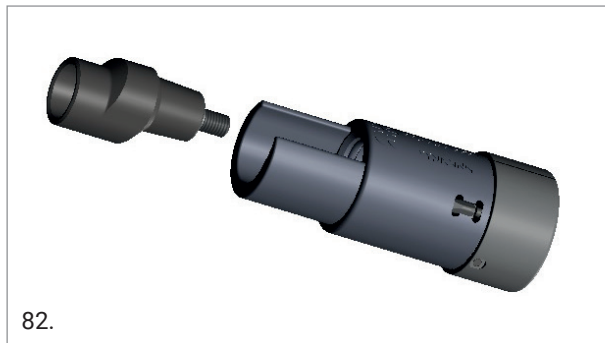
- Base for implant assembly (1)
- Assembly hammer (2)
- 6 N·m torque wrench (3)
- 12 N·m torque limiter (4)
- Manual screwdriver (5)
- Femoral offset reference (left or right) (6, 7)
- Offset holder (8)



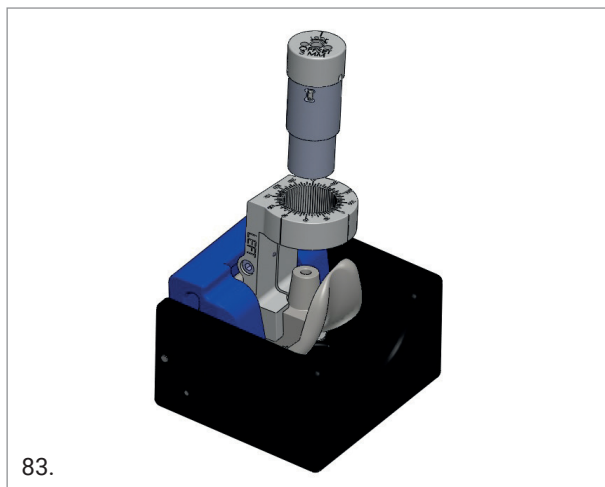
Open the blue mobile part of the base and insert the posterior condyles of the final femoral component into the dedicated slots, then close the assembly toward the base.



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



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.

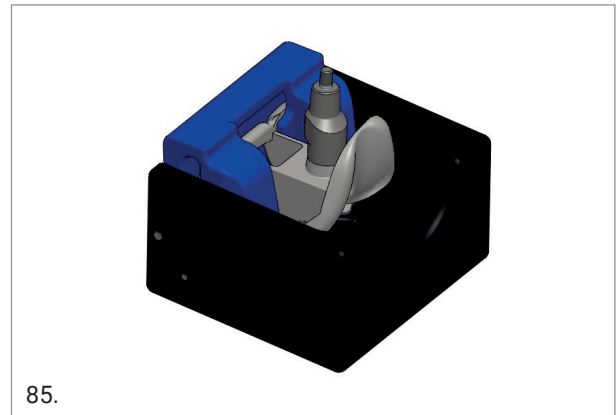


**CAUTION**  
Do not drop the offset holder onto the implant taper; this will prevent any premature offset engagement.

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



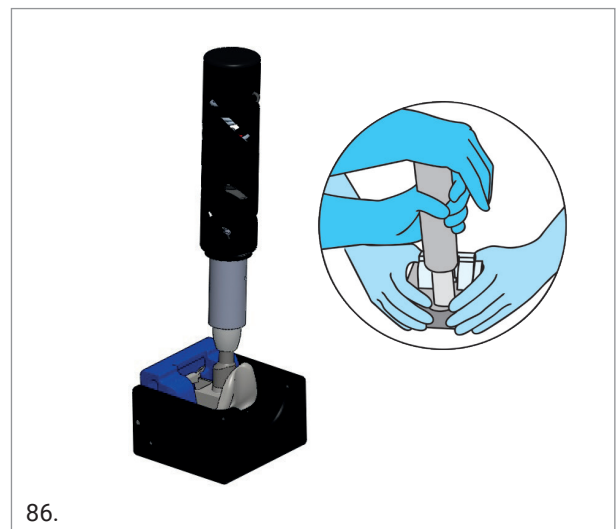
Remove the offset system from the femoral component.



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

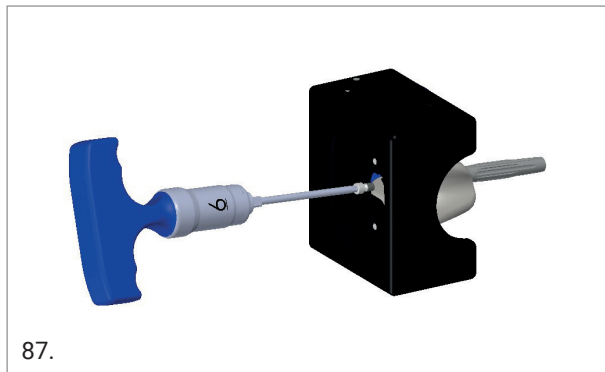
Screw the offset adapter for assembly hammer onto the offset, then impact the offset coupler by using the assembling hammer.

**CAUTION**  
While impacting, use the most stable side of the surgical table. Have an assistant hold the base securely while assembling the implant (C).



**NOTICE:** Be aware of the noise generated by the impactation stroke.

Unscrew the offset adapter for assembly hammer. With the femoral implant in place, rotate the base 90° and use the 6 Nm torque wrench to tighten the fixing screw on the offset coupler.



87.

**NOTICE:** The screw is packaged with the extension stem.

### CAUTION

When the correct torque is reached, the screwdriver clicks.

With the implant in place, rotate the base 90° again. 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.



88.

### 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, 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, use a screw to position the distal augment onto the distal condyle of the implant. Fixate the screw using the manual screwdriver.

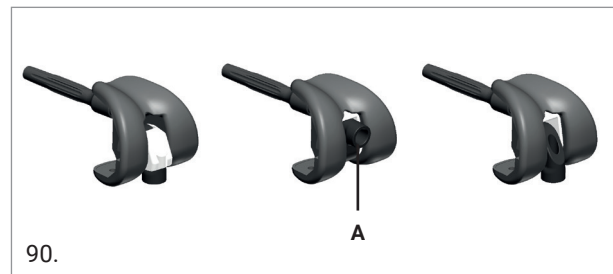


89.

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.

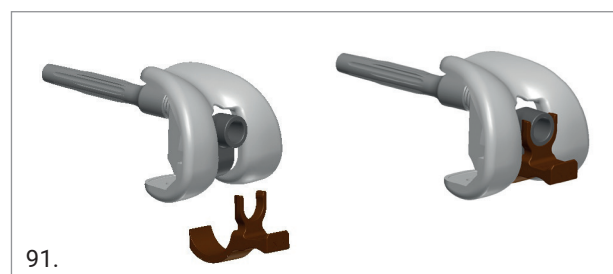
### OPTION

**For GMK HINGE only:** When implanting GMK Hinge, the polyethylene bushing is initially loose to allow 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).



90.

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



91.

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

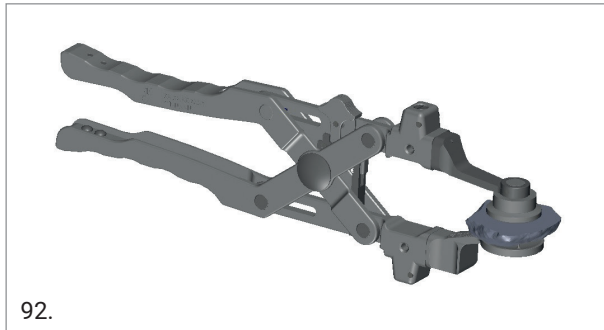
Once the cement has cured and adequately hardened, the hinge protection can be removed.

## 17. 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.



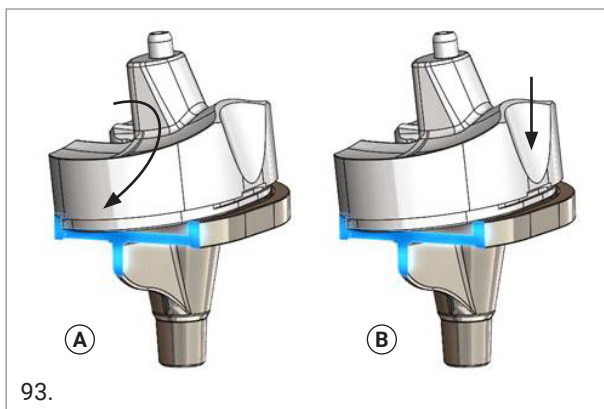
### 17.1 GMK REVISION

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

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

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)



### 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

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.

## 17.2 GMK HINGE

Once both femoral and tibial components have been cemented to 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.

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

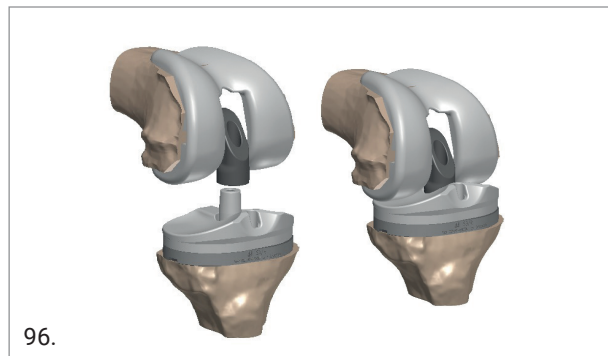
### WARNING

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



Insert the hinge post extension (a.k.a. yoke) into the tibial tray. The tapered extremity must face upwards. Then reduce the hinge-post mechanism: no huge distraction of the joint is required.

**NOTICE:** The hinge post extension (a.k.a. yoke) is packaged with the insert and it is inlay thickness-specific.

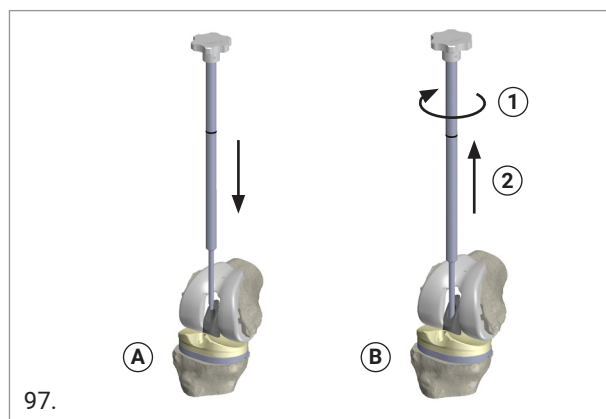


### OPTION

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.



### 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.

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



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

## 18. SELECTION OF THE PROSTHETIC COMPONENTS - SIZE MATCHING

### 18.1 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 a revision extension stem.

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

| GMK PRIMARY AND REVISION<br>FIXED TIBIAL TRAY*** | FIXED TIBIAL INSERT (UC, PS, SC) |   |   |   |   |   |   |
|--|----------------------------------|---|---|---|---|---|---|
|  | SIZE                             | 1 | 2 | 3 | 4 | 5 | 6 |
|  | 1/1+                             | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
|  | 2/2+                             | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
|  | 3/3+                             | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
|  | T3i4/<br>T3+i4*                  | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ |
|  | 4/4+                             | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ |
|  | T4i3/<br>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<br>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<br>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<br>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.



## 18.2 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 a revision 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 5).

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

**Table 5:** GMK Hinge femoral and tibial components size matching

## 18.3 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 a revision extension stem (Table 6).

| OFFSET COUPLER | OFFSET | GMK REVISION |       | GMK HINGE |       |
|----------------|--------|--------------|-------|-----------|-------|
|                |        | TIBIA        | FEMUR | TIBIA     | FEMUR |
| 3 mm           | 3 mm   | ✓            | ✓     | ✓         | ✓     |
| 5 mm           | 5 mm   | ✓            | ✗     | ✓         | ✗     |

**Table 6:** 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 7).

| POSTERIOR AUGMENTS | THICKNESS | DISTAL AUGMENTS |      |       |
|--------------------|-----------|-----------------|------|-------|
|                    |           | 4 mm            | 8 mm | 12 mm |
| 5 mm               | 5 mm      | ✓               | ✓    | ✓     |
| 10 mm              | 10 mm     | ✓               | ✓    | ✗     |

**Table 7:** 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.

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

\* Only for GMK Revision

**Table 8:** 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 revision 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.

## 18.4 REVISION OPTIONS WITH GMK PRIMARY AND SPHERE

### CAUTION

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

✓ = 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 9.

|  | SIZE             | GMK SPHERE FIXED TIBIAL INSERT (FLEX, CR) |   |   |   |   |   |
|--|------------------|---|---|---|---|---|---|
|  |                  | 1   | 2 | 3 | 4 | 5 | 6 |
| GMK PRIMARY AND REVISION<br>FIXED TIBIAL TRAY*** | 1/1+             | ✓   | ✗ | ✗ | ✗ | ✗ | ✗ |
|  | 2/2+             | ✗   | ✓ | ✗ | ✗ | ✗ | ✗ |
|  | 3/3+             | ✗   | ✗ | ✓ | ✗ | ✗ | ✗ |
|  | T3i4/<br>T3+i4*  | ✗   | ✗ | ✗ | ✓ | ✗ | ✗ |
|  | 4/4+             | ✗   | ✗ | ✗ | ✓ | ✗ | ✗ |
|  | T4i3/<br>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 9:** 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 10.

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

**Table 10:** 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 11.

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

**Table 11:** 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 12.

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

**Table 12:** Matching capabilities for GMK Mobile tibial trays and GMK Mobile tibial inserts

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 13).

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

**Table 13:** 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.

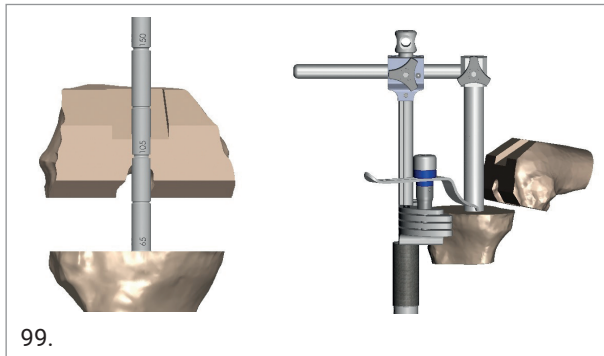
No limitations exist for combining extension stems and offset with GMK Fixed/Mobile and Revision tibial trays. Every patellar component size matches every femoral component size.

### CAUTION

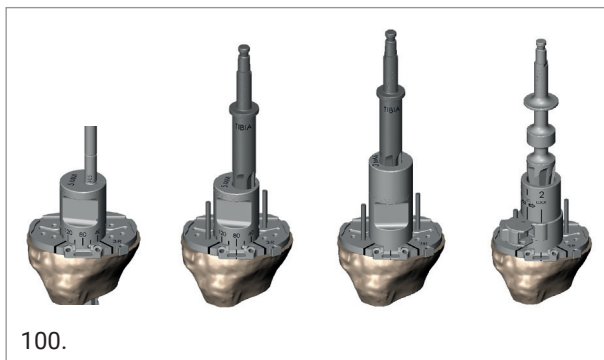
30 mm and 65 mm primary tibial extension stems (ref. nos: 02.07.F11030/ 02.07.F11066) CANNOT be implanted with tibial augments, offset couplers, GMK Revision femoral components, GMK Primary/Revision tibial tray with Semi-Constrained inserts and GMK Hinge femoral/tibial components.

## 19. APPENDIX 1 QUICK REFERENCE GUIDE

### TIBIAL CUT



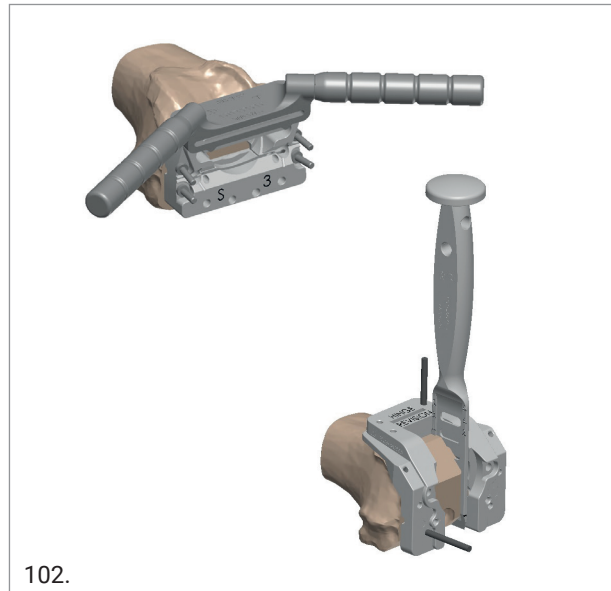
### TIBIAL OFFSET AND FINISHING



### TRIAL TIBIAL IMPLANT



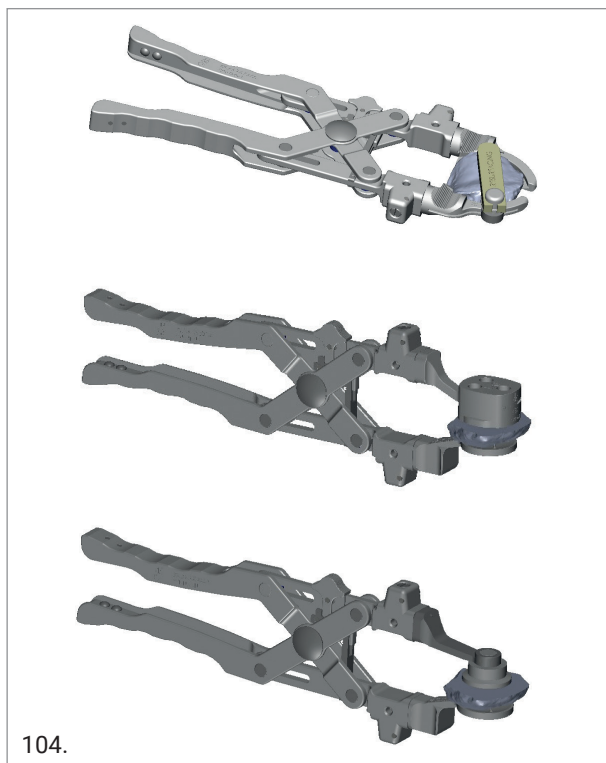
### FEMUR FINISHING



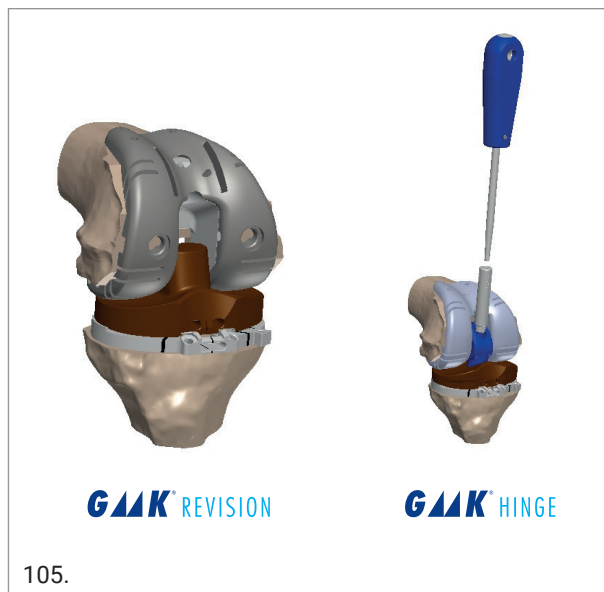
### TRIAL FEMORAL IMPLANT



## RESURFACING PATELLA



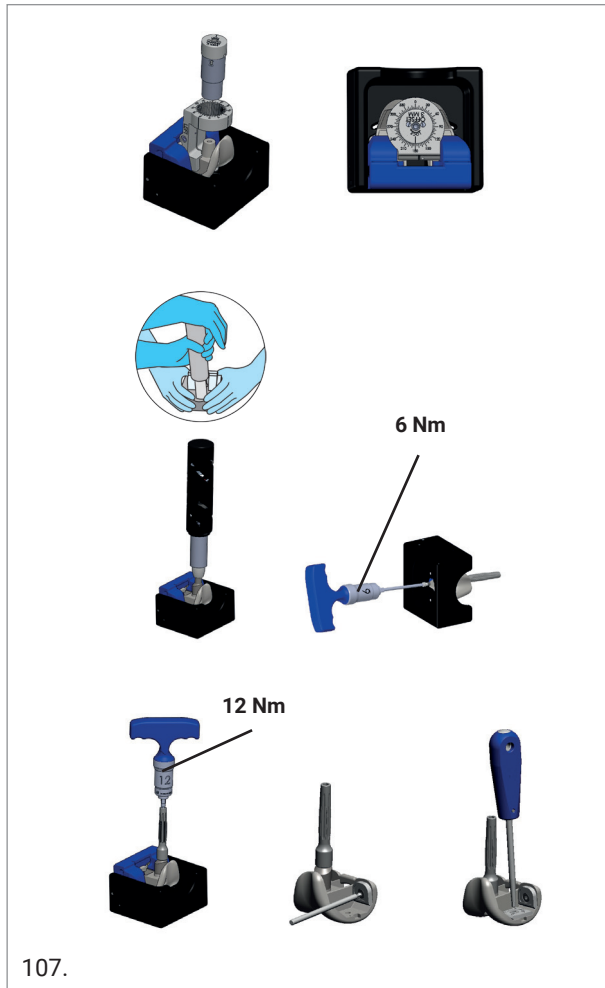
## TRIAL REDUCTION



## FINAL TIBIAL IMPLANT ASSEMBLY



## FINAL FEMORAL IMPLANT ASSEMBLY



## FINAL REDUCTION



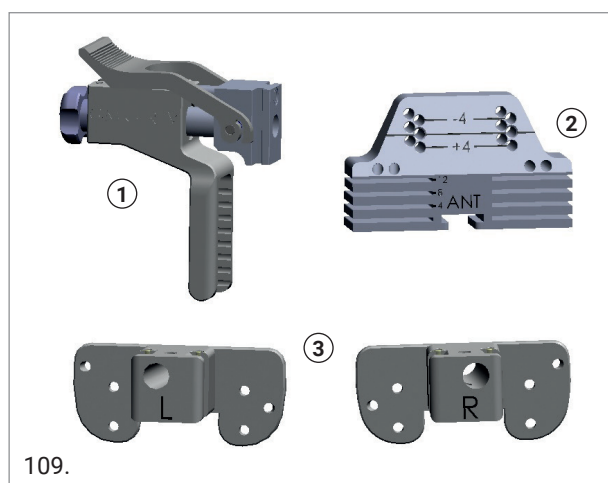
## 20. APPENDIX 2 DISTAL CUT, ANTERIOR CUT, POSTERIOR CUT AND CHAMFERS

In case of pre-existing distal resection, this step can be skipped. A freehand cut may be necessary to smooth the distal surface of the femur.

### 20.1 FEMORAL DISTAL RESECTION

The system for the femoral distal cut consists of the following components:

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

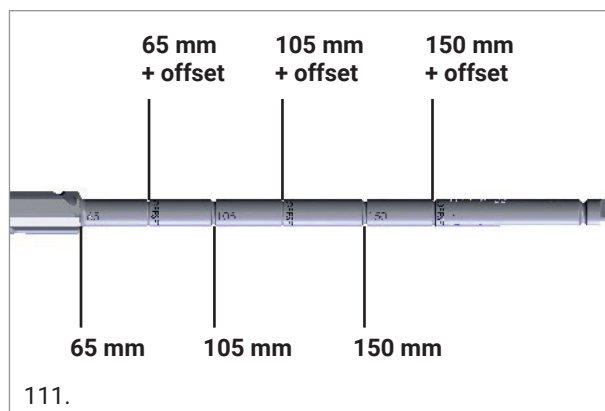


Open the intramedullary canal using the 9 mm drill mounted on a motor. Connect the 9 mm safe guiding reamer to the dedicated T-handle and manually ream the femoral intramedullary canal.

Different reamer diameters are available to reach the greatest stability into the canal.

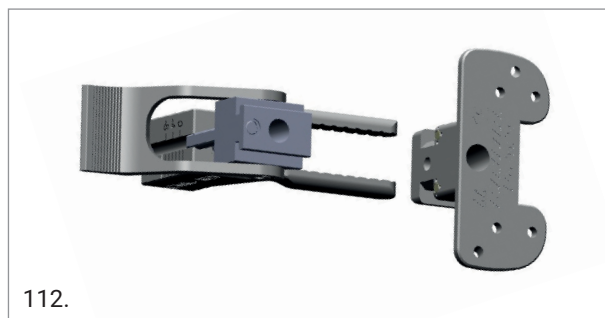


**NOTICE:** Different reaming depths are engraved on each reamer. Be careful to align the depth marker to the existing distal resection in order to correctly reach the corresponding depth.



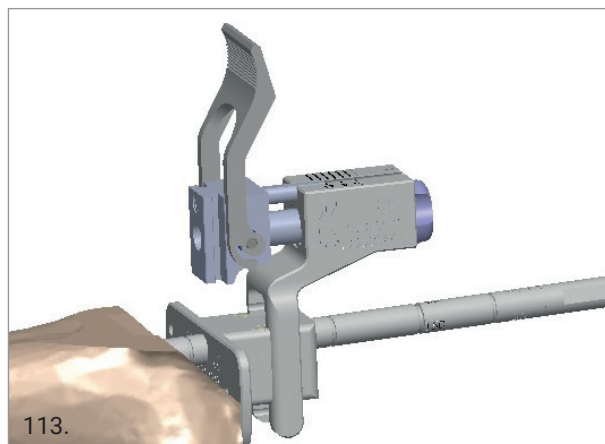
**NOTICE:** Reamer diameter and reaming depth determine the extension stem size to be implanted.

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.



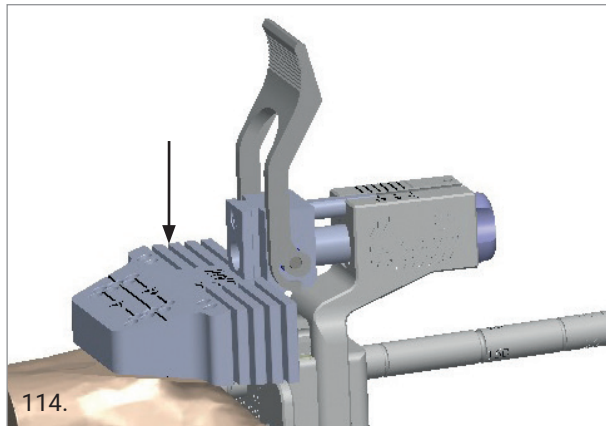
Next, slide the assembly onto the reamer.

This system sets the distal cut at 6 degrees of inclination with respect to the intramedullary axis.

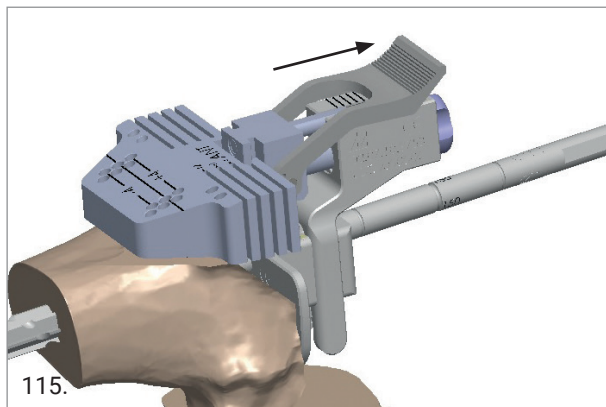




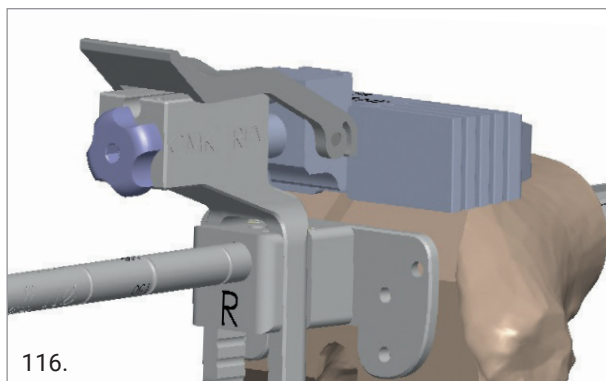
Slide the distal cutting block on the plate located on the micrometric distal cut positioner.



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

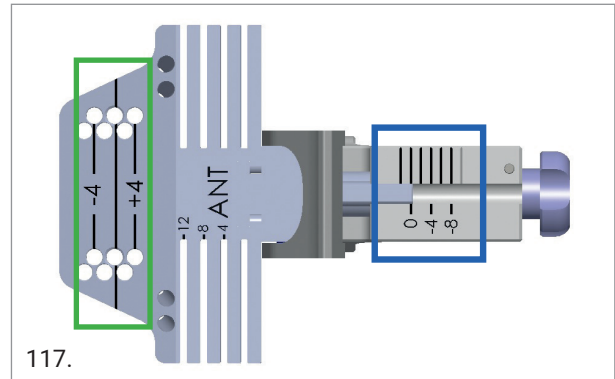


Adjust the distal cutting block position using the micrometric screw. Turning the screw clockwise, the distal cutting block moves more distal.



Available positions allowed by the micrometric screw are from + 2 mm to - 10 mm (red 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).



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.

### OPTION

In case of bone loss, specific metal augments (4 mm / 8 mm / 12 mm thickness) can be inserted on the distal condyles, either on the medial or lateral side, or both. The corresponding cut can be performed through the dedicated slots on the distal cutting block.

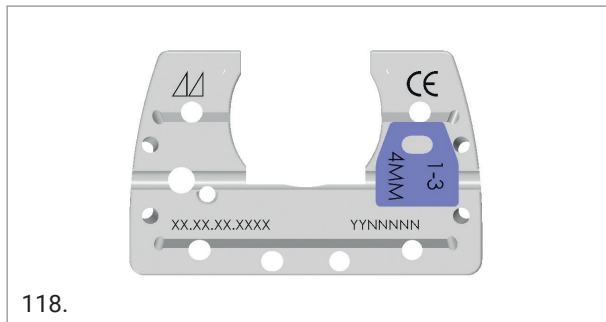
These augments must be assembled on the 4in1 cutting block, femoral box cutter guide and on the trial femoral component later on to keep the same joint line position.

## 20.2 4in1 FEMORAL GUIDE POSITIONING

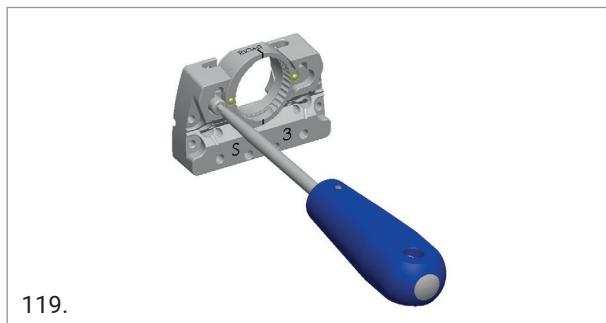
Select the 4in1 femoral guide of the appropriate size.

### OPTION

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



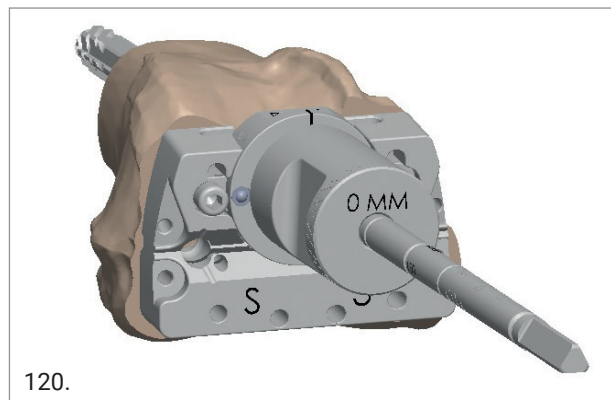
Screw the 6° oriented bushing to the 4in1 guide according to the side operated on (left or right).



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.

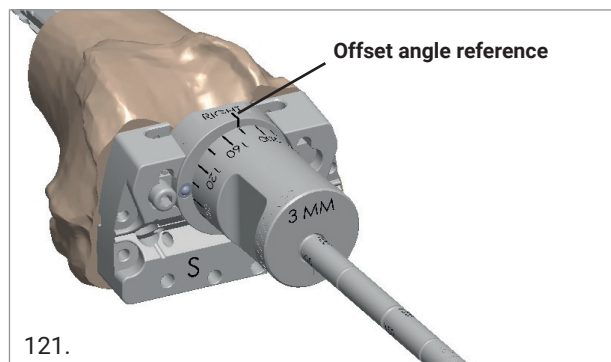
**NOTICE:** The 4in1 guide has the same mediolateral dimension as the corresponding size femoral component.

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



If a femoral offset is needed, replace the 0 mm neutral bushing with the 3 mm offset bushing and turn the 4in1 guide 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 guide. Each mark on the bushing corresponds to 20° angle. In the example the angle is set at 180°.



### CAUTION

The 5 mm offset is not allowed for the femur.

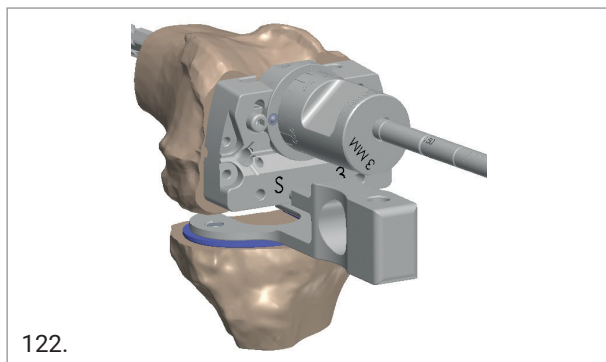
**NOTICE:** The femoral rotation can be checked with respect to the transepicondylar axis.

### 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.

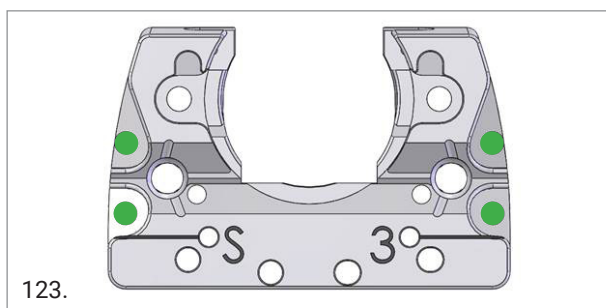
The 10 mm tibial gap is made by the rotational guide plus the 10 mm blue spacer clipped together.

To simulate thicker inserts, additional spacers from 12 to 26 mm are available.



122.

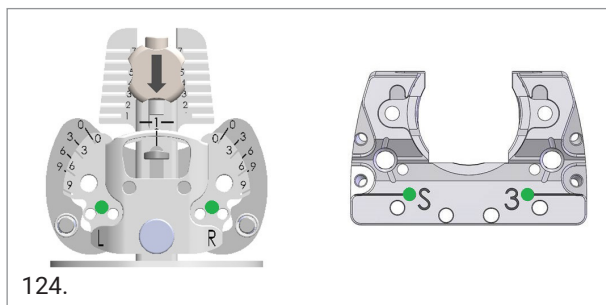
When the offset and the femoral rotation are correctly set, fix the 4in1 femoral guide with at least two lateral pins. Multiple options are available to fix the guide as shown by the green dots in the image below.



123.

### OPTION

Revision 4in1 cutting blocks 02.07.10.8151-8156 have two additional holes marked with a black line as shown by the green dots in the image below. These holes guarantee compatibility with GMK Sphere and GMK Primary posterior reference femoral sizer (ref. 02.07.10.9999).



124.

### CAUTION

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

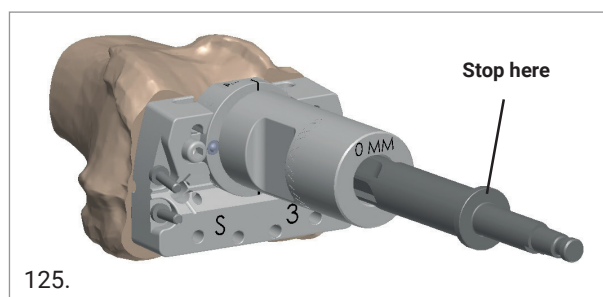
**NOTICE:** The validated offset must be reproduced later on the trial femoral component.

## 20.3 OPTION - FEMUR FINISHING (4IN1 CUTTING BLOCKS)

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 for 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 guide. Using two fingers hold the bushing firmly and ream with the 15.5 mm reamer.



125.

### CAUTION

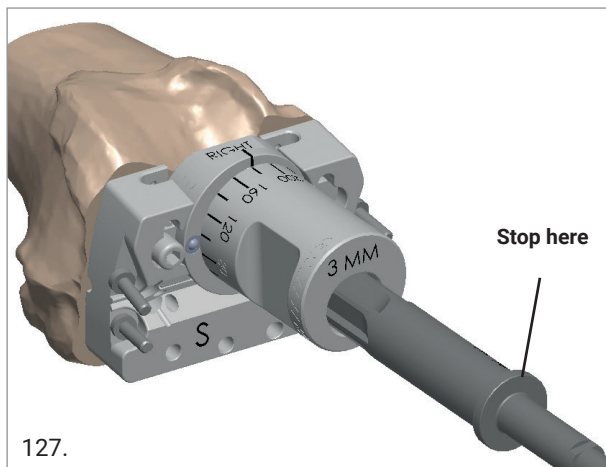
GMK Revision and GMK Hinge have different 15.5 mm femoral reamers. The longer one has to be used for GMK Hinge. Mind the name written on the reamer.



126.

### 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 guide. Rotate the bushing until the correct angle is achieved. Using two fingers hold the bushing firmly and ream with the 15.5 mm reamer.

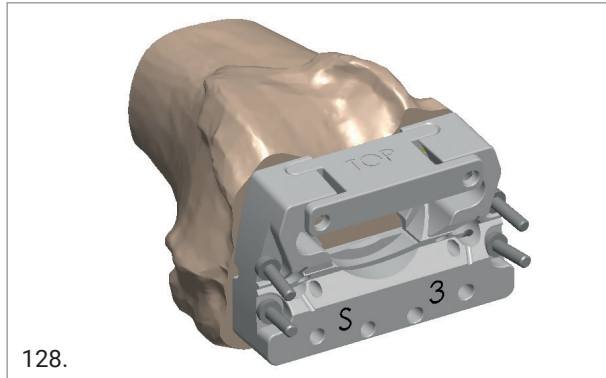


### CAUTION

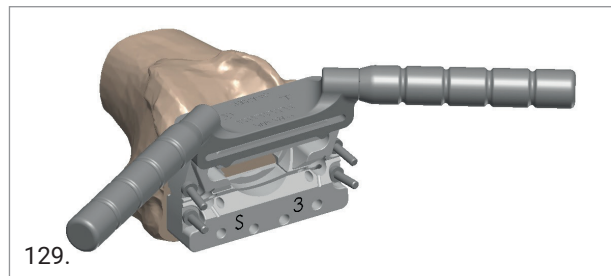
The rotation of the offset bushing is relevant at this stage.

## 20.4 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.



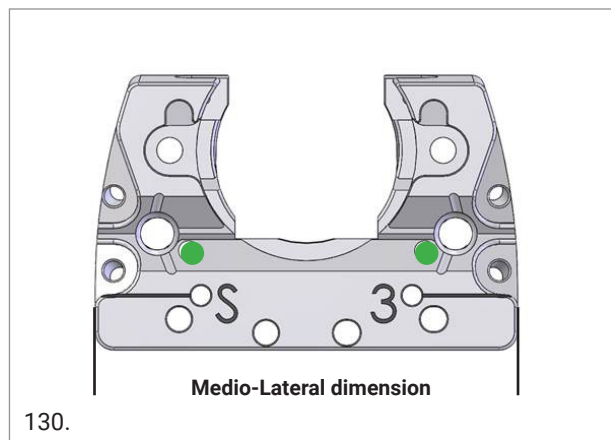
Assemble the saw blade guide on the 4in1 cutting block to perform the anterior and posterior cuts.



Next, perform the posterior and anterior chamfers through the dedicated slots integrated in the 4in1 guide. Before removing the 4in1 guide 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 dots)
- Mark the medio-lateral position of the guide (black lines)



Finally, remove the fixation pins and the 4in1 guide.

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

## 21. APPENDIX 3 CROSSOVER TECHNIQUE

### CAUTION

This technique can be used to switch from a primary to a more constrained implant after the bone resections are 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.

### 21.1 TIBIA FINISHING

#### OPTION

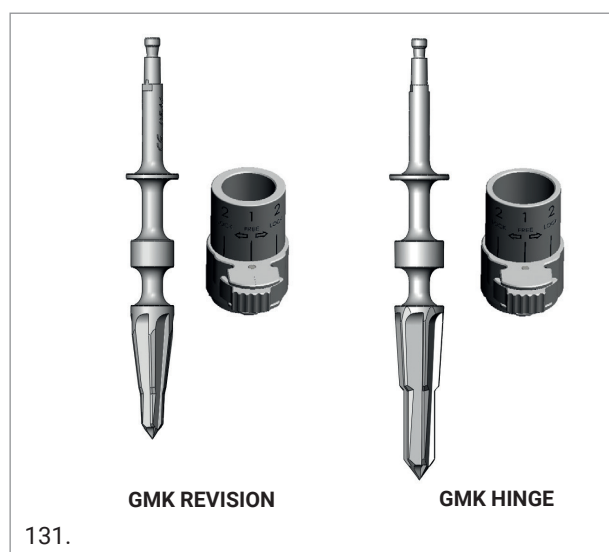
Clip the provisional tibial augment onto the bottom of the trial baseplate before positioning it on the femur. To simulate a 10 mm augment, clip two 5 mm provisional augments together.

Position the trial baseplate on the tibial cut. After achieving optimized resection coverage, fix the trial baseplate with two pins.

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

### CAUTION

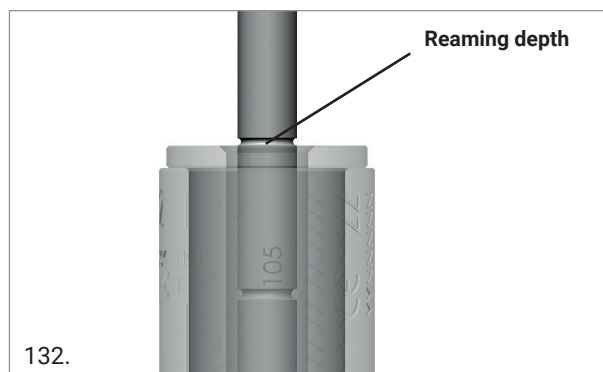
GMK Revision and GMK Hinge have different conical reamers and related reamer guides. The larger one has to be used for GMK Hinge. Mind the name written on the reamer.



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       |



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

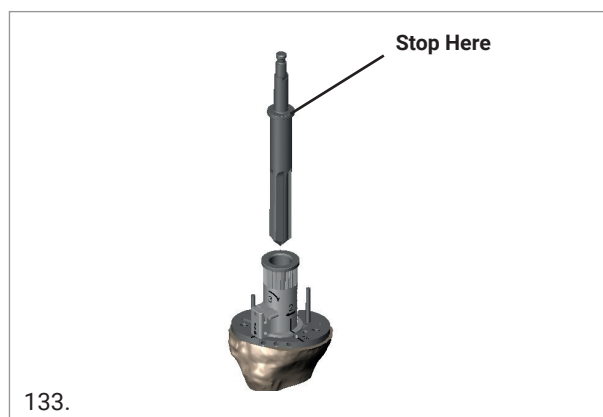
If needed, use larger reamers and the related bushings to prepare the intramedullary canal until the desired diameter is reached.

### 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.



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

Remove the pins and the trial baseplate.

### OPTION

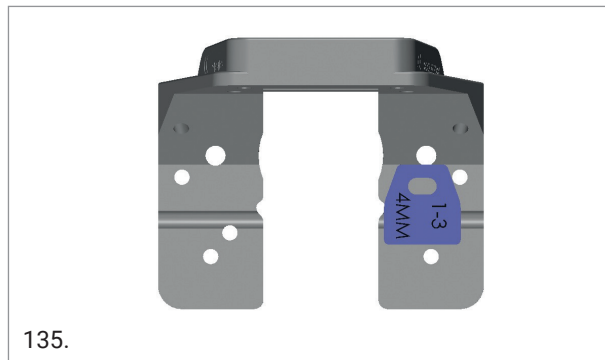
**Only for screw fixed augments:** On the side where no augments are planned, use the drill bit and drilling template provided to create room in the tibia to accommodate the augment holes protruding from the bottom of the baseplate. This step may be skipped if the bone is not too hard.



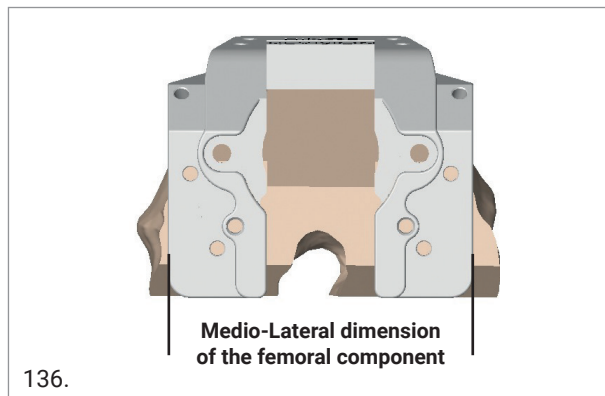
## 21.2 FEMUR FINISHING

### OPTION

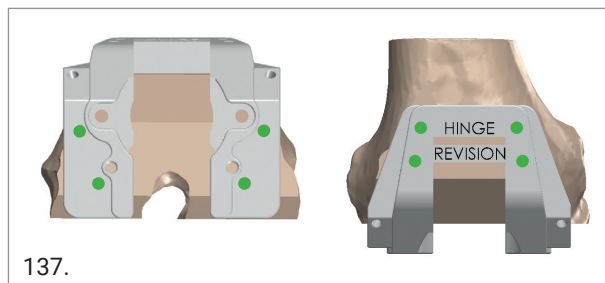
Connect the provisional distal augment to the corresponding side (medial or lateral) at the back of the box cutter before positioning it on the femur.



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.

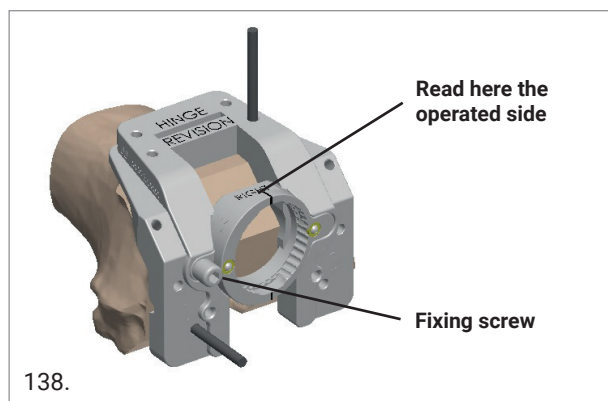


Pin the box cutter using at least two pins. Multiple pinning options are available as shown by the green dots in the image below.

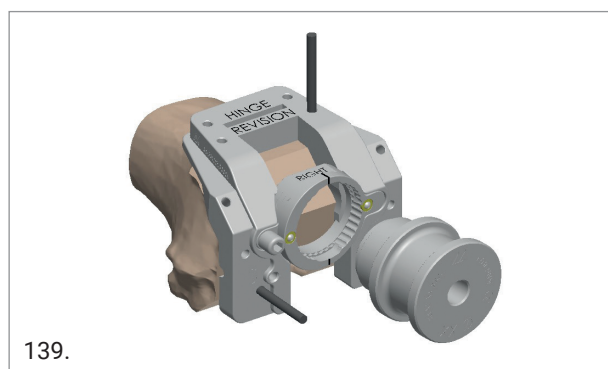




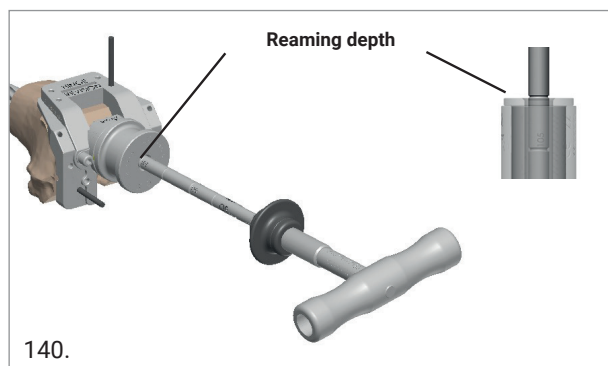
Screw the 6° oriented offset bushing onto the box cutter according to the operative side (left or right).



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.



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



| 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.

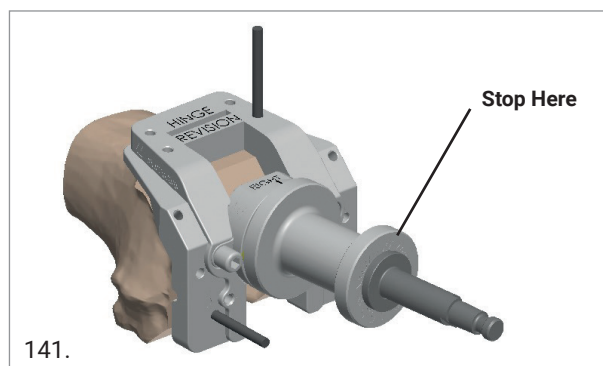
### CAUTION

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.



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



## 22. APPENDIX 4 TRIAL FIRST TECHNIQUE

### CAUTION

This provisional 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 2, 3, 4 or 5 mm offset coupler then assemble the trial tibial tray with the finless keel provided and the trial stem of the appropriate size.



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



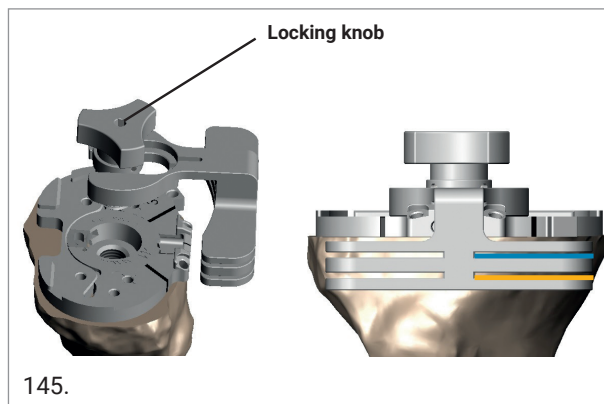
Check the tibial tray position and repeat the former steps until the tibial tray properly covers the tibial cortical rim.

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.



### OPTION

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



— 5 mm  
— 10 mm

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

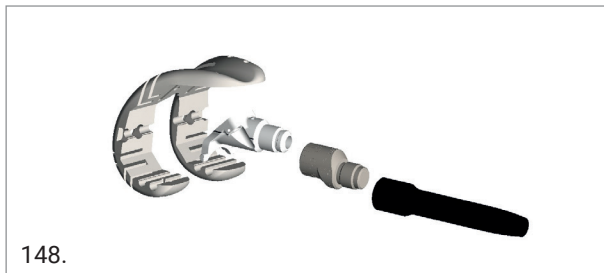


### CAUTION

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.



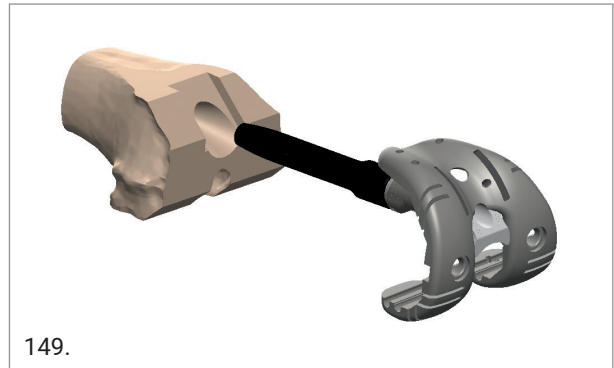
After reaming the femoral intramedullary canal, select the 3 mm offset coupler and assemble the provisional trial femoral implant with the boxless connector provided and the trial stem of the appropriate size.



### CAUTION

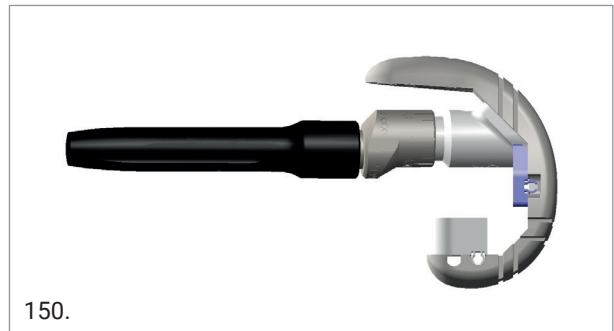
The 5 mm offset is not allowed for the femur.

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.



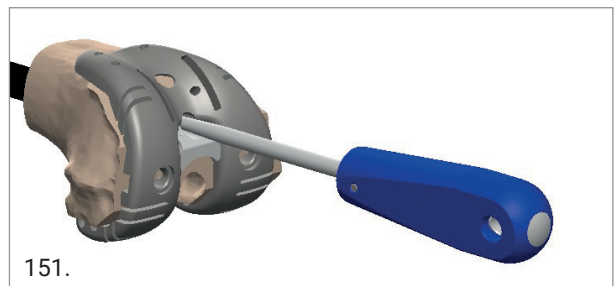
### OPTION

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

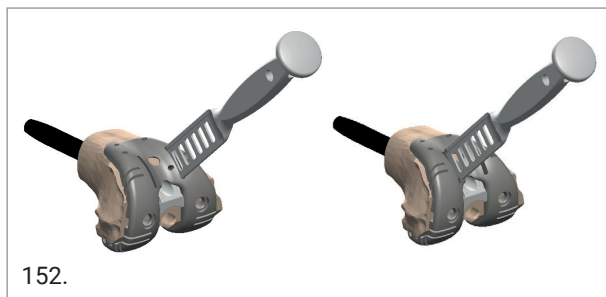


Check the femoral position and repeat the former steps until the trial femur properly covers the femoral cuts.

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

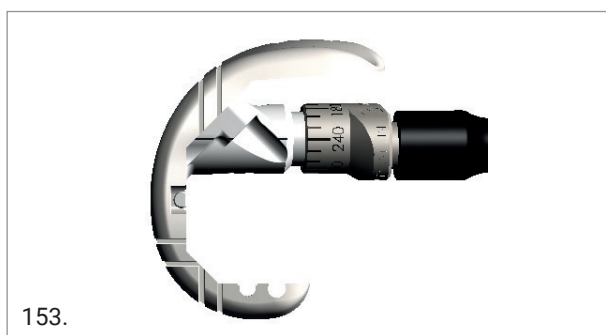


Mark the medio-lateral position of the femoral component through the trial femur slots using the osteotome provided.



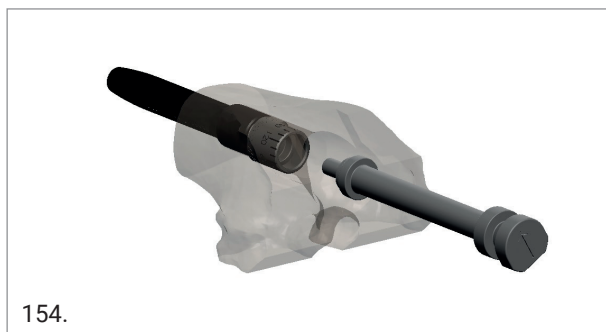
**NOTICE:** The medio-lateral profile can be also used as a landmark to position the box cutter since it is the same for the trial femur and the box cutter.

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



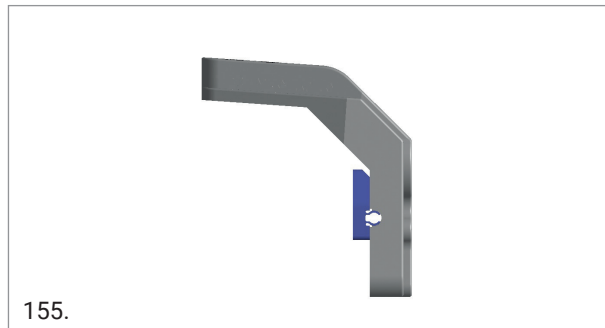
### CAUTION

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.

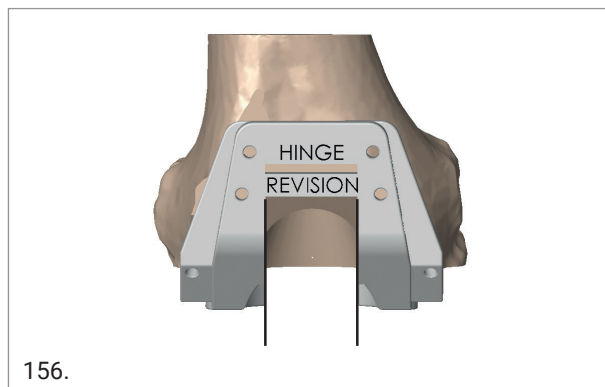


### OPTION

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



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



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.

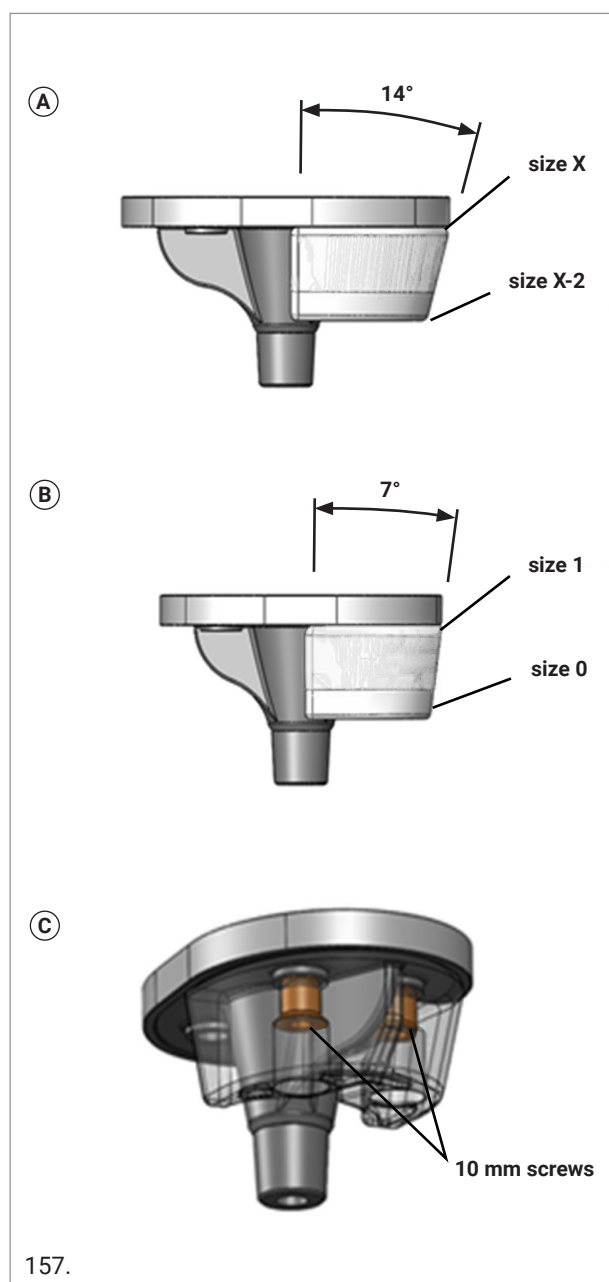
**NOTICE:** Two slots are available. Use the more most proximal for GMK Hinge and the more most distal for GMK Revision.

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

## 23. APPENDIX 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.

**NOTICE:** 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 augment can be used only with GMK Revision tibial tray and GMK Hinge tibial tray.



**NOTICE:** 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.



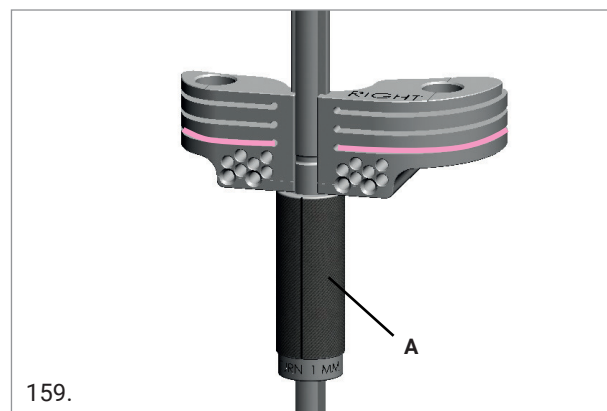
Tibial cutting block (right knee)

— 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).

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



A tibial baseplate size X fits trial tibial augments size X and X-1. For the complete matching capabilities, refer to Table 14.

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

\* Only for GMK Revision

**Table 14:** GMK Revision and GMK Hinge tibial component and screw fixed tibial augment size matching

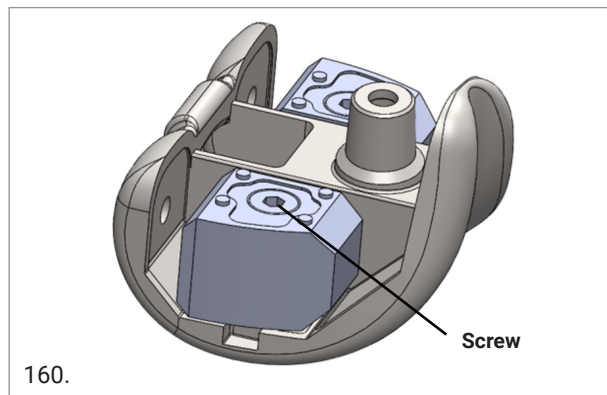
### CAUTION

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.

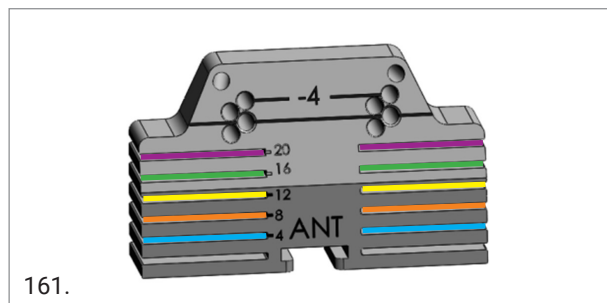
## 24. APPENDIX 4 DISTAL FEMORAL AUGMENTS 16 AND 20 MM THICK

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

**NOTICE:** 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.



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.



- 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 15.

|                       |           | DISTAL AUGMENTS |      |       |       |       |
|-----------------------|-----------|-----------------|------|-------|-------|-------|
| POSTERIOR<br>AUGMENTS | THICKNESS | 4 mm            | 8 mm | 12 mm | 16 mm | 20 mm |
|                       | 5 mm      | ✓               | ✓    | ✓     | ✓     | ✓     |
|                       | 10 mm     | ✓               | ✓    | ✗     | ✗     | ✗     |

**Table 15:** 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.

## 25. APPENDIX 5 IMPLANT NOMENCLATURE

### GMK REVISION

#### REVISION STD FEMORAL COMPONENT

| 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 |

#### FEMORAL COMPONENT REVISION 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 |

#### REVISION PS FEMORAL COMPONENT

| 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 |

#### FEMORAL COMPONENT REVISION PS - 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 |

#### REVISION TIBIAL COMPONENT

| 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 |
| 02.07.0684L | 4    | 02.07.0684R |
| 02.07.0685L | 5    | 02.07.0685R |
| 02.07.0686L | 6    | 02.07.0686R |

#### TIBIAL TRAY REVISION - 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 |
| 02.07.4684L | 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        | 02.09.SCP10 |
| 12        | 02.09.SCP12 |
| 14        | 02.09.SCP14 |
| 17        | 02.09.SCP17 |
| 20        | 02.09.SCP20 |
| 23        | 02.09.SCP23 |
| 26        | 02.09.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

### 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 |

### 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 |

### 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 |

### 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 |

### 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 |

### 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 |

**FEMUR STD CEMENTED - SensiTiN COATED NARROW**

| 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 |

**FEMUR PS CEMENTED - SensiTiN COATED NARROW**

| 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 |

**FIXED TIBIAL TRAY CEMENTED**

| REF. LEFT   | SIZE | REF. RIGHT  |
|-------------|------|-------------|
| 02.07.1201L | 1    | 02.07.1201R |
| 02.07.1201L | 2    | 02.07.1201R |
| 02.07.1203L | 3    | 02.07.1203R |
| 02.07.1204L | 4    | 02.07.1204R |
| 02.07.1205L | 5    | 02.07.1205R |
| 02.07.1206L | 6    | 02.07.1206R |

**TIBIAL COMPONENT FIXED CEMENTED - SensiTiN COATED**

| REF. LEFT   | SIZE | REF. RIGHT  |
|-------------|------|-------------|
| 02.07.2801L | 1    | 02.07.2801R |
| 02.07.2802L | 2    | 02.07.2802R |
| 02.07.2803L | 3    | 02.07.2803R |
| 02.07.2804L | 4    | 02.07.2804R |
| 02.07.2805L | 5    | 02.07.2805R |
| 02.07.2806L | 6    | 02.07.2806R |

### 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             |

**GMK SPHERE**
**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 |

**FIXED TIBIAL TRAY CEMENTED**

| REF. LEFT   | SIZE  | REF. RIGHT  |
|-------------|-------|-------------|
| 02.07.1201L | 1     | 02.07.1201R |
| 02.07.1202L | 2     | 02.07.1202R |
| 02.07.1203L | 3     | 02.07.1203R |
| 02.12.T3i4L | t3-i4 | 02.12.T3i4R |
| 02.12.T4i3L | t4-i3 | 02.12.T4i3R |
| 02.07.1204L | 4     | 02.07.1204R |
| 02.07.1205L | 5     | 02.07.1205R |
| 02.07.1206L | 6     | 02.07.1206R |

**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 TIBIAL TRAY CEMENTED SensiTiN COATED**

| REF. LEFT     | SIZE  | REF. RIGHT    |
|---------------|-------|---------------|
| 02.07.2801L   | 1     | 02.07.2801R   |
| 02.07.2802L   | 2     | 02.07.2802R   |
| 02.07.2803L   | 3     | 02.07.2803R   |
| 02.12.28T3i4L | t3-i4 | 02.12.28T3i4R |
| 02.12.28T4i3L | t4-i3 | 02.12.28T4i3R |
| 02.07.2804L   | 4     | 02.07.2804R   |
| 02.07.2805L   | 5     | 02.07.2805R   |
| 02.07.2806L   | 6     | 02.07.2806R   |

## 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

### HINGE FEMORAL COMPONENT

| 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 |

### 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 |

### FEMORAL COMPONENT HINGE - 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 |

### TIBIAL TRAY HINGE - 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.       |
|-----------|------------|
| 12        | 02.09.HE12 |
| 14        | 02.09.HE14 |
| 17        | 02.09.HE17 |
| 20        | 02.09.HE20 |
| 23        | 02.09.HE23 |
| 26        | 02.09.HE26 |

**HINGE TIBIAL INSERT**

| REF.        | SIZE | THICKNESS (mm) | REF.        | SIZE | THICKNESS (mm) |
|-------------|------|----------------|-------------|------|----------------|
| 02.09.0112H | 1    | 12             | 02.09.0212H | 2    | 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             |
| 02.09.0312H | 3    | 12             | 02.09.0412H | 4    | 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             |
| 02.09.0512H | 5    | 12             | 02.09.0612H | 6    | 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.<br>RIGHT MEDIAL -<br>LEFT LATERAL | SIZE | REF.<br>LEFT MEDIAL -<br>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.<br>RIGHT MEDIAL -<br>LEFT LATERAL | SIZE | REF.<br>LEFT MEDIAL -<br>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.<br>RIGHT MEDIAL -<br>LEFT LATERAL | SIZE | REF.<br>LEFT MEDIAL -<br>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.<br>RIGHT MEDIAL -<br>LEFT LATERAL | SIZE | REF.<br>LEFT MEDIAL -<br>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                       |

\*\* 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          |



#### RESURFACING PATELLA

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

#### RESURFACING PATELLA E-CROSS

| Size | Ref.         |
|------|--------------|
| 1    | 02.12.E001RP |
| 2    | 02.12.E002RP |
| 3    | 02.12.E003RP |
| 4    | 02.12.E004RP |

#### INSET PATELLA

| SIZE | REF.         |
|------|--------------|
| 2    | 02.07.0041IP |
| 3    | 02.07.0042IP |
| 4    | 02.07.0043IP |

Part numbers subject to change.

## NOTE FOR STERILIZATION

The instrumentation is not sterile upon delivery. Instruments must be cleaned before use and sterilized in an autoclave respecting the US regulations, directives where applicable, and following the manufactures instructions for use of the autoclave. For detailed instructions please refer to the document "Recommendations for cleaning decontamination and sterilisation of Medacta International orthopaedic devices" available at [www.medacta.com](http://www.medacta.com).



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GMK® Revision System  
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ref: 99.27S.12US  
rev. 06

Last update: August 2023