

GMK HINGE

SURGICAL TECHNIQUE

Ref. 99.27H.12 Rev.03

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ANNEX 1 - QUICK REFERENCE GUIDE FOR IMPLANT ASSEMBLING

CAUTION: Incorrect assembling of the hinge-post mechanism may lead to early mechanical failure of this mechanism. Following the correct procedure to assemble all the implant modular connections as described herein is crucial for the implant survival rate.

A quick reference guide for implant assembling is provided in Annex 1.

1 INTRODUCTION

GMK® HINGE Knee System is indicated for cases of revision of a primary total knee replacement or for primary total knee replacement when there is evidence of a serious collateral ligaments deficiency and/or bone augmentation is required. Total knee arthroplasties may be subject to failure for various reasons, including polyethylene wear, aseptic loosening, osteolysis, infection, ligamentous instability and patello-femoral complications. Goals of a successful total knee revision include, amongst others:

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

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

2 INDICATION FOR USE

The GMK® Hinge 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 condyles
-
- Post traumatic loss of joint configuration
- Primary implantation failure.

When implanting GMK HINGE prosthesis, it is mandatory to implant always an extension stem both on the tibial and the femoral components.

3 PRE-OPERATIVE PLANNING

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

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

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

From a physical evaluation, the surgeon can evaluate previous surgery scar conditions, range of motion, ligament stability, extensor mechanism integrity and in general all neurovascular structures conditions.

4 PRIMARY IMPLANT REMOVAL

When the GMK® Hinge knee prosthesis is used for revision surgeries, the first goal in removing the previous implant is to preserve as much bone as possible. The incision should be done following the primary surgery one. 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.

5 JOINT LINE AND JOINT SPACE MANAGEMENT (OPTION)

Only when GMK HINGE is used for revision surgeries: assemble the trial base handle with the independent cuts reference spacer, the minimum 12 mm tibial spacer and the most suitable femoral spacer.

Put the knee in flexion and insert the spacers.

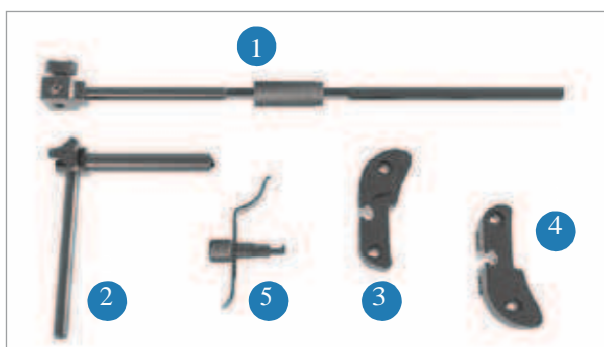
If needed use a thicker tibial spacer to fill the flexion gap. Then put the knee in extension and reinsert the spacers validated in flexion. If needed, plan to use posterior or distal wedges to compensate the difference between flexion and extension gap.



6 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)



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 firmest stability in the canal.



NOTICE: On each reamer different reaming depths are engraved. Be careful to align the depth marking to the existing tibial resection in order to correctly reach the corresponding depth.

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

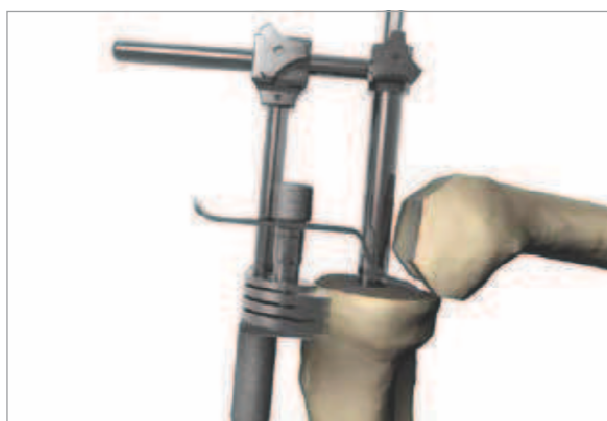
Assemble the intramedullary rod guide and the revision intramedullary guide and lock the connection by turning the corresponding knob.



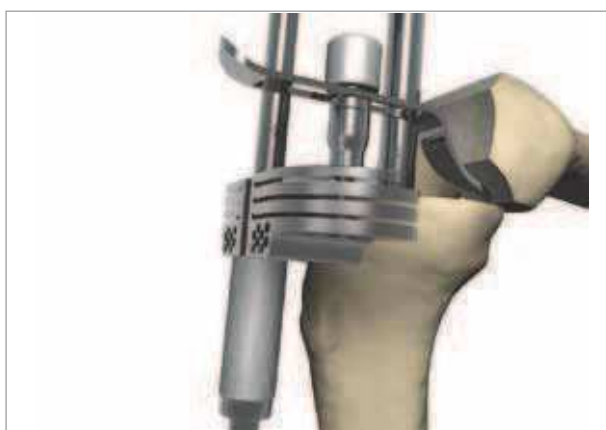
Insert the tibial cutting block of the correct side (left/right) on the threaded part of the revision intramedullary guide and slide it up manually along the railway (red arrows) by turning the micrometric knob.



Insert the assembly onto the reamer. To define cut height a tibial palpator can be assembled on the tibial cutting guide.



To adjust the position of the tibial cutting block, turn the micrometric screw (A).



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



TIP

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



Tibial cutting block (left knee)

- 0 mm — tibial cut
- +2 mm — 5 mm tibial wedge
- +4 mm — 10 mm tibial wedge
- +6 mm
- oblique pin



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 second metatarsal bone as reference point.

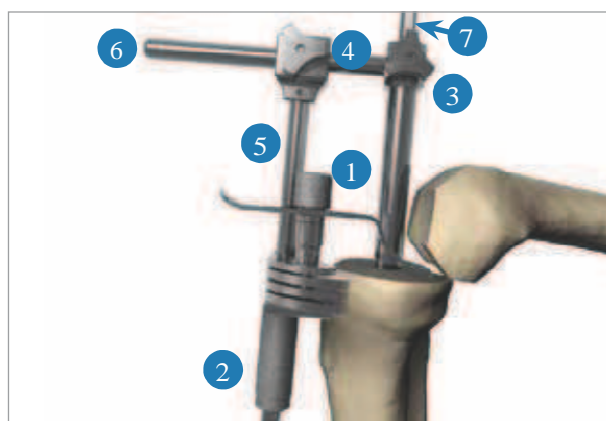
Once the cutting guide position is deemed satisfactory, pre-drill and insert two pins in the holes row marked with a line with the help of a pin impactor.



The cuts are based on the intramedullary reference.

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

- Remove the tibial palpator (1)
- Unscrew the micrometric screw (2)
- Unlock the knobs (3) (4)
- Pull up the revision intramedullary guide until the frontal extraction level is reached (5)
- Extract the intramedullary rod guide (6)
- Extract the reamer with the T-handle (7)



Check the guide position with the help of the sickle finger and, if necessary, reposition the guide on the pins using the correction holes rows (+2, +4, +6 mm). When the position of the guide is deemed satisfactory, insert the third oblique stabilization pin and finally perform the tibial cut.

Once all the resections have been done, remove the cutting block and the pins.

7 TIBIAL WEDGE (option)

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

TIBIA AUGMENTATION

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 wedges can be carried out through dedicated slots on the tibial cutting block.



Tibial cutting block (left knee)

— 5 mm tibial wedge

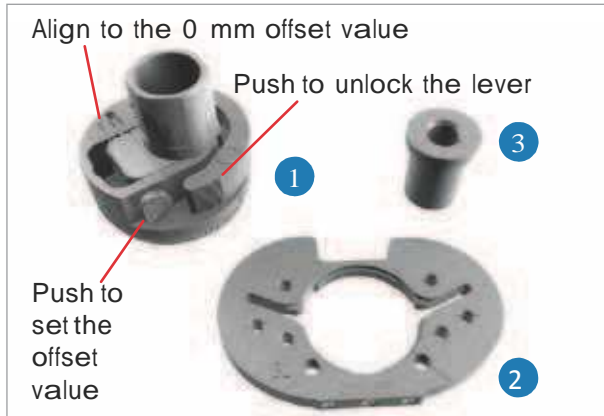
— 10 mm tibial wedge

A tibial baseplate size X accepts trial tibial wedges size X and X-1. To simulate a 10 mm wedge use two trial wedges clipped together.

8 TIBIAL BASEPLATE FIXATION (no tibial offset)

Open the locking lever on the T/F offset positioner, push the lateral button and slide the body to align the mark to the 0 mm offset value.

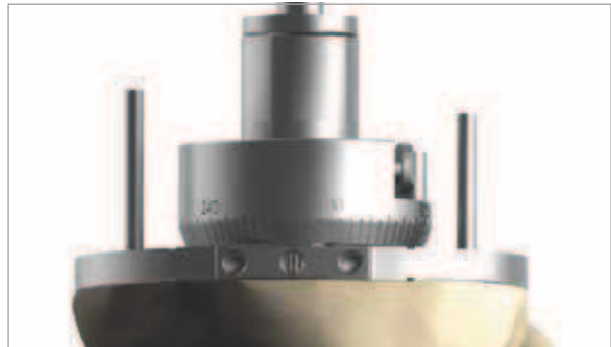
Assemble the T/F offset positioner (1) with the trial base plate (2) and insert the reduction bush (3) into the offset positioner.



Reinsert the last reamer used into the intramedullary canal and finally slide the assembly onto the reamer. Find the best coverage of the tibial cut by manually rotating the trial baseplate.



Once the position is deemed satisfactory, fix the base plate with two pins.

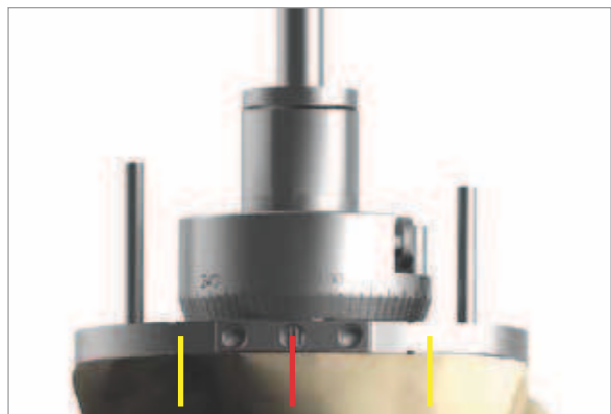


● pin holes

NOTICE: Do not use sword pins to fix the trial base plate. Mark three lines on bone by means of an electrocautery knife to correspond with the laser marks in front of the trial baseplate.

The two yellow lines will be used as reference to check the final tibial baseplate position

The red line can be used as reference to perform the vertical cut in case a tibial wedge is needed.

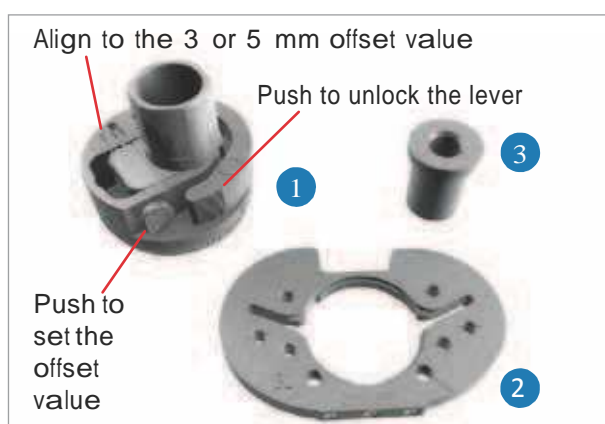


9 TIBIAL OFFSET DEFINITION (option)

If the optimal coverage of the tibial cut cannot be obtained without offset, tibial offset options (3 mm or 5 mm) are available to guarantee the best cortical bone support to the tibial base plate.

Open the locking lever on the T/F offset positioner (1), push the lateral button and slide the body to align the mark to the 3 or 5 mm offset value.

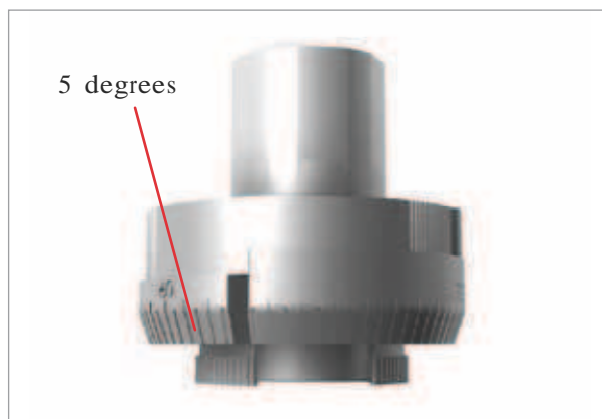
Assemble the T/F offset positioner with the trial base plate (2) and insert the reduction bush (3) into the offset positioner.



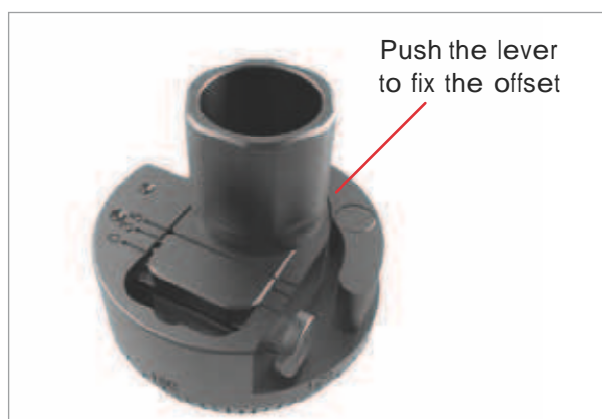
Reinsert the last reamer used into the intramedullary canal and finally slide the assembly onto the reamer. Use the fork wrench ("OFFSET POSITIONER" side) to rotate the trial base plate in order to obtain the best coverage of the tibial resection plane.



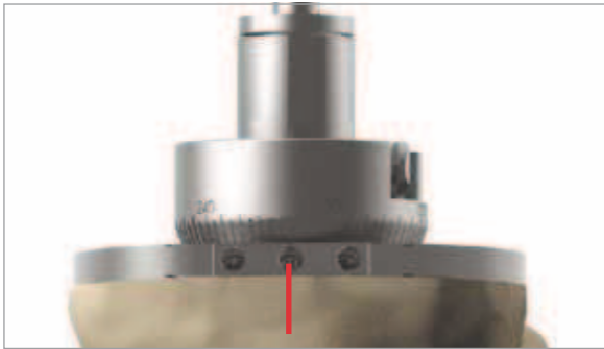
The angles marked on the T/F offset positioner range from 0 to 360 degrees. Each nick corresponds to 5°.



When the coverage is deemed satisfactory, the offset angle is fixed pushing the lever.

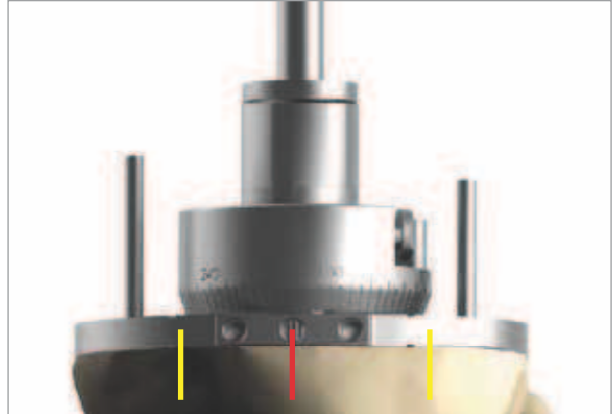


Read the value on the T/F offset positioner metal ring which corresponds to the laser mark on the trial baseplate (red line).



Mark three lines on bone by means of an electrocautery knife to correspond with the laser marks in front of the trial baseplate.

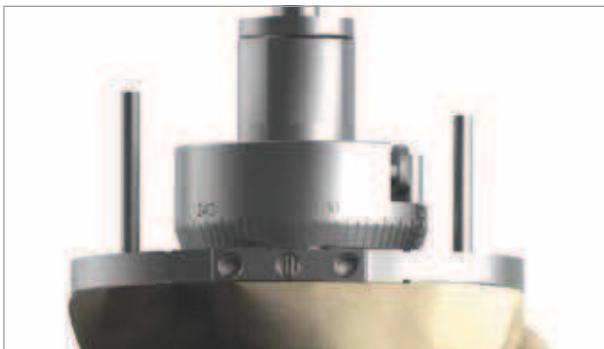
- The two yellow lines will be used as reference to check the final tibial baseplate position
- The red line can be used as reference to perform the vertical cut in case a tibial wedge is needed.



CAUTION

The angle indicated on the metal ring and the offset selected must be noted. These values must be reproduced during both trial and final tibial implant positioning phase.

Once the trial base plate position is deemed satisfactory, insert two pins to fix it.



pin holes

NOTICE: Do not use sword pins to fix the trial base plate.

10 TIBIA FINISHING (no tibial offset)

NOTICE: Only for 11 mm or 13 mm extension stems. Remove the offset reduction bush and the reamer. Slip the ring spacer onto the 15.5 mm tibial reamer and drill through the T/ F offset positioner until the stop is reached to create the site for the stem connection. Then remove the T/F offset positioner.



Remove the offset reduction bush, the T/F offset positioner and the reamer using the T-handle.



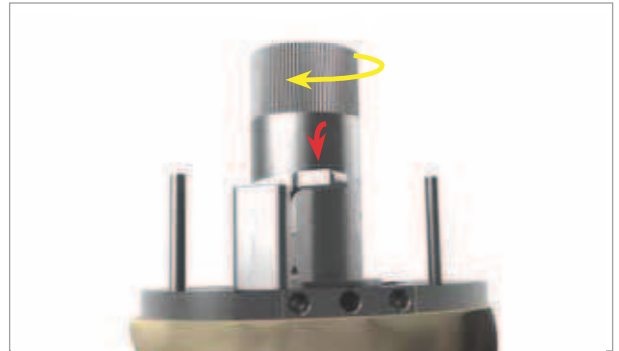
OPTION

If any tibial wedge is needed, remove the trial base plate and perform the vertical cut aligning it to the laser mark in the middle of the base plate. Then clip the trial wedge of the correct size on the correct side of the trial base plate and reposition the assembly on the tibia, sliding it on the parallel pins.



Assemble the reamer guide with the trial base plate following the marked numbers:

- Insert the reamer guide on the base plate
- Rotate the reamer guide on the base plate (yellow arrow)
- Put the lever down to secure the connection (red arrow)



Insert the dedicated reamer into the guide and prepare the keel site until the depth stopper is reached.



Unlock the lever and remove the reamer guide.

Screw the impactor handle (1) on the puncher (2) and impact the assembly through the trial baseplate using the sliding hammer (3) in order to finish the keel preparation.

NOTICE: In case of sclerotic bone it is suggested to use the saw blade inserted in the tibial tray slots before using the puncher.

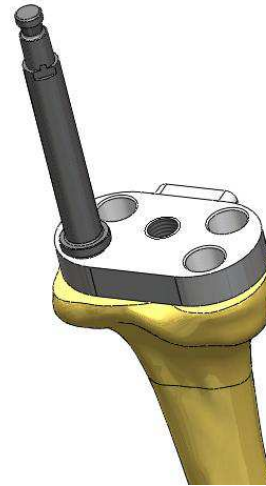


After the keel site has been created, remove the puncher together with the trial baseplate and finally the pins.

OPTION: If no augmentation are needed on medial lateral or both sides, in case of hard bone an additional finishing may be needed to create room for the augments screw holes located on the bottom of the tray.

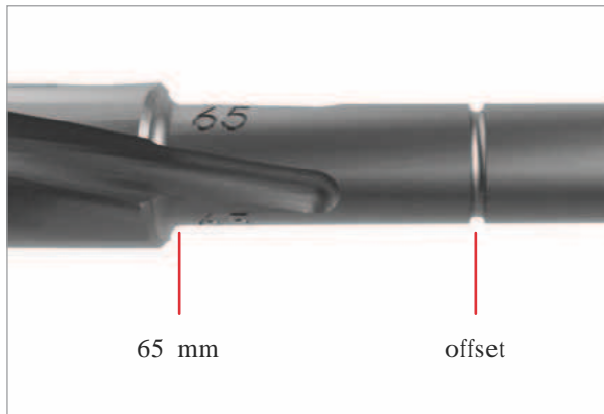
In such a case, position the reaming guide on the tibial bone centering it into the keel hole, then create with the provided reamer the holes for the tibial augments screws.

This step has to be done only on the side/s where augments are not needed.



11 TIBIA FINISHING (offset option)

Remove the offset positioner reduction bush and the T/F offset positioner. Further drill until the corresponding "OFFSET" mark is aligned to the tibial resection to create the site for the distal tip of the extension stem. The picture shows the 65 mm drilling depth mark and the corresponding offset mark.



Then remove the reamer using the T-handle.

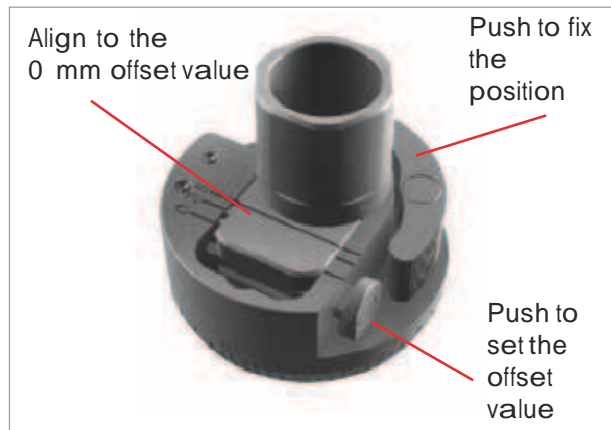


OPTION

If any tibial wedge is needed, remove the trial base plate and perform the vertical cut aligning it to the laser mark in the middle of the base plate. Then clip the trial wedge of the correct size on the correct side of the trial base plate and reposition the assembly on the tibia.



Push the lateral button, slide the body to align the mark to the 0 mm offset value. Reposition the T/F offset positioner on the trial base plate, ensuring the same rotation as previously validated. Then lock the lever to fix the position.



Slip the ring spacer on the 15.5 mm tibial reamer. By using this reamer, drill to create the offset site.

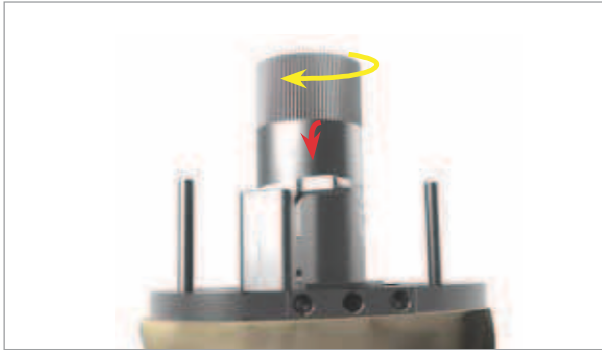


NOTICE: For 11 mm or 13 mm diameters extension stems only. Set the T/F offset positioner at 3 or 5 mm as previously validated and drill using the 15.5 mm reamer (without ring spacer) to create the extension stem cone site.

Unlock the lever and remove the T/F offset positioner from the trial baseplate.

Assemble the reamer guide with the trial base plate following the marked numbers:

- Insert the reamer guide on the base plate
- Rotate the reamer guide on the base plate (yellow arrow)
- Put the lever down to secure the connection (red arrow)



Insert the dedicated reamer into the guide and prepare the keel site until the depth stopper is reached



Screw the impactor handle (1) on the puncher (2) and impact the assembly through the trial baseplate using the sliding hammer (3) in order to finish the keel preparation



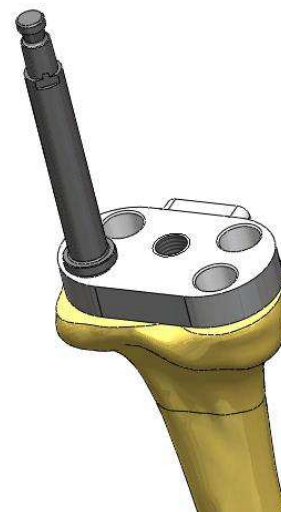
NOTICE: In case of sclerotic bone it is suggested to use the saw blade inserted in the tibial tray slots before using the puncher.

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

OPTION: If no augmentation are needed on medial lateral or both sides, in case of hard bone an additional finishing may be needed to create room for the augments screw holes located on the bottom of the tray.

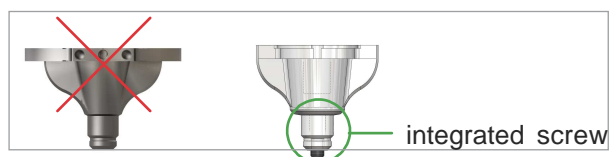
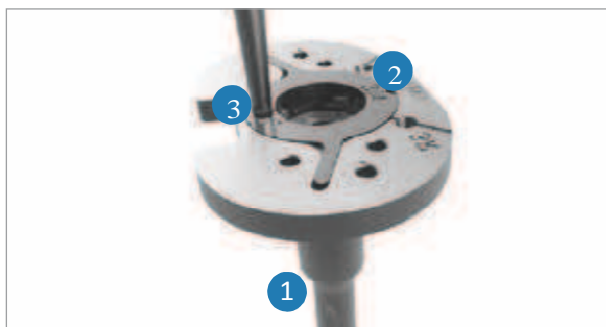
In such a case, position the reaming guide on the tibial bone centering it into the keel hole, then create with the provided reamer the holes for the tibial augments screws.

This step has to be done only on the side/s where augments are not needed.



12 TRIAL TIBIAL COMPONENT (no tibial offset)

Screw the extension stem (1) of the correct size onto the puncher (3), then insert the puncher on the trial base plate (2). Secure the connection between the puncher and the trial baseplate by sliding the locking mechanism using the screwdriver.



Screw the impactor handle (4) onto the puncher and finally impact the assembly on the tibial bone by using the sliding hammer (5).

OPTION

If a tibial wedge (6) is necessary, it must be assembled on the trial baseplate before impaction on bone.



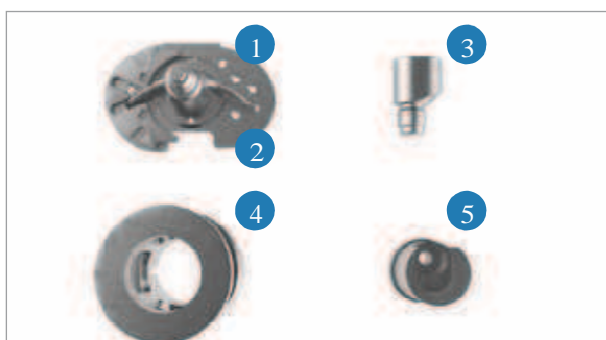
CAUTION

If the GMK® Hinge instrumentation is used for primary cases, make sure not to mix the two tibial punchers. Use the puncher with the bigger keel and the integrated screw.

13 TRIAL TIBIAL COMPONENT (offset option)

Before impacting the trial tibial component, the offset previously validated must be reproduced. The tibial offset reproducing system consists of:

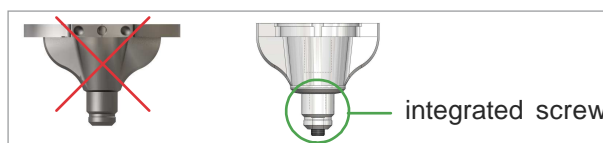
- Puncher (1)
- Trial baseplate (2)
- Trial offset, 3 mm or 5 mm (3)
- Tibial offset reference (4)
- Offset adaptor, 3 mm or 5 mm (5)



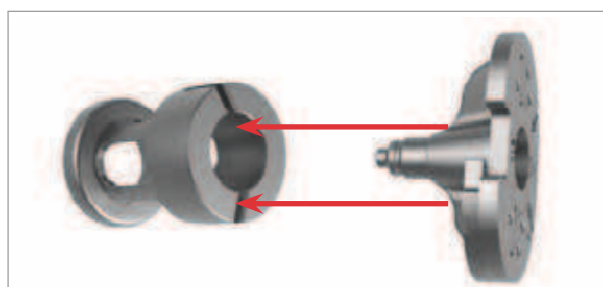
Assemble the trial baseplate with the puncher.

CAUTION

If the GMK® Hinge instrumentation is used for primary cases, make sure not to mix the two tibial punchers. Use the puncher with the bigger keel and the integrated screw.



Insert the assembly into the tibial offset reference. Only one orientation is allowed (red

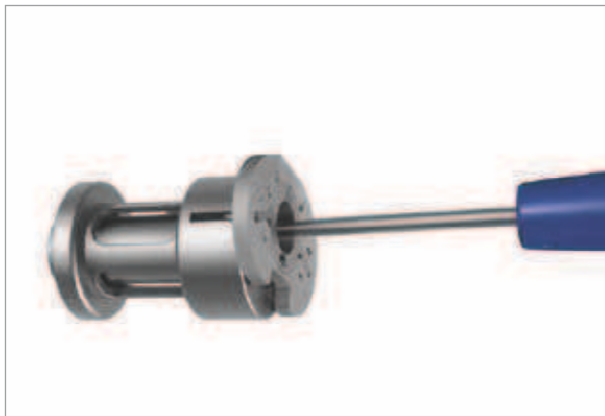


Insert the offset into the corresponding offset adaptor (3 mm or 5 mm).

Insert the assembly into the offset reference and push the top to clip the tibial offset onto the puncher. Turn the knob to align the laser mark (yellow nick) to the angle validated and previously noted during the tibial offset definition. Each nick on the metal ring corresponds to 5 degrees. Screw the internal screw (red circle) to fix the selected angle.



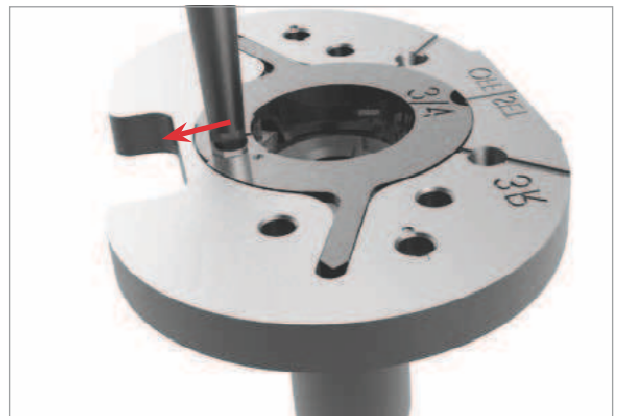
Secure the screw through the puncher to fix the offset position.



Once the offset is fixed, unscrew and remove the offset adapter and the tibial offset reference. Screw the extension stem (1) of the correct size onto the offset of the validated size (2), using the fork wrench (3) (IMPLANT OFFSET side) to prevent offset rotation while screwing the stem.



Secure the connection between the puncher and the trial baseplate by sliding the locking mechanism using the screwdriver.



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

Screw the impactor handle (1) onto the puncher (2) and impact the complete trial tibial implant onto the tibia using the sliding hammer (3).



OPTION

If a tibial wedge (4) is necessary, it must be assembled on the trial baseplate (5) before impaction on bone.



14 GAP CONTROL

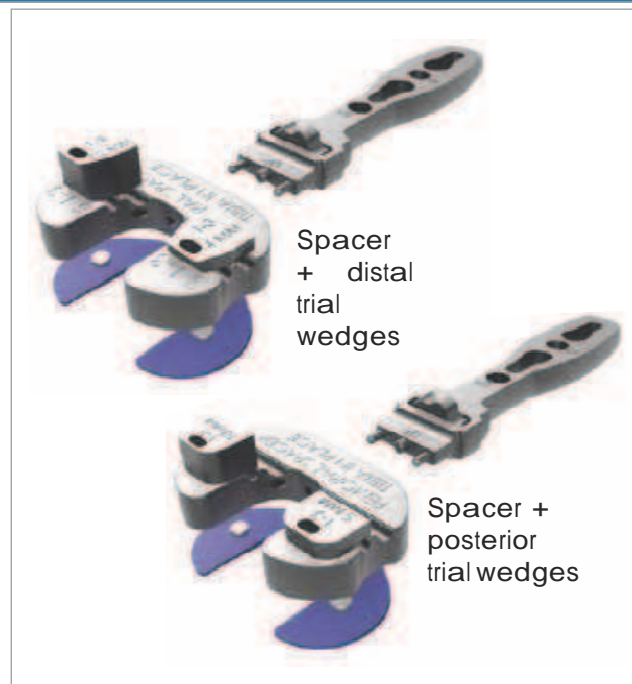
Only when GMK HINGE is used for revision surgeries: assemble the trial base handle with the femoral spacer tibia in place of the correct size (02.07.10.9642 or 02.07.10.9643) and the minimum blue tibial spacer (4 mm thickness).



CAUTION

Do not use the spacer ref.no. 02.07.10.2230 to check the gap with the trial base plate in place.

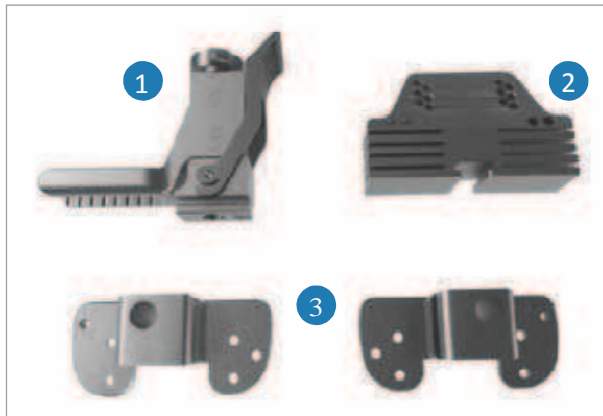
Put the knee in flexion and insert the assembly. If needed use a thicker blue tibial spacer to fill the flexion gap. If needed, clip trial posterior wedges to compensate bone defects of the posterior condyles. Then put the knee in extension, remove the trial posterior wedges if used and reinsert the spacer validated in flexion. If needed, clip trial distal wedges to compensate bone defects of the distal condyles.



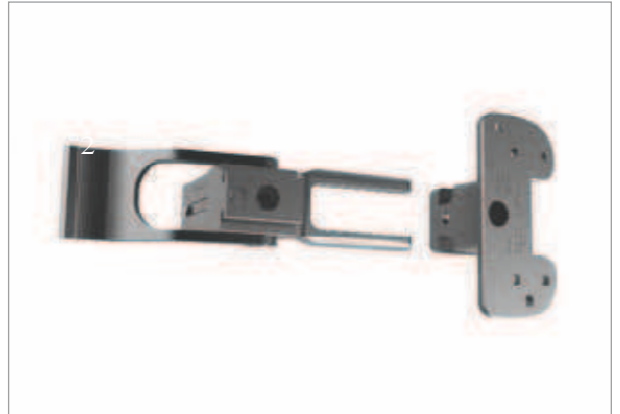
15 FEMORAL DISTAL RESECTION

The femoral distal cut system consists of:

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



Slide the micrometric distal cut positioner on the distal cut positioner of the correct side (left or right).



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 firmest stability into the canal.



Then slide the assembly onto the reamer. This system sets the distal cut at 6 degrees of inclination versus the intramedullary axis.



NOTICE: On each reamer different reaming depths are engraved. Be careful to align the depth marking to the existing tibial 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 distal cutting block on the plate located on the micrometric distal cut positioner.



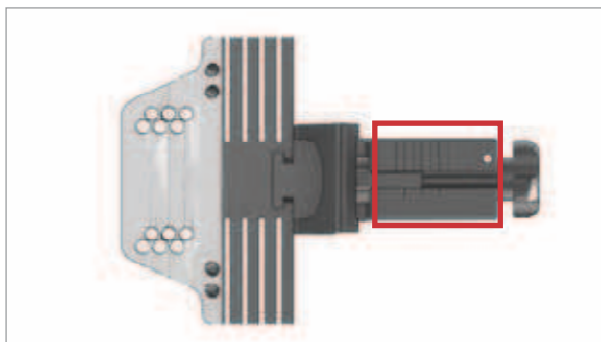
Secure the connection closing the lever on the micrometric distal cut positioner.



Adjust the distal cutting block position by means of 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 square).



The standard distal cut is planned at 0 mm when the micrometric screw is set on the 0 position.

Once the distal cutting guide position is deemed satisfactory, fix the block by means of pins.



Distal cutting block

- | | |
|----------------|----------------------|
| ● 0 mm | — distal cut |
| ● +2 mm | — 4 mm distal wedge |
| ● +4 mm | — 8 mm distal wedge |
| ● -2 mm | — 12 mm distal wedge |
| ● -4 mm | |
| ● -6 mm | |
| ● oblique pins | |

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

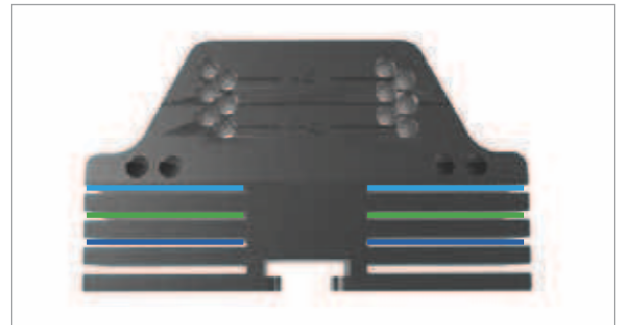
16 FEMORAL DISTAL WEDGE

In case of bone loss, specific metal wedges (augmentations) can be inserted on the distal condyles either on medial, lateral or both sides.

The following table summarizes the available distal femur augmentations.

DISTAL FEMUR AUGMENTATION	
Thickness	Size
4 mm	1 · 2 · 3 · 4 · 5 · 6
8 mm	1 · 2 · 3 · 4 · 5 · 6
12 mm	1 · 2 · 3 · 4 · 5 · 6

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



Distal cutting block holes

— 4 mm distal wedge

— 8 mm distal wedge

— 12 mm distal wedge

These wedges must be then assembled on the 4in1 cutting block and on the trial femoral component to simulate the corresponding bone stock.

17 FEMORAL SIZE DEFINITION

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



OPTION

For revision surgeries, a further check of the femoral size can be performed superimposing the trial femur on the resected femur.

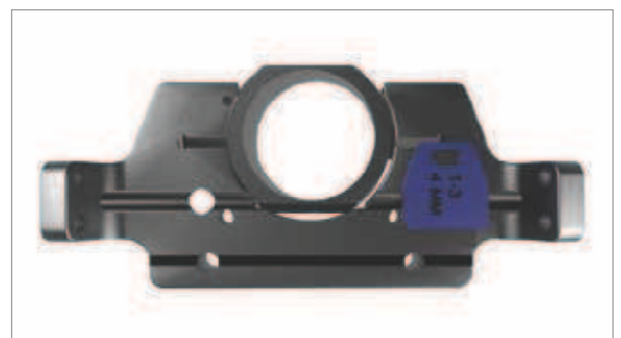
18 FEMORAL ROTATION (no femoral offset)

Assemble the 4/1 cutting guide of the selected size and the offset tapered bush according to the operated leg (left and right), and secure the connection screw.

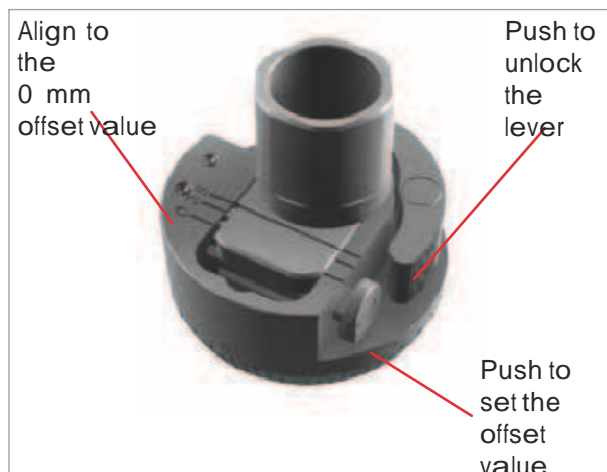


OPTION

If a distal wedge is necessary it must be clipped onto the correct side on the back of the 4in1 cutting block before positioning the guide on femur.



Open the locking lever on the T/F offset positioner, push the lateral button and slide the body to align the mark to the 0 mm offset value.



Assemble the T / F offset positioner with the offset tapered bush and the 4in1 cutting block. Reinsert the last reamer used into the femoral intramedullary canal. Slide the assembly and center it on to the reamer by inserting the offset reduction bush.



Check the coverage of the distal cut by rotating the 4in1 cutting block and verify the anterior/posterior resection level by using the sickle finger. If the position of the 4in1 cutting guide is deemed satisfactory, fix the connection by pushing the lever on the T/F offset positioner.

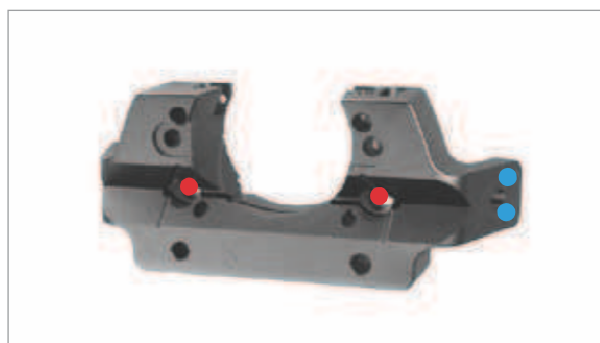
Then set the femoral rotation by manually rotating the cutting guide around the reamer.



TIP

Referring to the epicondylar axis may facilitate the femoral rotation setting.

Once the position is deemed satisfactory, fix the 4in1 cutting block to the bone by means of sword pins or, alternatively, two cancellous bone screws.



4in1 cutting block

● cancellous bone screws

● sword pins



CAUTION

Cancellous bone screw fixation is not compatible with the use of trial distal wedges.

NOTICE: For 11 mm or 13 mm diameters extension stems only. Slip the ring spacer onto the 15.5 femoral reamer. Keeping the T/F offset positioner at the 0 mm position, ream with this reamer until the stopper is reached to create the room for the extension stem connection.



Finally remove the offset positioner, the offset reduction bush and the reamer by using the T-handle.

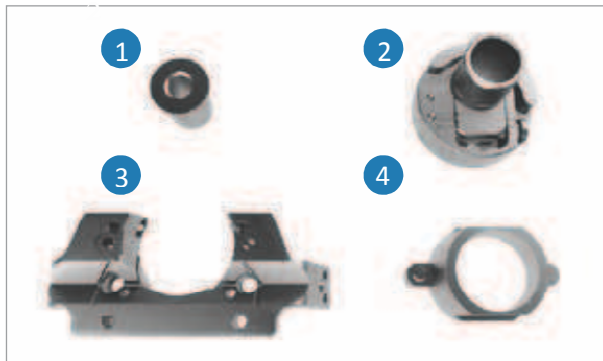
19 FEMORAL OFFSET AND ROTATION (3 mm offset option)

If the correct anterior/posterior position cannot be reached without offset, a 3 mm offset option is available.

CAUTION
On the femur side, the use of a 5 mm offset is not allowed.

The femoral offset finding system consists of:

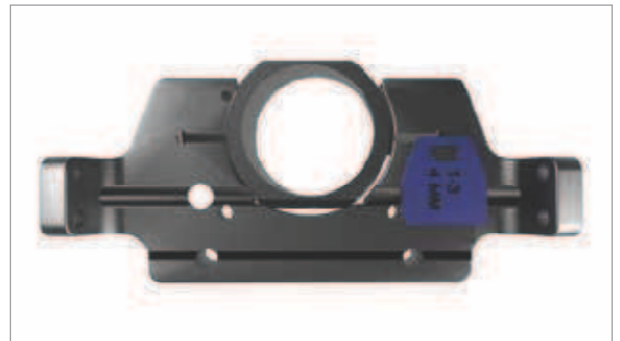
- Offset Positioner Reduction Bush (1)
- T/F Offset Positioner (2)
- 4/1 cutting guide (6 sizes) (3)
- Offset Tapered Bush (4)



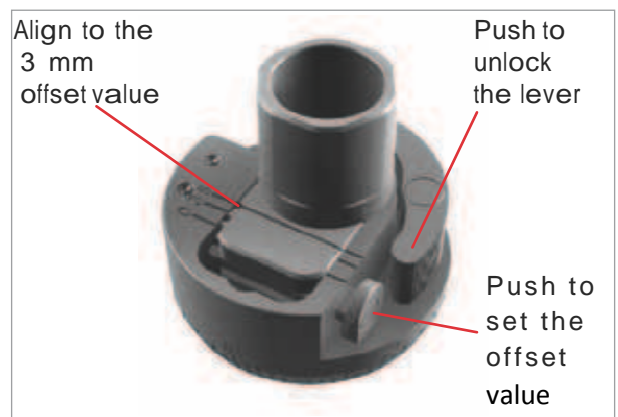
Assemble the 4/1 cutting guide of the selected size and the offset tapered bush according to the operated leg (left or right), and secure the connection screw.



OPTION
If a distal wedge is necessary it must be clipped onto the correct side on the back of the 4in1 cutting block before positioning the guide on femur.



Open the locking lever on the T/F offset positioner, push the lateral button, slide the body to align the mark to the 3 mm offset value.



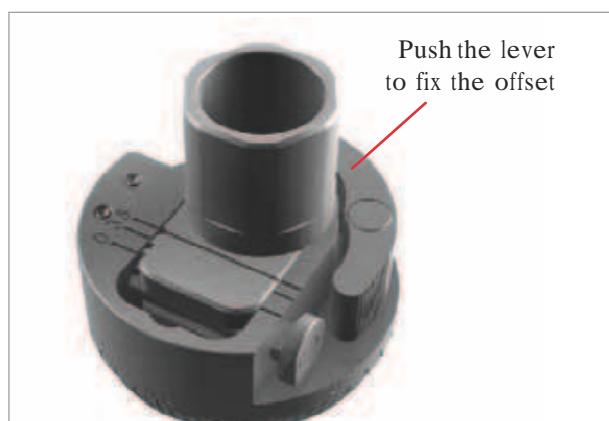
Assemble the T/F offset positioner with the offset tapered bush and the 4in1 cutting block. Reinsert the last reamer used into the femoral intramedullary canal. Slide the assembly and center it on to the reamer by inserting the offset reduction bush.



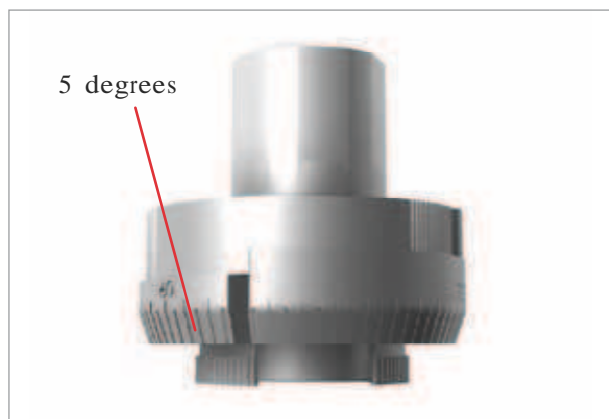
Use the fork wrench ("OFFSET POSITIONER" side) to set the offset of the 4in1 cutting guide in order to obtain the best coverage of the resection plane and check the anterior cut level using the sickle finger.



When the position of the 4in1 cutting guide is deemed satisfactory, fix the offset position by pushing the lever.



The angles marked on the T/F offset positioner range from 0 to 360 degrees. Each nick corresponds to 5°.



Read the value on the T/F offset positioner metal ring which corresponds to the laser mark on the 4in1 cutting block (red line).



! CAUTION

The angle indicated on the T/F offset positioner and the offset selected must be noted. These values must be reproduced during both trial and final femoral implant positioning phase.

Once the femoral offset has been defined, adjust the femoral rotation by manually rotating the 4in1 cutting guide.



💡 TIP

Referring to the epicondylar axis may facilitate the femoral rotation setting.

Once the position is deemed satisfactory, fix the 4in1 cutting block to the bone by means of sword pins or, alternatively, two cancellous bone screws.



4in1 cutting block

● *cancellous bone screws*

● *sword pins*

NOTICE: Cancellous bone screw fixation is not compatible with the use of trial distal wedges.

NOTICE: For 11 mm or 13 mm diameters extension stems only.

Remove the offset reduction bush and the reamer by using the T-handle.

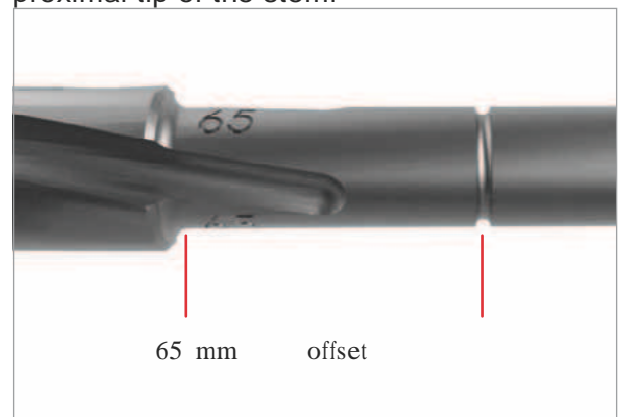
Keeping the T/F offset positioner at the 3 mm position, ream with the 15.5 femoral reamer (without ring spacer) until the stopper is reached to create the room for the extension stem connection.

Set the T/F offset positioner at the 0 mm position. Slip the ring spacer onto the 15.5 femoral reamer. Ream until the stopper is reached to create the room for the offset adapter.



Remove the T/F offset positioner and the offset tapered bush.

Reinsert the last intramedullary reamer used and further ream until the corresponding OFFSET mark is aligned to the distal cut to create the room for the proximal tip of the stem.



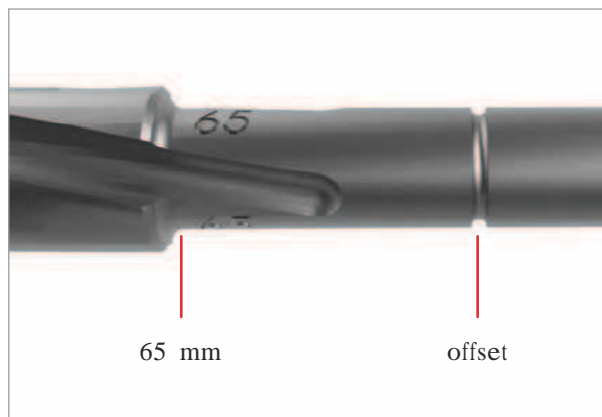
Remove the reamer using the T-handle.

NOTICE: For diameters >13 mm extension stems only. Remove the offset reduction bush and the reamer by using the T-handle. Set the T/F offset positioner at the 0 mm position. Slip the ring spacer onto the 15.5 femoral reamer. Ream until the stopper is reached to create the room for the offset adapter.



Remove the T/F offset positioner and the offset tapered bush.

Reinsert the last intramedullary reamer used and further ream until the corresponding offset mark is aligned to the distal cut to create the room for the proximal tip of the stem.



Remove the reamer using the T-handle.

20 ANTERIOR, POSTERIOR RESECTIONS AND CHAMFERS

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.



Then perform the posterior and anterior chamfers through the dedicated slots integrated in the 4in1 cutting block. Finally remove the upper coverage.

21 FEMORAL BOX PREPARATION

Push the buttons on the femoral box cutting guide (available on 3 sizes) centering this guide on the dedicated holes located on the 4/1 cutting block. Perform the box using an osteotome or reciprocating saw.



Finally remove the femoral box cutting guide, the pins (or screws) and the 4in1 cutting block.

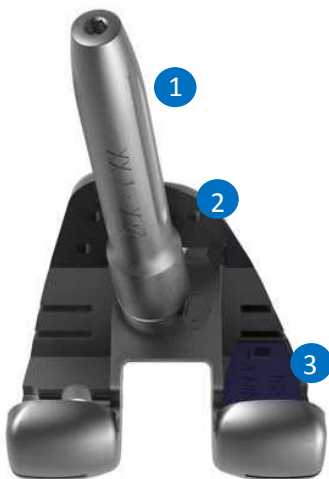
22 TRIAL FEMORAL COMPONENT (no femoral offset)

Screw the trial extension stem (1) of the correct size on the trial femoral component (2).

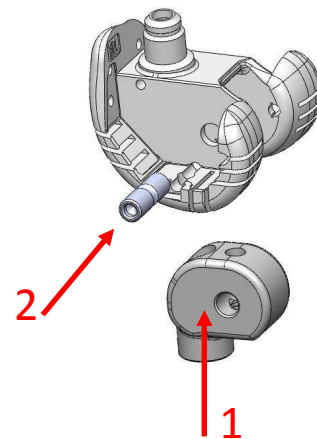


OPTION

If a distal wedge is needed, assemble the trial distal wedge (3) on the correct side of the trial femoral component.



NOTICE: The trial hinge must now be assembled with the trial femur. If not, follow these steps:



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



CAUTION

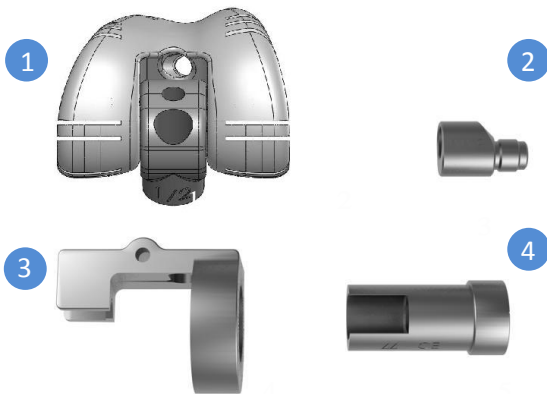
In case of impingement between the trial box and the internal rim of the medial condyle during trial femoral implant insertion, enlarge the medial side of the femoral box by using an osteotome.

23 TRIAL FEMORAL COMPONENT (3 mm offset option)

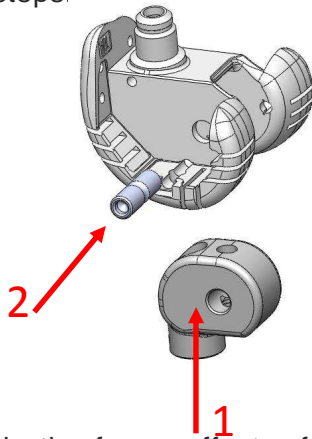
Before impacting the trial femoral component, the offset previously validated must be reproduced.

The femoral offset reproducing system consists of:

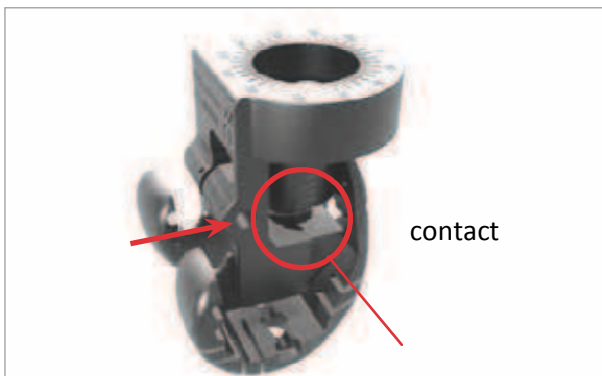
- Hinge Trial Femur (1)
- Trial Offset (3 mm only) (2)
- Femur Offset Reference (left/right) (3)
- Offset Adaptor (3 mm only) (4)



NOTICE: The trial hinge must now be assembled with the trial femur. If not, follow these steps:



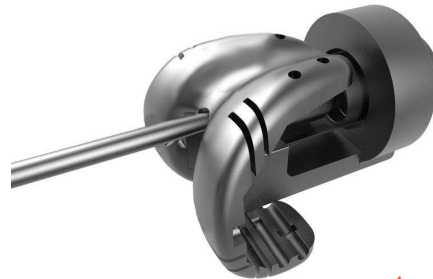
Assemble the femur offset reference on the trial femoral component, so that it connects with the box (red circle), then tighten the screw to secure the connection (red arrow).



Insert the 3 mm offset into the corresponding offset adapter. Insert the assembly into the femur offset reference and push the top to clip the trial femoral offset onto the trial box. Turn the knob to align the laser mark (red nick) to the angle validated and previously noted during the femoral offset definition. Each nick on the metal ring corresponds to 5 degrees. Screw the internal screw (yellow circle) to fix the selected angle.



Secure the screw in front of the trial femoral component to fix the offset position.



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

Once the offset is fixed, unscrew and remove the offset adapter and the femur offset reference.



Screw the extension stem of the correct size onto the offset. Use the fork wrench (IMPLANT OFFSET side) to prevent offset rotation while screwing the stem.



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



OPTION

If any femoral distal wedge is necessary, it must be clipped onto the correct side (medial or lateral) of the trial femoral component.

24 FEMORAL POSTERIOR WEDGE (option)

In cases of bone loss, specific metal wedges (augmentations) can be assembled on the posterior condyles either on medial, lateral or both sides. The following table summarizes the available posterior femur augmentations.

POSTERIOR FEMUR AUGMENTATION

Thickness	Size
5 mm	1 · 2 · 3 · 4 · 5 · 6
10 mm	1 · 2 · 3 · 4 · 5 · 6

The cuts for the posterior wedges can be carried out through dedicated slots on the trial femoral component.

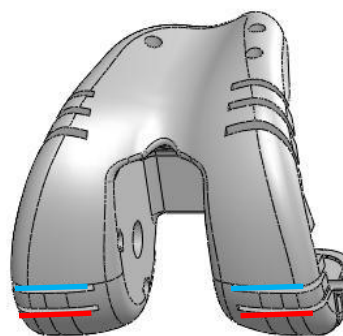


OPTION

If needed stabilize the trial femur with pins.

CAUTION

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



10 mm posterior wedge

5 mm posterior wedge

CAUTION

12 mm thickness distal wedges cannot be used in combination with any posterior wedge. For the complete matching capabilities of GMK® Revision femoral wedges please refer to Selection of the prosthetic components – Size matching.

25 PATELLA

Should the pre-operative planning or the intra-operative clinical evidence lead to patella implant revision (inset or resurfacing), please refer to the GMK® PRIMARY surgical technique described here below.

2 5.1 Resurfacing patella

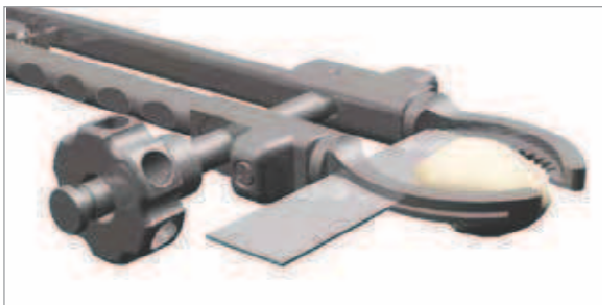
Lock the patella resection guides into the patellar clamp. After carefully releasing the periphery of the patella, position the resection guides at the appropriate resection level, with the assistance of the patellar stylus assembled in the slot of the resection guide.



CAUTION

Check that at least 13 mm of bone remains after resection.

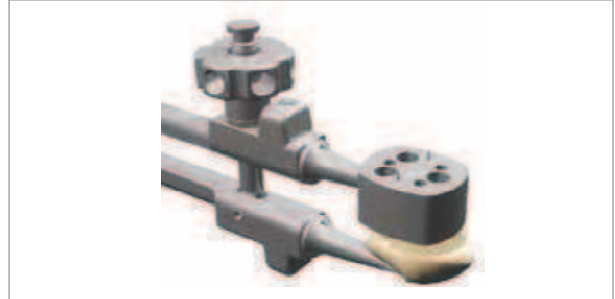
Firmly lock the clamp with the screwing thumbwheel and perform the patellar resection through the slots of the resection guides.



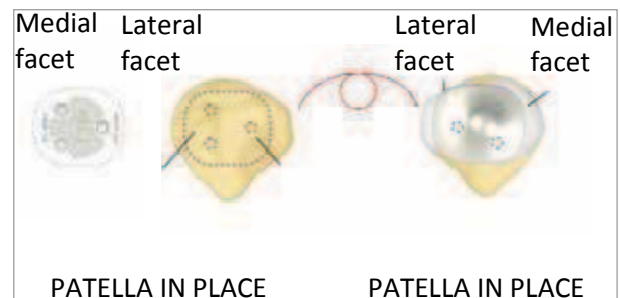
Select the correct size of the patella implants with the help of the patellar templates.



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 has to be positioned on the lateral facet of the patella and the other two pegs on the medial one.



In order to avoid any malpositioning of the patellar component, read the markings carefully on the drilling guide. For a medial approach (lateral eversion of the patella), the drilling guide has to be assembled to the clamp, so that the side with the EXT marking is facing upwards. For a lateral approach (medial eversion of the patella), the drilling guide has to be flipped, so that the INT marking can be read.



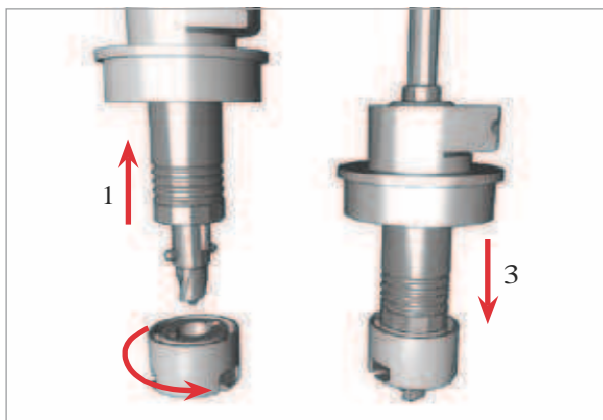
Apply the drill guide on the resected surface of the patella and drill the three holes using the patellar pegs drill. After having removed the drilling guide, assemble the patellar impactor on the patellar clamp and impact the appropriate sized trial patella.

Finally, reduce the patella and test the knee through its full range of motion.

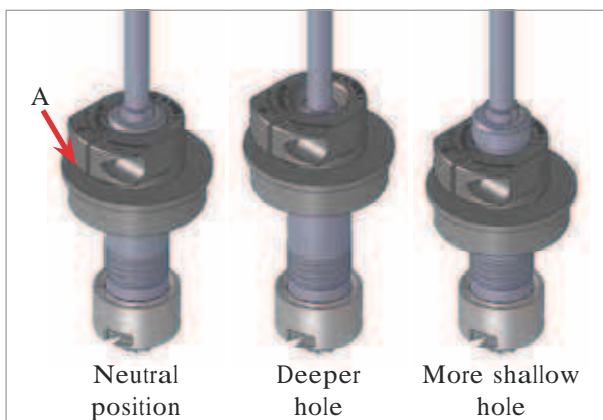
2 5.2 Inset patella

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

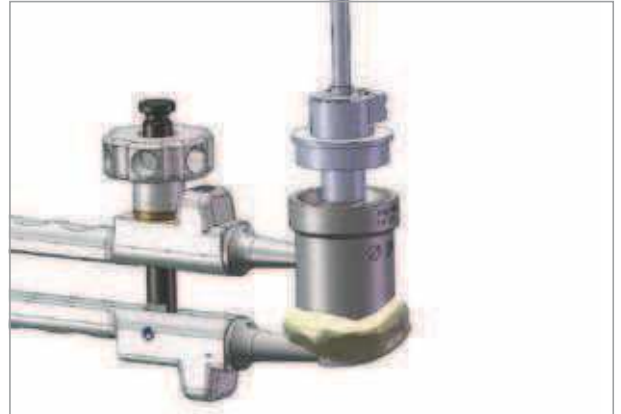
To assemble the reamer of the suitable size to the reamer holder, pull up the locking mechanism of the reamer holder, insert the reamer, turn it 90° and release the locking mechanism, making sure that the reamer is firmly fixed.



Before drilling, check that the depth gauge (A) is in neutral position. If necessary the reaming depth can be modified turning the depth gauge (1 turn = 1 mm).



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



CAUTION
The drill hole should be shallow enough to leave a minimum wall thickness of 13 mm.

Impact the trial inset patella of the chosen size using the dedicated impactor assembled to the patellar clamp. Smooth out the bone rim using bone forceps or the oscillating saw. Reduce the patella and test the knee through its full range of motion.



26 TRIAL IMPLANT EVALUATION

Position the trial insert of the validated thickness (crf par. 14 Gap control) onto the trial tibial component.

Then put the knee joint at 90° flexion. Insert the trial hinge post extension of the validated length into the trial hinge post and screw it to the tibial puncher by using the screwdriver.



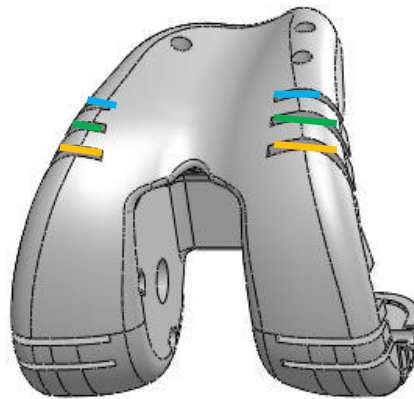
Reduce the patella and test the knee through its full range of motion.

OPTION

After testing the articulation, it is still possible to move more distally the joint line position. In such a case, remove the trial femoral component and clip a thicker trial distal wedge onto it.

Corrections wedges are available in the following thickness: 2 mm, 4 mm, 6 mm.

Three dedicated slots are available on the trial femoral component to perform the correction: 4, 8, 12 mm.



12 mm distal wedge

8 mm distal wedge

4 mm distal wedge

NOTICE: The trial distal wedge thickness corresponds (mm) to how much the joint line will be moved distally.

NOTICE: The value marked near the slot where the distal recut is performed (i.e. 4 mm, 8 mm or 12 mm) corresponds to the final distal wedge to be implanted.

27 FINAL TIBIAL IMPLANT ASSEMBLING

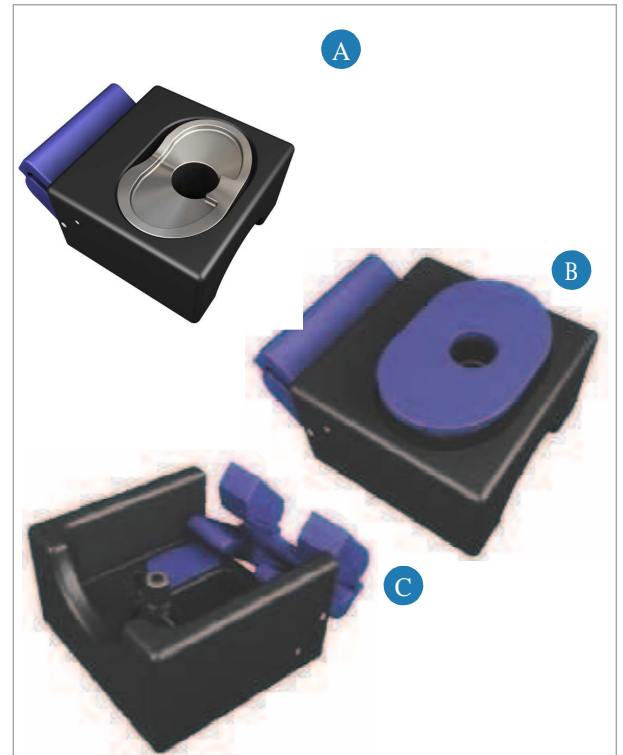
! CAUTION

Before assembling the final implant verify that all the connection surfaces (threaded and tapered) are clean and dry. It is suggested to change the surgical gloves with clean ones before assembling the final implant.

Use the 12 Nm wrench only to screw an extension stem on the offset.

Be careful not to damage the articular surfaces while assembling the final implants.

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



27.1 No tibial offset

The assembling system includes:

- Base for implant assembling (1)
- Assembling hammer (2)
- Bush for tibial impaction (3)
- Handle for torque limiter (4)
- 6 Nm torque limiter (5)
- 6 Nm torque wrench adapter (6)



Position the validated extension stem on the implant taper (D) and impact the stem by using the assembling hammer (E).



CAUTION

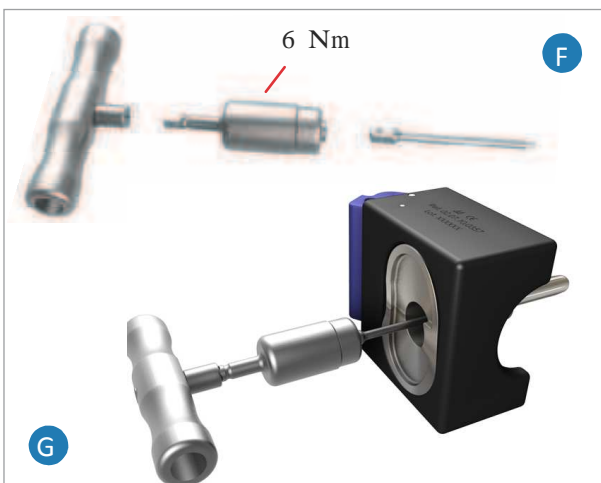
Before impacting, make sure that the cap at the top of the hammer is firmly screwed.

While impacting, make sure to be on the most stable side of the surgical table.

Be careful not to damage the articular surfaces while assembling the final implants.

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

Rotate the base 90° with the tibial implant in place and remove the bush. Assemble the 6 Nm wrench (F) and tighten the fixing screw on the offset (G).



NOTICE: The screw is packaged with the extension stem.

CAUTION

It is strictly forbidden to use the 12 Nm torque wrench with the fixing screw.

The correct torque is reached when the torque limiter is released. Then extract the assembled implant from the base.

OPTION

If any tibial wedge is needed, screw it to the tibial component by using the screwdriver. The final fixation between the tibial component and the bone is obtained by 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.

27.2 Tibial offset option (3 mm or 5 mm)

CAUTION

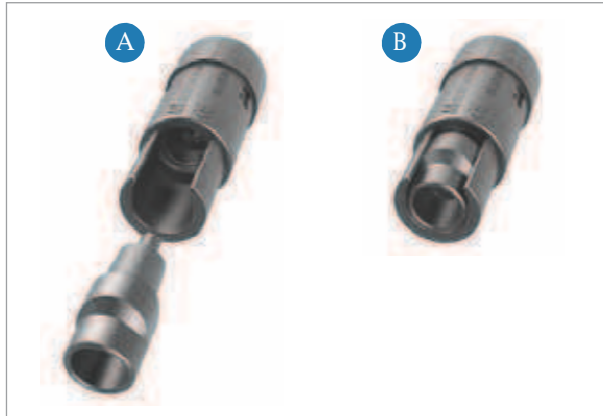
If both a tibial offset and a tibial wedge have to be used, it is mandatory to assemble the final offset and the extension stem before cementing the wedge.

The assembling system includes:

- Base for implant assembling (1)
- Assembling hammer (2)
- Bush for tibial impaction (3)
- Offset Adapter for Assembling Hammer (4)
- Handle for torque limiter (5)
- 6 Nm torque limiter (6)
- 6 Nm torque wrench adapter (7)
- 12 Nm torque limiter (8)
- 12 Nm torque wrench adapter (9)



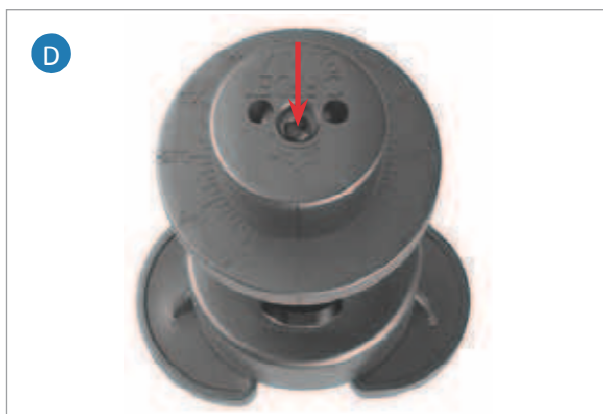
Insert the offset into the corresponding offset adapter (3 mm or 5 mm) (A), clipping it until the retention mechanism is engaged (B).



Position the tibial offset reference onto the final tibial component (C). Only one orientation is allowed (red arrows show the wings to be centered upon).



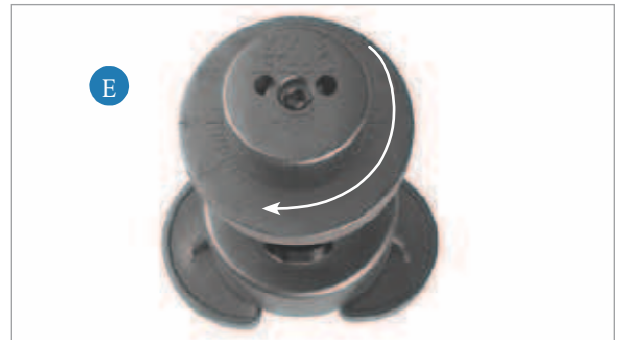
Insert the offset adapter assembled with the offset into the tibial offset reference (D).



CAUTION

Do not drop the offset adapter onto the implant taper to prevent any premature offset engagement.

Turn the knob to reproduce the offset angle previously validated (E). Impact by means of the screwdriver handle the top of the offset adapter to fix the offset rotation.



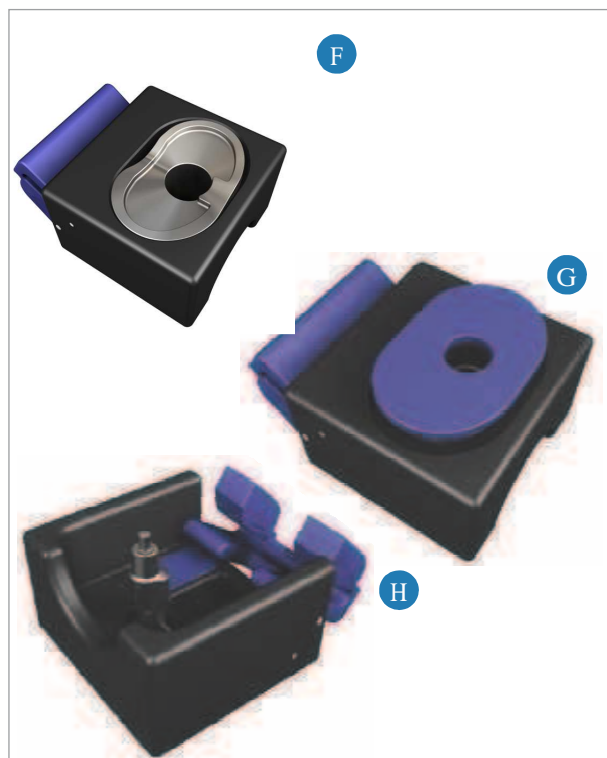
Remove the offset system from the tibial component.

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 assembling (F). Lean the bush for tibial impaction over the tibial tray (G), keep it in position and rotate the assembly upside down (H).

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



Screw the offset adapter for assembling hammer onto the offset (I) and impact by using the assembling hammer (L).



! CAUTION

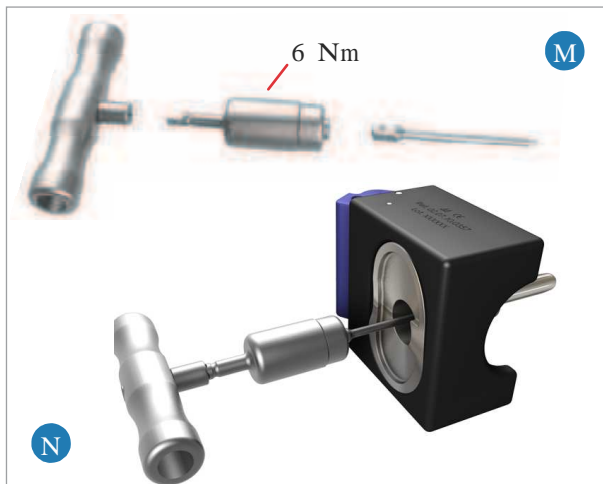
Before impacting, make sure that the cap at the top of the hammer is firmly screwed. While impacting, make sure to be on the most stable side of the surgical table. While impacting, keep the base for implant assembling still by using two hands.

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

Finally unscrew the offset adapter for assembling hammer.

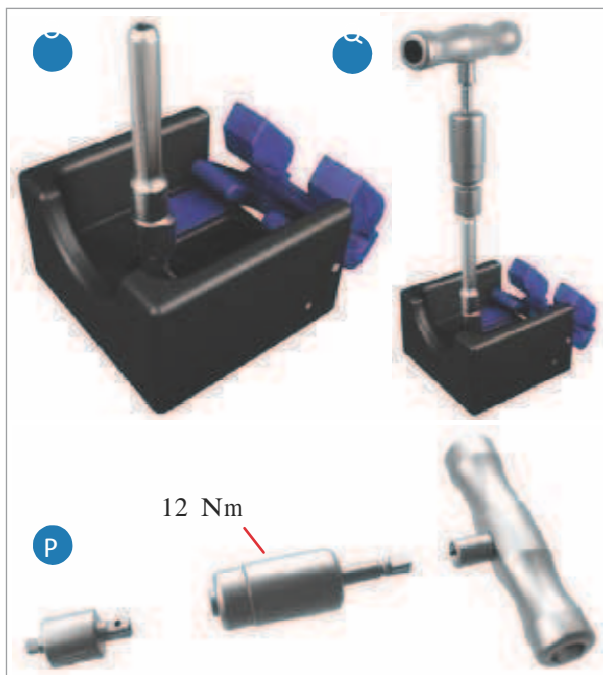
Rotate the base 90° with the tibial implant in place and remove the bush. Assemble the 6 Nm wrench (M) and tighten the fixing screw on the offset (N).

NOTICE: The screw is packaged with the extension stem.



CAUTION
It is strictly forbidden to use the 12 Nm torque wrench with the fixing screw.

Rotate again the base 90° with the tibial implant in place and insert the bush between the implant surface and the table. Screw the extension stem on the offset (O). Assemble the 12 Nm wrench (P), and tighten the stem on the offset (Q).



CAUTION

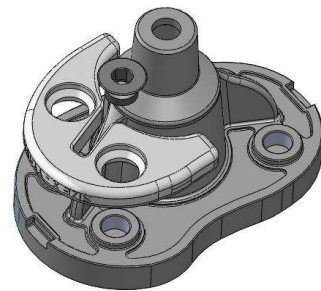
The correct torque is reached when the torque limiter is released.

OPTION

The fork wrench ("FINAL IMPLANT" side) may be used to keep the offset still whilst screwing the stem. Then extract the assembled implant from the base.

OPTION

If any tibial wedge is needed, screw it to the tibial component by using the screwdriver. The final fixation between the tibial component and the bone is obtained by 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.

28 FINAL FEMORAL IMPLANT ASSEMBLING

! CAUTION

Before assembling the final implant verify that all the connection surfaces (threaded and tapered) are clean and dry. It is suggested to change the surgical gloves with clean ones before assembling the final implant.

Use the 12 Nm wrench only to screw an extension stem on the offset.

Be careful not to damage the articular surfaces while assembling the final implants.

28.1 No femoral offset

! CAUTION

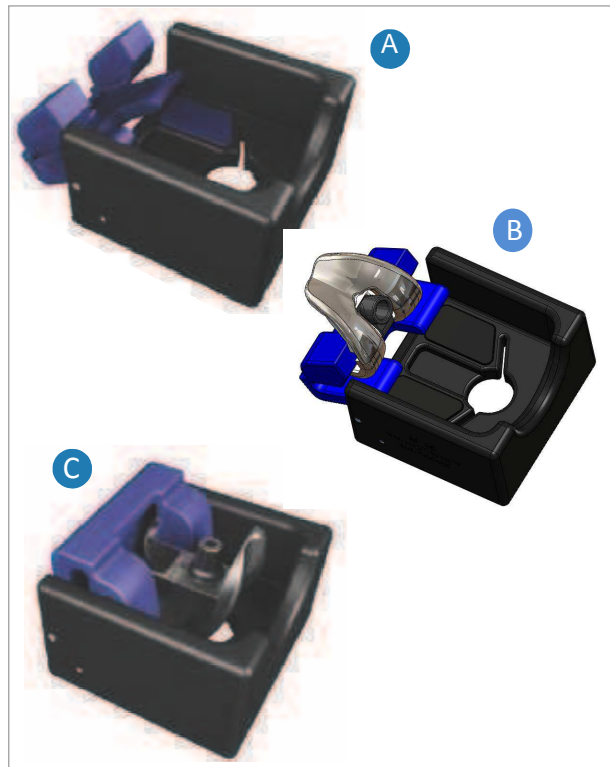
If any femoral wedge and an extension stem have to be used, it is mandatory to assemble the extension stem before screwing the wedges.

The femoral assembling system includes:

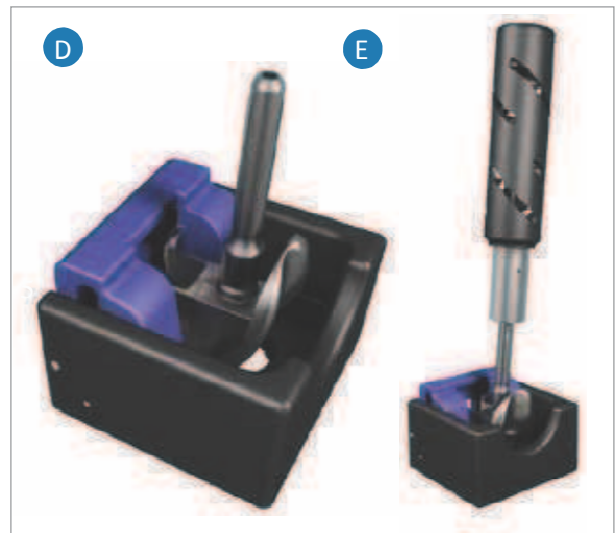
- Base for implant assembling (1)
- Assembling hammer (2)
- Handle for torque limiter (3)
- 6 Nm torque limiter (4)
- 6 Nm torque wrench adapter (5)



Open the blue mobile part of the base (A), insert the posterior condyles of the final femoral component into the dedicated slots (B) and close the blue part towards the base (C).



Position the validated extension stem on the implant taper (D) and impact the stem by using the assembling hammer (E).





CAUTION

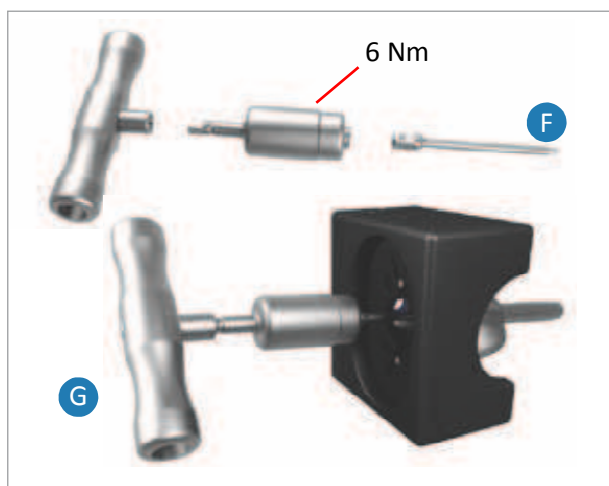
Before impacting, make sure that the cap at the top of the hammer is firmly screwed.

While impacting, make sure to be on the most stable side of the surgical table.

While impacting, keep still the base for implant assembling by using two hands.

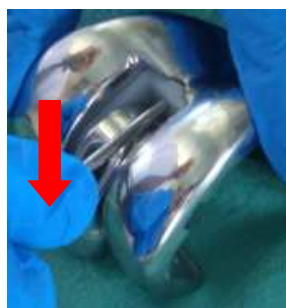
NOTICE: Be aware of the noise generated by the impaction stroke.

Rotate the base 90° with the femoral implant in place. Assemble the 6 Nm wrench (F) and tighten the fixing screw on the offset (G).



NOTICE: The screw is packaged with the extension stem.

NOTICE: Before fixing the screw, check that the hinge post bush is not covering the screw hole. If yes, use a pin to disengage the polyethylene bush as shown in the picture.



CAUTION

It is strictly forbidden to use the 12 Nm torque wrench with the fixing screw.

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

Then extract the assembled implant from the base.



OPTION

If a femoral wedge is needed, assemble the validated wedge with its screw, packaged with the wedge itself. Position both on the femoral component and pre-turn the screw with the dedicated ball-head wrench.



Finally tighten the screw by using the screwdriver (H).



Distal wedge



Posterior wedge

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.

28.2 Femoral offset option (3 mm)

CAUTION

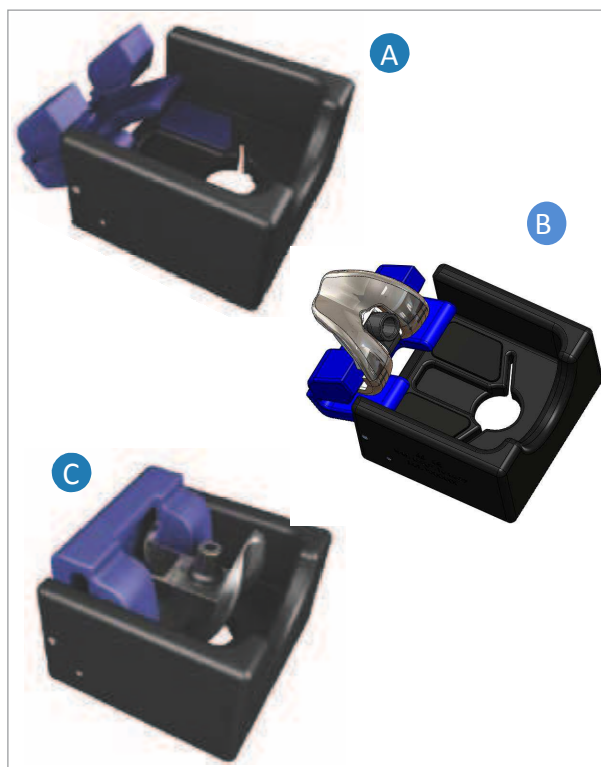
If both a femoral offset and a femoral wedge have to be used, it is mandatory to assemble the final offset and the extension stem before screwing the wedges.

The femoral assembling system includes:

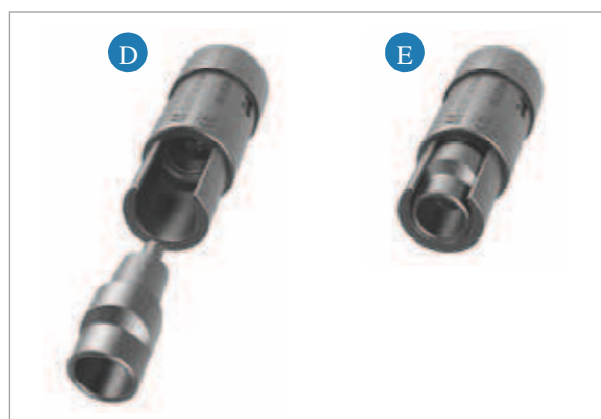
- Base for implant assembling (1)
- Assembling hammer (2)
- Offset Adapter for Assembling Hammer (3)
- Handle for torque limiter (4)
- 6 Nm torque limiter (5)
- 6 Nm torque wrench adapter (6)
- 12 Nm torque limiter (7)
- 12 Nm torque wrench adapter (8)



Open the blue mobile part of the base (A), insert the posterior condyles of the final femoral component into the dedicated slots (B) and close the blue part towards the base (C).



Insert the 3 mm offset into the corresponding offset adapter (D), clipping it until the retention mechanism is engaged (E).



Position the femur offset reference onto the femoral component (F).



Turn the knob to reproduce the offset angle previously validated (I). Impact by means of the screwdriver handle the top of the offset adapter to fix the offset rotation.



Insert the offset adapter assembled with the offset into the femur offset reference (G).

CAUTION
Do not drop the offset adapter onto the implant taper to prevent any premature offset engagement.



Remove the offset system from the femoral component (L).



Then tighten the securing screw (H).



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

Screw the offset adapter for assembling hammer onto the offset (M) and impact the offset by using the assembling hammer (N).



! / CAUTION

Before impacting, make sure that the cap at the top of the hammer is firmly screwed.

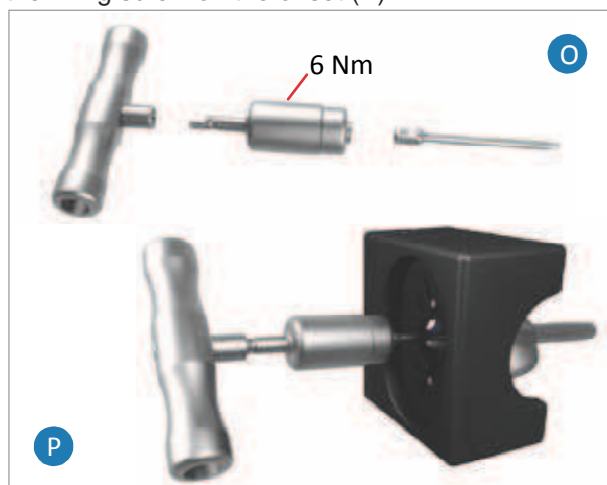
While impacting, make sure to be on the most stable side of the surgical table.

While impacting, keep the base for implant assembling still by using two hands.

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

Finally unscrew the offset adapter for assembling hammer.

Rotate the base 90° with the femoral implant in place. Assemble the 6 Nm wrench (O) and tighten the fixing screw on the offset (P).



NOTICE: The screw is packaged with the extension stem.

NOTICE: Before fixing the screw, check that the hinge post bush is not covering the screw hole. If yes, use a pin to disengage the polyethylene bush as shown in the picture.



! / CAUTION

It is strictly forbidden to use the 12 Nm torque wrench with the fixing screw.

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

Rotate again 90° the base with the implant in place. Screw the validated extension stem on the offset thread (Q).



Assemble the 12 Nm wrench (R) and tighten the extension stem on the offset (S).

✓ / OPTION

The fork wrench ("FINAL IMPLANT " side) may be used to keep the offset still whilst screwing the stem.





OPTION

If a femoral wedge is needed, assemble the validated wedge with its screw, packaged with the wedge itself. Position both on the femoral component and pre-turn the screw with the dedicated ball-head wrench.



Finally tighten the screw by using the cardanic screwdriver (T).



Distal wedge



Posterior wedge

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.

29 FINAL IMPLANT



CAUTION

When implanting the GMK HINGE prosthesis it is always mandatory to implant an extension stem both on the tibial and the femoral components.

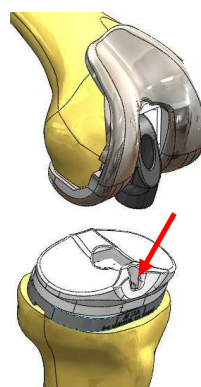
Engage the hinge polyethylene bush into the intercondylar notch by rotating upwards the hinge post.



Impact the femoral and tibial components on bone. Pay attention not to impact on the hinge post. Cement fixation is required.



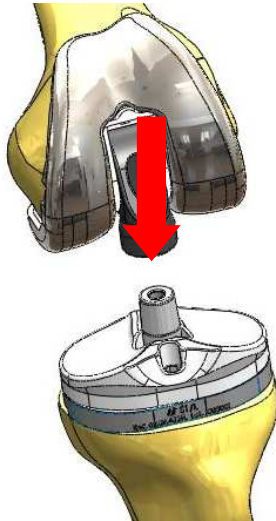
Flex the knee at 90° and place the final insert into the tibial baseplate. Then fix to the tibial tray the anterior screw, packaged with the insert.



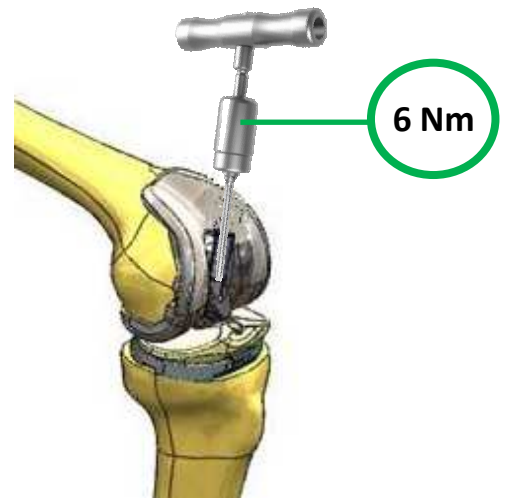
3 Nm

CAUTION: Use the 3 Nm torque wrench to fix this screw.

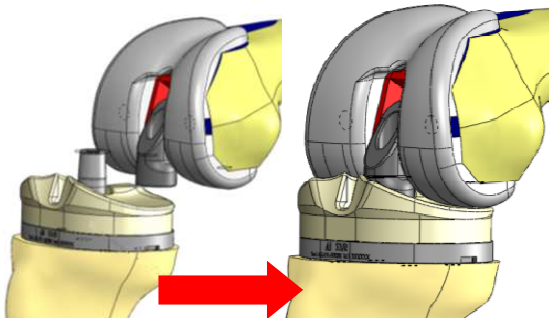
Insert the hinge post extension, packaged together with the polyethylene inlay, into the tibial tray all the way down. The tapered extremity must face upwards.



Engage the Morse taper between the hinge post extension and the hinge post by tightening the screw with the provided 6 Nm torque wrench. This screw is packaged together with the insert.



Reduce the hinge-post mechanism.
No huge distraction of the joint is required.



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

30 SELECTION OF THE PROSTHETIC COMPONENTS

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

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

Table 1 summarizes the matching capabilities between the GMK HINGE femoral and tibial components.

		GMK HINGE Tibial Component					
GMK HINGE Femoral Component		#1	#2	#3	#4	#5	#6
	#1	V	V	X	X	X	X
	#2	V	V	V	X	X	X
	#3	X	V	V	V	X	X
	#4	X	X	V	V	V	X
	#5	X	X	X	V	V	V
	#6	X	X	X	X	V	V

Table 1: GMK HINGE femoral and tibial components size matching

V = allowed combination
X = forbidden combination

Table 2 summarizes the matching capabilities between the GMK HINGE tibial component and the GMK HINGE tibial insert.

		GMK HINGE Tibial insert					
GMK HINGE tibial components		#1	#2	#3	#4	#5	#6
	#1	V	X	X	X	X	X
	#2	X	V	X	X	X	X
	#3	X	X	V	X	X	X
	#4	X	X	X	V	X	X
	#5	X	X	X	X	V	X
	#6	X	X	X	X	X	V

Table 2: GMK HINGE tibial components and tibial insert size matching

V = allowed combination
X = forbidden combination

The 3 mm offset adapter can be used both for the GMK HINGE tibial and femoral components.
The 5 mm offset adapter can be used for the GMK HINGE tibial component only.
It is forbidden to implant an offset adapter without an extension stem.

Distal and posterior femoral augments are intended to be mechanically attached by means of a screw to the 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 distal or posterior augment can be use either on medial or lateral side.

Table 3 summarizes the matching capabilities between the GMK HINGE distal and posterior femoral augments.

		GMK HINGE Femoral Component											
		#1		#2		#3		#4		#5		#6	
	Posterior Femoral Wedge	5 mm	10 mm	5 mm	10 mm	5 mm	10 mm	5 mm	10 mm	5 mm	10 mm	5 mm	10 mm
Distal Femoral Wedge	4 mm	V	V	V	V	V	V	V	V	V	V	V	V
	8 mm	V	V	V	V	V	V	V	V	V	V	V	V
	12 mm	X	X	X	X	X	X	X	X	X	X	X	X

Table 3: GMK HINGE distal and posterior femoral augments size matching

V = allowed combination

X = forbidden combination

Tibial augments are intended to be mechanically attached by means of a screw to the GMK HINGE tibial component from the same size or one size less.

The same tibial augment can be use either on medial or lateral side. Only one augment per side can be used.

No limitations exist in combining an extension stem and tibial or femoral components: an extension stem can be implanted with GMK HINGE tibial and femoral component from very size and side (right and left).

No limitations exist in combining an extension stem with an offset adapter: an offset adapter can be matched with extension stem from any diameter and length.

No limitations exist in combining a patellar and a femoral components: for both versions (resurfacing and inset) every patellar component size matches with every femoral component size.

31 IMPLANTS NOMENCLATURE

FEMORAL COMPONENT		
Right	#	Left
02.09.2601R	1	02.09.2601L
02.09.2601R	2	02.09.2601L
02.09.2603R	3	02.09.2603L
02.09.2604R	4	02.09.2604L
02.09.2605R	5	02.09.2605L
02.09.2606R	6	02.09.2606L

FIXED TIBIAL TRAY		
Right	#	Left
02.09.4001R	1	02.09.4001L
02.09.4002R	2	02.09.4002L
02.09.4003R	3	02.09.4003L
02.09.4004R	4	02.09.4004L
02.09.4005R	5	02.09.4005L
02.09.4006R	6	02.09.4006L

FIXED TIBIAL INSERT						
Ref.	#	Thickness [mm]		Ref.	#	Thickness [mm]
02.09.0110H	1	10		02.09.0210H	2	10
02.09.0112H		12		02.09.0212H		12
02.09.0114H		14		02.09.0214H		14
02.09.0117H		17		02.09.0217H		17
02.09.0120H		20		02.09.0220H		20
02.09.0123H		23		02.09.0223H		23
02.09.0126H		26		02.09.0226H		26

FIXED TIBIAL INSERT						
Ref.	#	Thickness [mm]		Ref.	#	Thickness [mm]
02.09.0310H	3	10		02.09.0410H	4	10
02.09.0312H		12		02.09.0412H		12
02.09.0314H		14		02.09.0414H		14
02.09.0317H		17		02.09.0417H		17
02.09.0320H		20		02.09.0420H		20
02.09.0323H		23		02.09.0423H		23
02.09.0326H		26		02.09.0426H		26

FIXED TIBIAL INSERT						
Ref.	#	Thickness [mm]		Ref.	#	Thickness [mm]
02.09.0510H	5	10		02.09.0610H	6	10
02.09.0512H		12		02.09.0612H		12
02.09.0514H		14		02.09.0614H		14
02.09.0517H		17		02.09.0617H		17
02.09.0520H		20		02.09.0620H		20
02.09.0523H		23		02.09.0623H		23
02.09.0526H		26		02.09.0626H		26

PATELLA RESURFACING	
#	Ref
1	02.07.0033RP
2	02.07.0034RP
3	02.07.0035RP
4	02.07.0036RP

PATELLA INSET	
#	Ref.
24 mm	02.07.0041IP
28 mm	02.07.0042IP
32 mm	02.07.0043IP

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

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

FEMORAL POSTERIOR WEDGES 5 mm		FEMORAL POSTERIOR WEDGES 10 mm	
#	Ref.	#	Ref.
1	02.05.01PW	1	02.07.110FPW
2	02.05.02PW	2	02.07.210FPW
3	02.05.03PW	3	02.07.310FPW
4	02.05.04PW	4	02.07.410FPW
5	02.05.05PW	5	02.07.510FPW
6	02.05.06PW	6	02.07.610FPW

FEMORAL DISTAL WEDGES 4 mm		FEMORAL DISTAL WEDGES 8mm		FEMORAL DISTAL WEDGES 12 mm	
#	Ref.	#	Ref.	#	Ref.
1	02.07.104FDW	1	02.05.01DW	1	02.07.112FDW
2	02.07.204FDW	2	02.05.02DW	2	02.07.212FDW
3	02.07.304FDW	3	02.05.03DW	3	02.07.312FDW
4	02.07.404FDW	4	02.05.04DW	4	02.07.412FDW
5	02.07.504FDW	5	02.05.05DW	5	02.07.512FDW
6	02.07.604FDW	6	02.05.06DW	6	02.07.612FDW

TIBIAL AUGMENTATION 5 mm		TIBIAL AUGMENTATION 10 mm	
#	Ref.	#	Ref.
0	02.09.TA005	0	02.09.TA010
1	02.09.TA105	1	02.09.TA110
2	02.09.TA205	2	02.09.TA210
3	02.09.TA305	3	02.09.TA310
4	02.09.TA405	4	02.09.TA410
5	02.09.TA505	5	02.09.TA510
6	02.09.TA605	6	02.09.TA610

OFFSET CONNECTOR	
Ref.	OFFSET [mm]
02.07.0003	3
02.07.0005	5

32 INSTRUMENTATION NOMENCLATURE

02.07S.500		
Reference	Description	Quantity
02.07.10.3508	Trial offset 3mm	2
02.07.10.3509	Trial offset 5mm	1
02.07.10.9640	3 mm offset adaptor	1
02.07.10.9641	5 mm offset adaptor	1
02.07.10.2097	5 mm. Hexagonal "T" handle	1
02.07.10.3556	Tibial Offset positioner	1
01.26.10.0011	Cardan hex-head screwdriver 3,5 mm	1
02.02.10.0128	Drill bit (ø 9, L 162mm) Hudson coupling	1
02.07.10.0266	Screw HA5 - Lenght 35 mm	3
02.02.10.0130	Drill bit ø 3.2 L 130	1
02.02.10.0145/A	Pins ø 3.2, L 70 mm	4
02.02.10.0145/B	Pins ø 3.2, L 90 mm	4
02.07.10.2294	Pin Ø3.2 L=40 ISO5835-Meche-Head-Triangle	3
02.07.10.2295	Pin Ø3.2 L=70 ISO5835-Meche-Head-Triangle	3
02.07.10.2297	Pin Ø3.2 L=70 ISO5835-Meche-Triangle	3
02.07.10.2194	Sword Pin Ø3.2 L=22mm	4
02.08.10.0120	UKM Pin Ø 3.2 L=55	4
02.07.10.1044	Postero stabilization peg	1
02.07.10.1007	Posterostabilized Shaft	1
1.100	Femoral Intramedullary rod ø 8 mm	1
02.07.10.2020	Handle for safe Guide reamer	1
02.07.10.0435	Femur Drill Bit Ø15.5 mm Gmk Revision Hudson	1
02.07.10.9653	Tibial Drill Bit Ø15.5 mm GMK Revision - Hudson	1
02.07.10.0436	Ring Spacer for Drill Bit Ø15.5 mm	1
02.07.10.0077	Medium Sickle Finger	1
02.02.10.0146	Pins impactor	2
02.07.10.2281	Pin adaptor Hudson coupling - Asssembly	1
02.02.10.0788	Pins extractor	1
2.170	Sliding handle	1
1.113	Screwdriver 3.5 mm	1
02.07.10.3566	Tibial Offset reduction bush	1
02.07.10.3580	Offset fork wrench	1
02.07.10.2038	Safe Guide Reamer Hudson Adaptor	1
02.07.10.1017	Femoral box chisel	1
02.02.10.0173	Manual rasp	1
02.07.10.9647	Left Femur offset reference	1
02.07.10.9648	Right Femur offset reference	1
02.07.10.9649	Tibial offset reference	1
02.02.10.0001	Tibial impactor	1
02.07.10.8811	GMK Revision- Template 100%	1
02.07.10.8812	GMK Revision- Template 110%	0
02.07.10.8813	GMK Revision- Template 115%	0
02.07.10.8030	GMK- Revision/Hinged General tray	1
02.07.10.9700	Wrench for Femoral Wedge fixation	1

02.07S.501		
Reference	Description	Quantity
02.07.10.3500	Revision trial tibial spacer - S.0	2
02.07.10.3501	Revision trial tibial spacer - S.1	2
02.07.10.3502	Revision trial tibial spacer - S.2	2
02.07.10.3503	Revision trial tibial spacer - S.3	2
02.07.10.3504	Revision trial tibial spacer - S.4	2
02.07.10.3505	Revision trial tibial spacer - S.5	2
02.07.10.3506	Revision trial tibial spacer - S.6	2
02.07.10.3741	Revision Right tibial cutting guide	1
02.07.10.3742	Revision Left tibial cutting guide	1
02.07.10.3747	Revision intramedullary guide	1
02.07.10.0041	Intramedullary rod guide - 90°	1
02.07.10.2193	Telescope Ø5 for Intramedullary Guide	1
02.07.10.0303	Tibial palpator 0 mm - Fast Coupling	1
02.07.10.3801	Revision - Trial tibial base - S.1	1
02.07.10.3802	Revision - Trial tibial base - S.2	1
02.07.10.3803	Revision - Trial tibial base - S.3	1
02.07.10.3804	Revision - Trial tibial base - S.4	1
02.07.10.3805	Revision - Trial tibial base - S.5	1
02.07.10.3806	Revision - Trial tibial base - S.6	1
02.07.10.1027	Trial base handle	1
02.07.10.1047	Impactor/Extractor handle for tibial trial keel	1
02.07.10.9200	Insert-Puncher Fixing Screw	2
02.07.10.4710	Tibial Spacer - size 1-3 H10mm	1
02.07.10.4712	Tibial Spacer - size 1-3 H12mm	1
02.07.10.4714	Tibial Spacer - size 1-3 H14mm	1
02.07.10.4717	Tibial Spacer - size 1-3 H17mm	1
02.07.10.4720	Tibial Spacer - size 1-3 H20mm	1
02.07.10.4723	Tibial Spacer Size 1/3 - 23 mm Thickness - ASSEMBLY	1
02.07.10.4726	Tibial Spacer Size 1/3 - 26 mm Thickness - ASSEMBLY	1
02.07.10.4810	Tibial Spacer - size 4-6 H10mm	1
02.07.10.4812	Tibial Spacer - size 4-6 H12mm	1
02.07.10.4814	Tibial Spacer - size 4-6 H14mm	1
02.07.10.4817	Tibial Spacer - size 4-6 H17mm	1
02.07.10.4820	Tibial Spacer - size 4-6 H20mm	1
02.07.10.4823	Tibial Spacer Size 4/6 - 23 mm Thickness - ASSEMBLY	1
02.07.10.4826	Tibial Spacer Size 4/6 - 26 mm Thickness - ASSEMBLY	1
02.07.10.2230	IC Spacer	1
02.07.10.2187	Tibial Impactor	1
02.07.10.8031	GMK- Revision/Hinged Tibial cut tray	1

02.07S.502		
Reference	Description	Quantity
02.07.10.3753	Revision micrometric distal cut positioner	1
02.07.10.3759	Right revision distal cut positioner	1
02.07.10.3764	Left revision distal cut positioner	1
02.07.10.3763	Revision distal cutting block	1
02.02.10.0174	Femoral impactor/extractor	1
02.07.10.3772	Offset tapered bush - body -	1
02.07.10.3782	4-1 cutting block upper coverage	1
02.07.10.9661	Revision 4-1 cutting block #1	1
02.07.10.9662	Revision 4-1 cutting block #2	1
02.07.10.9663	Revision 4-1 cutting block #3	1
02.07.10.9664	Revision 4-1 cutting block #4	1
02.07.10.9665	Revision 4-1 cutting block #5	1
02.07.10.9666	Revision 4-1 cutting block #6	1
02.07.10.0262	GMK Revision Saw blade guide	1
02.07.10.9112	Femoral Component template Size 1 & 2	1
02.07.10.9134	Femoral component template # 3/4	1
02.07.10.9156	Femoral component template # 5/6	1
02.07.10.4730	Femoral Spacer - size 1-3	1
02.07.10.4731	Femoral Spacer - size 4-6	1
02.07.10.9642	Femoral Spacer Tibia in place S1-3	1
02.07.10.9643	Femoral spacer tibia in place S4/6	1
02.07.10.3651	Trial distal wedge #1/3 h= 4mm	2
02.07.10.3653	Trial distal wedge #1/3 h= 8mm	2
02.07.10.0271	Trial distal wedge #1/3 h= 12mm	2
02.07.10.3655	Trial distal wedge #4/6 h= 4mm	2
02.07.10.3657	Trial distal wedge #4/6 h= 8mm	2
02.07.10.0273	Trial distal wedge #4/6 h= 12mm	2
02.07.10.3658	Trial posterior wedge #1/3 h= 5mm	2
02.07.10.3659	Trial posterior wedge #1/3 h=10mm	2
02.07.10.3660	Trial posterior wedge #4/6 h=5mm	2
02.07.10.3661	Trial posterior wedge #4/6 h=10mm	2
02.07.10.8032	GMK- Revision/Hinged Femur cut tray	1

02.07S.503		
Reference	Description	Quantity
02.07.10.0333	Rev.Trial extension stem Ø10 - L.65mm	0
02.07.10.0334	Rev.Trial extension stem Ø10 - L.105mm	0
02.07.10.0335	Rev.Trial extension stem Ø10 - L.150mm	0
02.07.10.0336	Rev.Trial extension stem Ø11 - L.65mm	1
02.07.10.0337	Rev.Trial extension stem Ø11 - L.105mm	1
02.07.10.0338	Rev.Trial extension stem Ø11 - L.150mm	1
02.07.10.0339	Rev.Trial extension stem Ø12 - L.65mm	0
02.07.10.0340	Rev.Trial extension stem Ø12 - L.105mm	0
02.07.10.0341	Rev.Trial extension stem Ø12 - L.150mm	0
02.07.10.0342	Rev.Trial extension stem Ø13 - L.65mm	1
02.07.10.0343	Rev.Trial extension stem Ø13 - L.105mm	1
02.07.10.0344	Rev.Trial extension stem Ø13 - L.150mm	1
02.07.10.0345	Rev.Trial extension stem Ø14 - L.65mm	0
02.07.10.0346	Rev.Trial extension stem Ø14 - L.105mm	0
02.07.10.0347	Rev.Trial extension stem Ø14 - L.150mm	0
02.07.10.2209	Safe Guide Reamer VKM - Ø 9mm	1
02.07.10.2210	Safe Guide Reamer VKM - Ø 10mm	0
02.07.10.2211	Safe Guide Reamer VKM - Ø 11mm	1
02.07.10.2212	Safe Guide Reamer VKM - Ø 12mm	0
02.07.10.2213	Safe Guide Reamer VKM - Ø 13mm	1
02.07.10.2214	Safe Guide Reamer VKM - Ø 14mm	0
02.07.10.8034	GMK- Revision/Hinged Ø10-Ø14 ext. stem & reamers	1

02.07S.504		
Reference	Description	Quantity
02.07.10.0350	Rev.Trial extension stem Ø15 - L.65mm	0
02.07.10.0351	Rev.Trial extension stem Ø15 - L.105mm	0
02.07.10.0352	Rev.Trial extension stem Ø15 - L.150mm	0
02.07.10.0360	Rev.Trial extension stem Ø16 - L.65mm	1
02.07.10.0361	Rev.Trial extension stem Ø16 - L.105mm	1
02.07.10.0362	Rev.Trial extension stem Ø16 - L.150mm	1
02.07.10.0363	Rev.Trial extension stem Ø18 - L.65mm	0
02.07.10.0364	Rev.Trial extension stem Ø18 - L.105mm	0
02.07.10.0365	Rev.Trial extension stem Ø18 - L.150mm	0
02.07.10.3704	Trial tibial extension Ø 19mm - L.65mm	1
02.07.10.3705	Trial tibial extension Ø 19mm - L.105mm	1
02.07.10.3706	Trial tibial extension Ø 19mm - L.150mm	1
02.07.10.0366	Rev.Trial extension stem Ø20 - L.65mm	0
02.07.10.0367	Rev.Trial extension stem Ø20 - L.105mm	0
02.07.10.0368	Rev.Trial extension stem Ø20 - L.150mm	0
02.07.10.0369	Rev.Trial extension stem Ø22 - L.65mm	1
02.07.10.0370	Rev.Trial extension stem Ø22 - L.105mm	1
02.07.10.0371	Rev.Trial extension stem Ø22 - L.150mm	1
02.07.10.2215	Safe Guide Reamer VKM - Ø 15mm	0
02.07.10.2216	Safe Guide Reamer VKM - Ø 16mm	1
02.07.10.2218	Safe Guide Reamer VKM - Ø 18mm	0
02.07.10.2219	Safe Guide Reamer VKM - Ø 19mm	1
02.07.10.2220	Safe Guide Reamer VKM - Ø 20mm	0
02.07.10.2222	Safe Guide Reamer VKM - Ø 22mm	1
02.07.10.8019	GMK Rev.- Ø15-Ø22 Extension & Reamers (2lev)	1

02.07S.506		
Reference	Description	Quantity
02.07.10.0267	Offset adaptor for assembling hummer	1
02.07.10.7621	Assembly Hammer	1
02.07.10.0297	12Nm Torque wrench adaptor	1
02.07.10.3412	Torque limiter Adapter 12Nm	1
02.07.10.0298	6Nm Torque wrench adaptor	1
02.07.10.3406	Torque limiter Adapter 6Nm	1
02.07.10.0390	Handle for Torque Limiter Adaptor	1
02.07.10.0357	Base for Implant Assembling - ASSEMBLY	1
02.07.10.0002	Bush for Tibial Impactation	1
02.07.10.8021	GMK Rev.-Implant Assembling (1 lev)	1
02.07.10.4564	Torque limiter screwdriner 3 Nm	1

02.09S.600		
Reference	Description	Quantity
02.09.10.0051	Hinge Trial Femur #1 L	1
02.09.10.0052	Hinge Trial Femur #1 R	1
02.09.10.0053	Hinge Trial Femur #2 L	1
02.09.10.0054	Hinge Trial Femur #2 R	1
02.09.10.0055	Hinge Trial Femur #3 L	1
02.09.10.0056	Hinge Trial Femur #3 R	1
02.09.10.0057	Hinge Trial Femur #4 L	1
02.09.10.0058	Hinge Trial Femur #4 R	1
02.09.10.0059	Hinge Trial Femur #5 L	1
02.09.10.0060	Hinge Trial Femur #5 R	1
02.09.10.0061	Hinge Trial Femur #6 L	1
02.09.10.0062	Hinge Trial Femur #6 R	1
02.09.10.0041	Trial hinge 1-2	4
02.09.10.0042	Trial hinge 3-4	4
02.09.10.0043	Trial hinge 5-6	4
02.09.10.0169	Trial internal pivot	12
02.09.10.0045	Trial hinge pivot for insert 12mm	1
02.09.10.0046	Trial hinge pivot for insert 14mm	1
02.09.10.0047	Trial hinge pivot for insert 17mm	1
02.09.10.0048	Trial hinge pivot for insert 20mm	1
02.09.10.0049	Trial hinge pivot for insert 23mm	1
02.09.10.0050	Trial hinge pivot for insert 26mm	1
02.09.10.0167	Drill bit for tibial augmentation	1
02.09.10.0168	Drill guide for tibial augmentation	1
02.09.10.0100	Drill Bit Ø15.5 for Hinge Femur - Hudson Coupling	1
02.09.10.0101	Puncher #1/2 - Hinge	1
02.09.10.0102	Puncher #3-4 - Hinge	1
02.09.10.0103	Puncher #5-6 - Hinge	1
02.09.10.0104	Reamer Guide - Hinge	1
02.09.10.0105	Reamer For Hinge Tibial keel - Hudson Coupling	1
02.09.10.0106	Extension Stem 15.5 drill bit guide - Hinge	1
02.09.10.0107	Ø9 Sage Guide Reamer Reduction Bush - Hinge	1
02.09.10.0108	Hinge Femoral Box Cutting Guide #1/2	1
02.09.10.0109	Hinge Femoral Box Cutting Guide #3/4	1
02.09.10.0110	Hinge Femoral Box Cutting Guide #5/6	1
02.09.10.9001	GMK HINGE – Tibia femur finishing (1 levels tray)	1

02.09S.601		
Reference	Description	Quantity
02.09.10.0125	Trial Tibial Insert HINGED #1 – 10 mm	1
02.09.10.0126	Trial Tibial Insert HINGED #1 – 12 mm	1
02.09.10.0127	Trial Tibial Insert HINGED #1 – 14 mm	1
02.09.10.0128	Trial Tibial Insert HINGED #1 – 17 mm	1
02.09.10.0129	Trial Tibial Insert HINGED #1 – 20 mm	1
02.09.10.0130	Trial Tibial Insert HINGED #1 – 23 mm	1
02.09.10.0131	Trial Tibial Insert HINGED #1 – 26 mm	1
02.09.10.0132	Trial Tibial Insert HINGED #2 – 10 mm	1
02.09.10.0133	Trial Tibial Insert HINGED #2 – 12 mm	1
02.09.10.0134	Trial Tibial Insert HINGED #2 – 14 mm	1
02.09.10.0135	Trial Tibial Insert HINGED #2 – 17 mm	1
02.09.10.0136	Trial Tibial Insert HINGED #2 – 20 mm	1
02.09.10.0137	Trial Tibial Insert HINGED #2 – 23 mm	1
02.09.10.0138	Trial Tibial Insert HINGED #2 – 26 mm	1
02.09.10.0139	Trial Tibial Insert HINGED #3 – 10 mm	1
02.09.10.0140	Trial Tibial Insert HINGED #3 – 12 mm	1
02.09.10.0141	Trial Tibial Insert HINGED #3 – 14 mm	1
02.09.10.0142	Trial Tibial Insert HINGED #3 – 17 mm	1
02.09.10.0143	Trial Tibial Insert HINGED #3 – 20 mm	1
02.09.10.0144	Trial Tibial Insert HINGED #3 – 23 mm	1
02.09.10.0145	Trial Tibial Insert HINGED #3 – 26 mm	1
02.09.10.0146	Trial Tibial Insert HINGED #4 – 10 mm	1
02.09.10.0147	Trial Tibial Insert HINGED #4 – 12 mm	1
02.09.10.0148	Trial Tibial Insert HINGED #4 – 14 mm	1
02.09.10.0149	Trial Tibial Insert HINGED #4 – 17 mm	1
02.09.10.0150	Trial Tibial Insert HINGED #4 – 20 mm	1
02.09.10.0151	Trial Tibial Insert HINGED #4 – 23 mm	1
02.09.10.0152	Trial Tibial Insert HINGED #4 – 26 mm	1
02.09.10.0153	Trial Tibial Insert HINGED #5 – 10 mm	1
02.09.10.0154	Trial Tibial Insert HINGED #5 – 12 mm	1
02.09.10.0155	Trial Tibial Insert HINGED #5 – 14 mm	1
02.09.10.0156	Trial Tibial Insert HINGED #5 – 17 mm	1
02.09.10.0157	Trial Tibial Insert HINGED #5 – 20 mm	1
02.09.10.0158	Trial Tibial Insert HINGED #5 – 23 mm	1
02.09.10.0159	Trial Tibial Insert HINGED #5 – 26 mm	1
02.09.10.0160	Trial Tibial Insert HINGED #6 – 10 mm	1
02.09.10.0161	Trial Tibial Insert HINGED #6 – 12 mm	1
02.09.10.0162	Trial Tibial Insert HINGED #6 – 14 mm	1
02.09.10.0163	Trial Tibial Insert HINGED #6 – 17 mm	1
02.09.10.0164	Trial Tibial Insert HINGED #6 – 20 mm	1
02.09.10.0165	Trial Tibial Insert HINGED #6 – 23 mm	1
02.09.10.0166	Trial Tibial Insert HINGED #6 – 26 mm	1
02.09.10.9000	GMK HINGED - Trial Tibial Insert HINGED Tray 2 levels.	1

Part numbers subject to change.

NOTE FOR STERILIZATION

The instrumentation is not sterile upon delivery. It must be cleaned before use and sterilized in an autoclave respecting the regulations of the country, EU directives where applicable and following the instruction for use of the autoclave manufacturer.

For detailed instructions please refer to the document "Recommendations for cleaning decontamination and sterilization of Medacta® International reusable orthopedic devices" available at www.medacta.com.

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ANNEX 1

QUICK REFERENCE GUIDE FOR IMPLANT ASSEMBLING

Legenda:

- A= Tibia without offset
- B= Femur without offset
- C= Tibia with offset
- D= Femur with offset
- E= Distal femoral wedges
- F= Posterior femoral wedges
- G= Tibial augments
- H= Hinge assembling

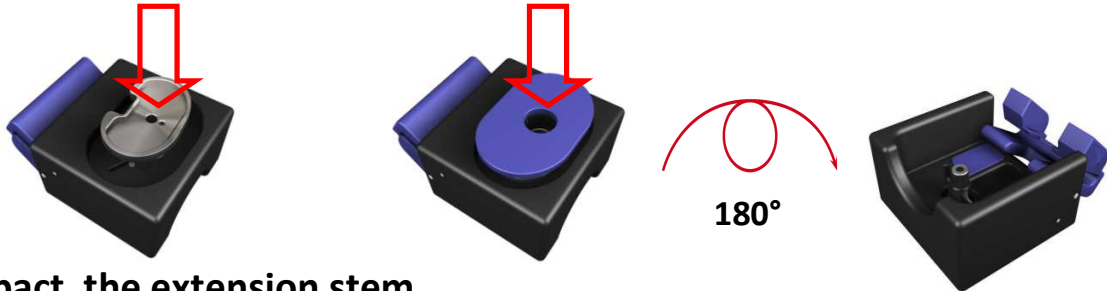
STEPS TO FOLLOW			FEMUR							
			OFFSET				NO OFFSET			
			DISTAL WEDGES	POSTERIOR WEDGES	DISTAL + POSTERIOR WEDGES	NO WEDGES	DISTAL WEDGES	POSTERIOR WEDGES	DISTAL + POSTERIOR WEDGES	NO WEDGES
TIBIA	OFFSET	TIBIAL AUGMENTS	C,G,D,E,H	C,G,D,F,H	C,G,D,E,F,H	C,G,D,H	C,G,B,E,H	C,G,B,F,H	C,G,B,E,F,H	C,G,B,H
		NO AUGMENTS	C,D,E,H	C,D,F,H	C,D,E,F,H	C,D,H	C,B,E,H	C,B,F,H	C,B,E,F,H	C,B,H
	NO OFFSET	TIBIAL AUGMENTS	A,G,D,E,H	A,G,D,F,H	A,G,D,E,F,H	A,G,D,H	A,G,B,E,H	A,G,B,F,H	A,G,B,E,F,H	A,G,B,H
		NO AUGMENTS	A,D,E,H	A,D,F,H	A,D,E,F,H	A,D,H	A,B,E,H	A,B,F,H	A,B,E,F,H	A,B,H

CAUTION: Incorrect assembling may lead to early mechanical failure of the implant.

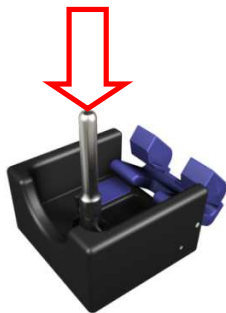
A

TIBIA WITHOUT OFFSET

Insert the tibial baseplate into the assembling box

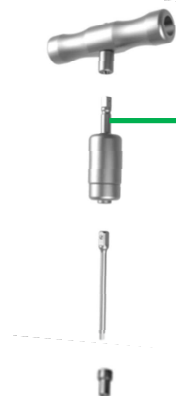


Impact the extension stem



Impact on a
stable support

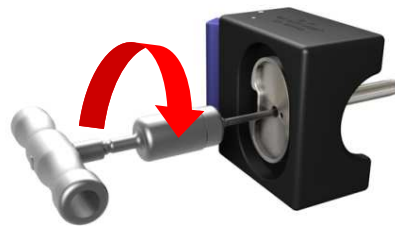
Screw the extension stem



6 Nm



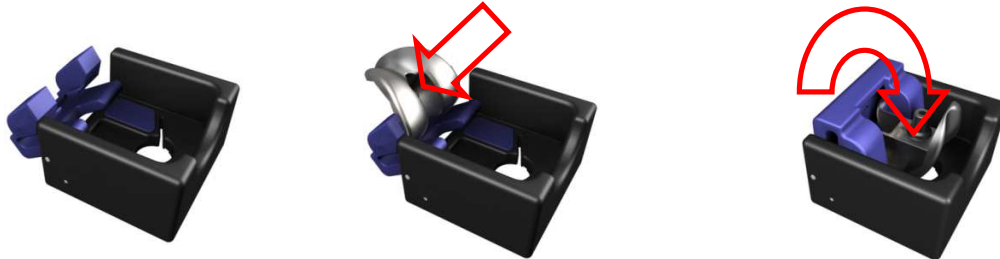
Use the screw packaged
with the extension stem



B

FEMUR WITHOUT OFFSET

Insert the femoral component into the assembling box

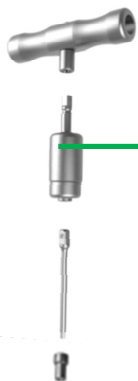


Impact the extension stem



Impact on a
stable support

Screw the extension stem

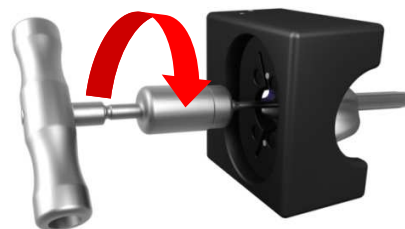


6 Nm

~~12 Nm~~



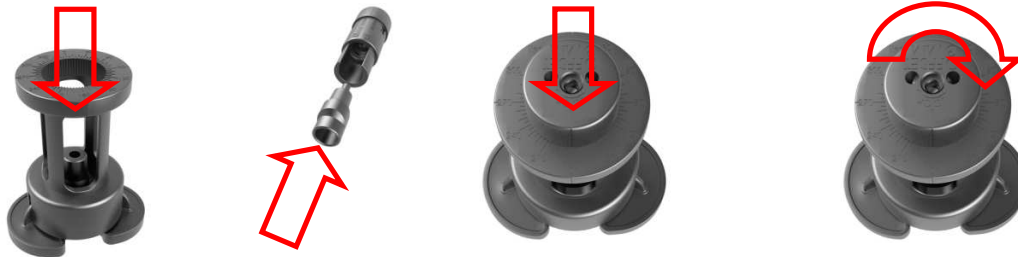
Use the screw packaged
with the extension stem



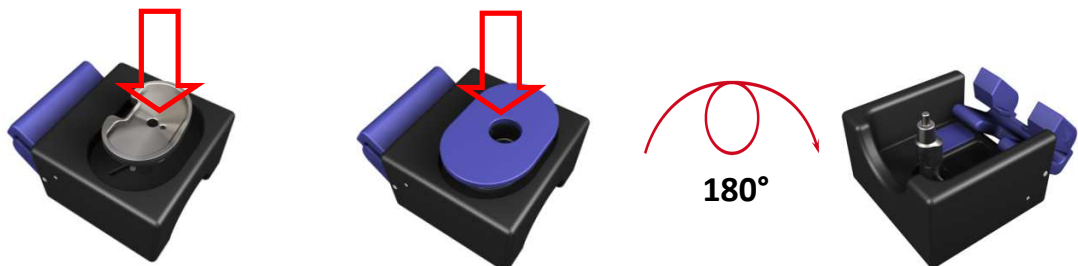
C

TIBIA WITH OFFSET

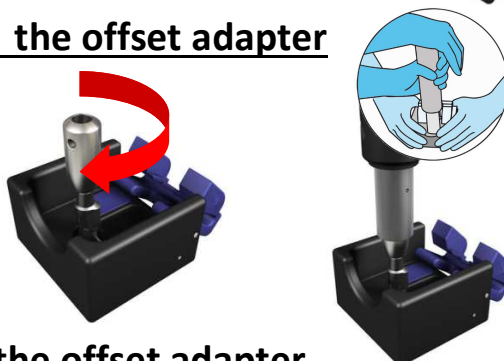
Reproduce the validated offset on the tibial baseplate



Insert the tibial baseplate into the assembling box

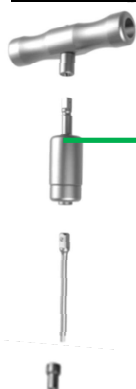


Impact the offset adapter



Impact on a
stable support

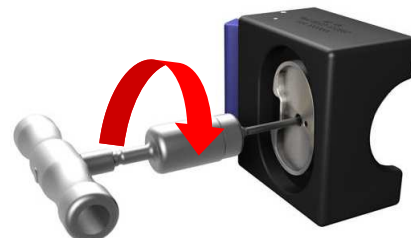
Screw the offset adapter



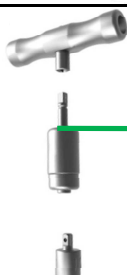
6 Nm

~~12 Nm~~

Use the screw packaged
with the extension stem

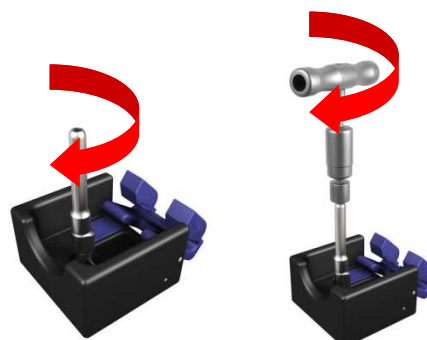


Screw the extension stem



12 Nm

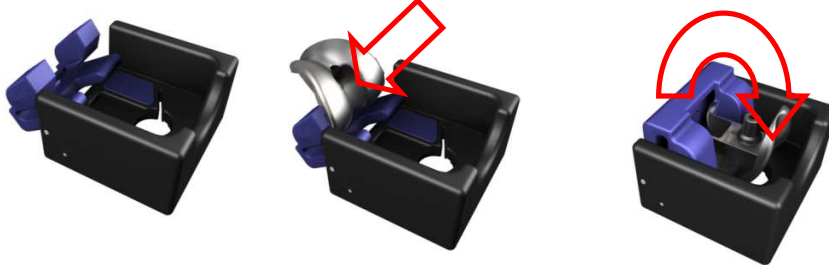
Use 12Nm wrench only
to screw the stem on
the offset adapter



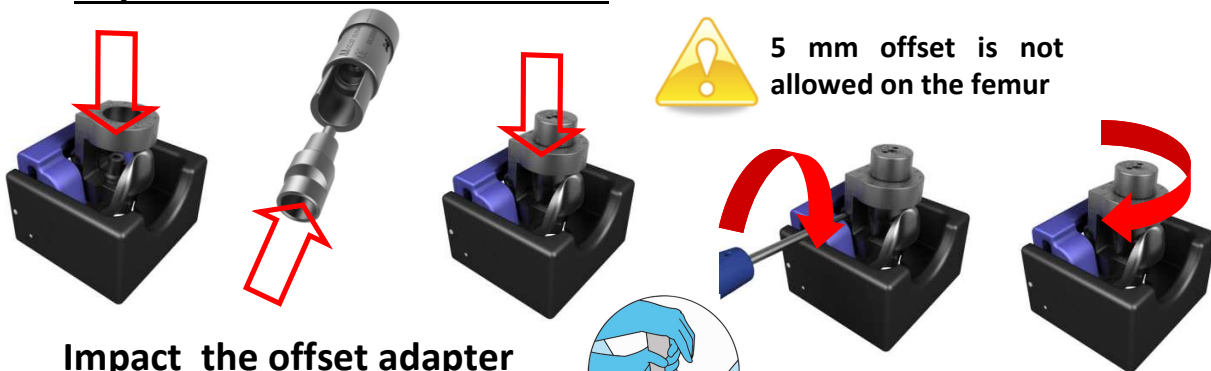
D

FEMUR WITH OFFSET

Insert the femoral component into the assembling box



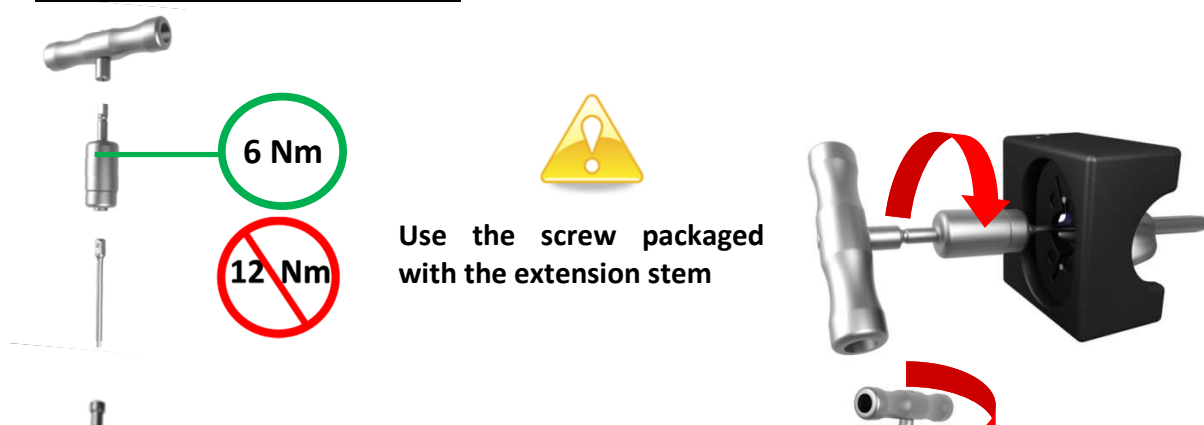
Reproduce the validated offset



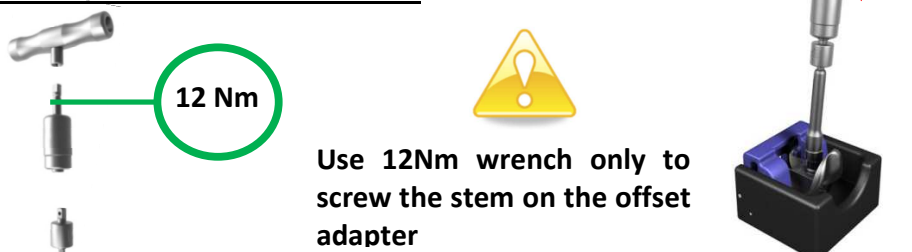
Impact the offset adapter



Screw the offset adapter



Screw the extension stem



E

FEMORAL DISTAL WEDGE

Screw the distal wedges



Engage and tighten the screw



Use the screw packaged with the distal wedge

F

FEMORAL POSTERIOR WEDGE

Screw the posterior wedges



Pre-engage

Tighten the screw



+

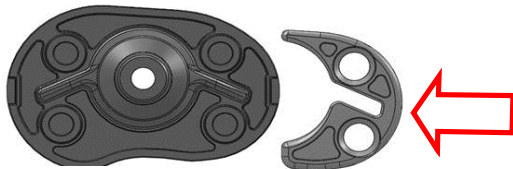


Use the screw packaged with the posterior wedge

G

TIBIAL AUGMENTS

Screw the tibial augments



Engage and tighten the screws



Use the screws packaged with the tibial augment

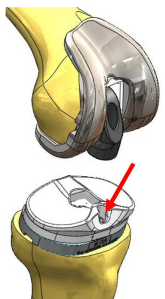
H

HINGE ASSEMBLING

Engage the polyethylene bush in the notch



Position the tibial insert into the tibial tray



3 Nm

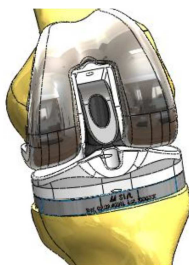


Use the screw packaged with the insert



The hinge post extension is insert thickness specific

Reduce the joint

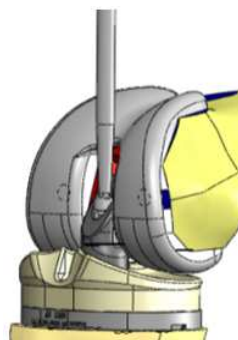


No joint distraction is required

Engage the hinge post mechanism



6 Nm



Knee flexion
= 90°



Use the screw packaged with the tibial insert and the hinge post extension

MODULAR CONNECTIONS: WHICH INSTRUMENTS?



TO BE USED ONLY WITH:

- DISTAL WEDGE SCREWS
- POSTERIOR WEDGE SCREWS
- TIBIAL AUGMENTATION SCREWS
- TIBIAL INSERT SCREWS

ONLY FOR POSTERIOR WEDGES ALSO USE:



6 Nm

TO BE USED ONLY WITH:

- MORSE TAPER SCREWS ON THE IMPLANT
- HINGE POST EXTENSION SCREW



12 Nm

TO BE USED ONLY WITH:

- EXTENSION STEM ON THE OFFSET



3 Nm

TO BE USED ONLY WITH:

- TIBIAL INSERT SCREW