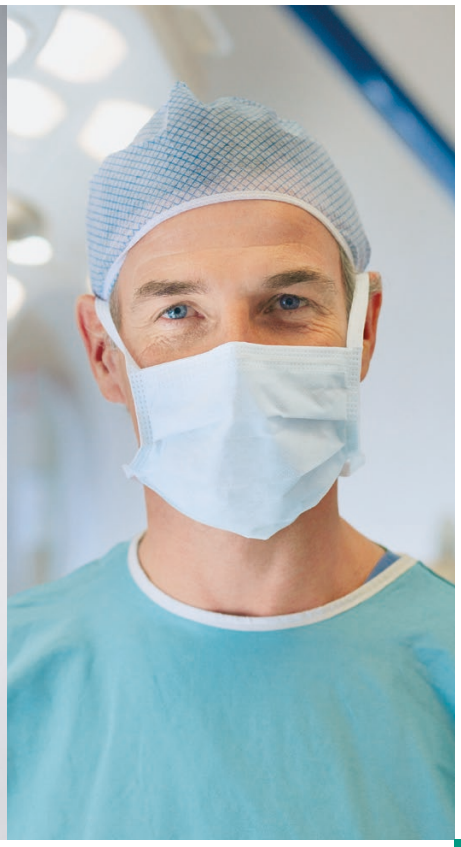
B BRAUN
SHARING EXPERTISE



ORTHOPAEDIC SURGERY

AESCULAP® e.motion® Pro SYSTEM

KNEE ARTHROPLASTY
OPERATING TECHNIQUE WITH IQ INSTRUMENTS

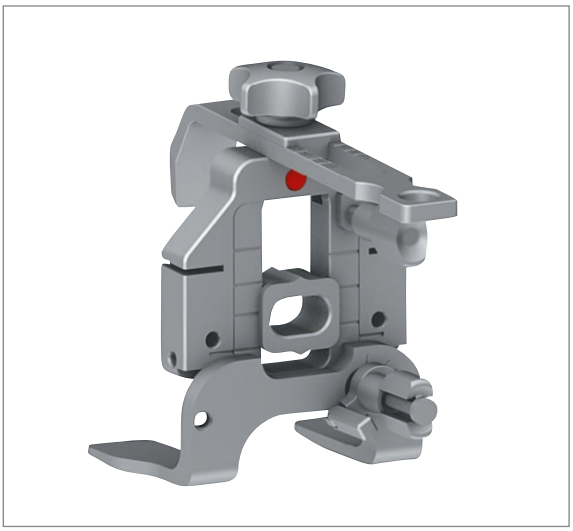
AESCULAP® e.motion® Pro SYSTEM

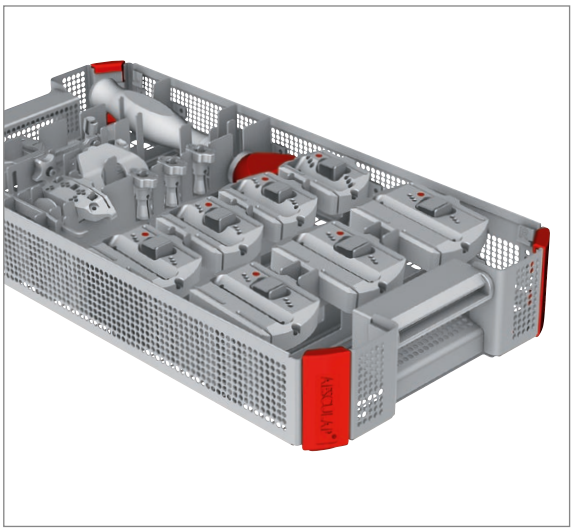
1 | INTRODUCTION

The IQ e.motion® instrumentation has been designed to facilitate the workflow not only for the surgeon, but the operating room (OR) team as a whole, by enhancing ergonomics and operative efficiency. IQ stands for "Intuitive and Quick". The system offers multiple options covering different implantation philosophies that allow each surgeon to follow his/her preferred surgical technique.

- Precise and less instruments,
- quick couplings,
- ergonomic handles and
- colour coding

are some aspects that will facilitate the surgical process in the operating room.





IQ – INTUITIVE & QUICK
LESS IS MORE

The instruments as well as the instrument trays are colour coded to enease instrumentation and organization during the complete workflow:

- red = femur
- blue = tibia
- yellow = general instruments
- grey = patella

The IQ e.motion® instruments are stored in the specially developed Aesculap OrthoTray®s. Both together, the IQ instruments plus Aesculap OrthoTray® offer a high end reprocessing solution. The trays not only store the instruments in a secure and safe manner but also clearly facilitate the reprocessing procedure for the CSU (Central Sterilization Unit) as the instruments can remain in the tray during the washing process. This time saving solution generates an economic advantage and eliminates a potential source of error as complete set reassembling is needless (1).

Aesculap Reset®

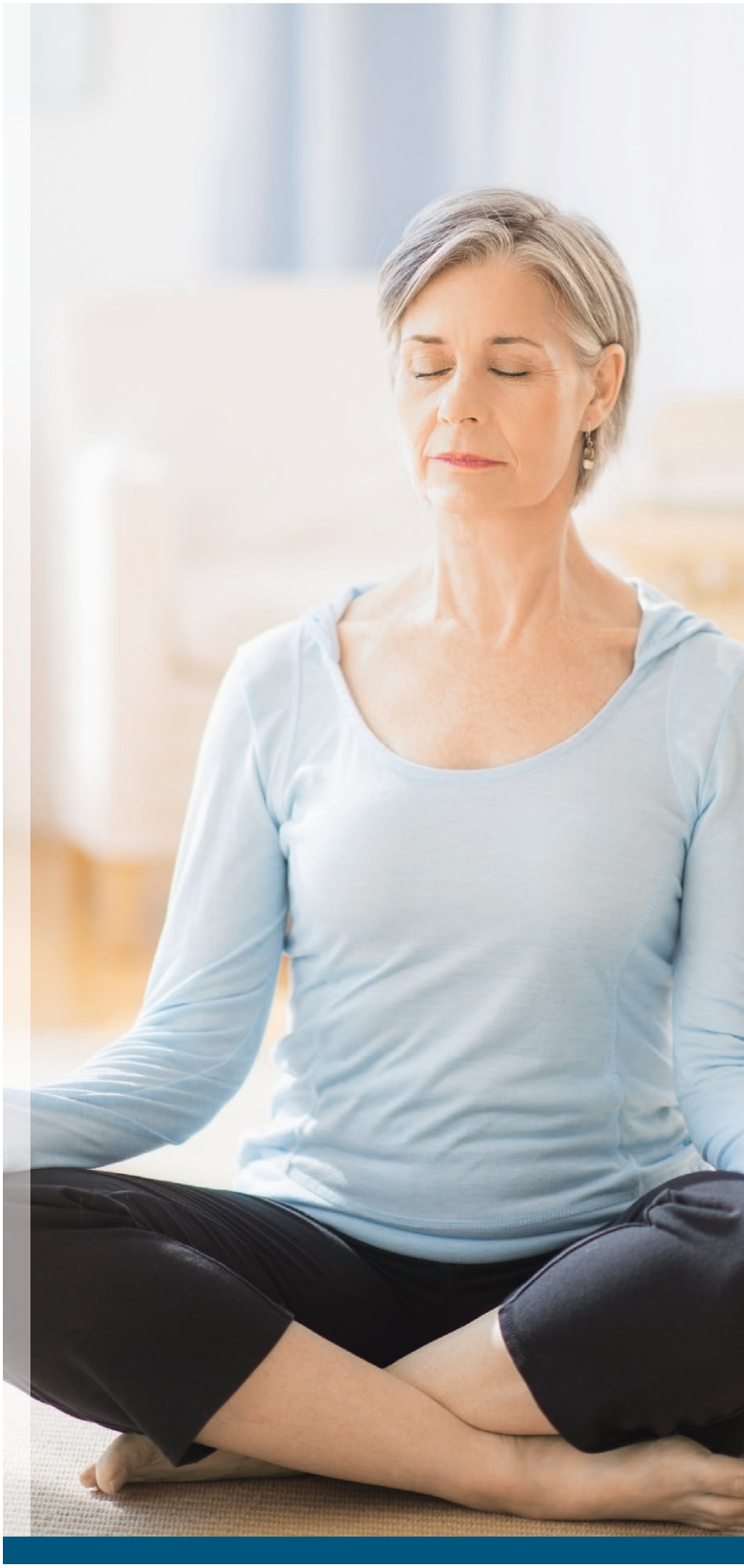
Aesculap Reset® is an intelligent improvement of the Aesculap OrthoTray® configuration. All size-specific instruments are packed such that only the sizes desired by the surgeon are used. Thus, the instrument and tray volumes in the entire instrument cycle are reduced by more than 50 % (1). Aesculap Reset® facilitates, as size-specific storage and washing system, the work of all the participants in the entire process.

NOTE

This wash tray system is only approved for the use with the cleaning validated instruments from AESCULAP®. Complex instruments, e. g. cutting guides or instruments that are introduced in the intramedullary (IM) canal during the procedure as drills and reamers require a manual pre-cleaning according to standard requirements.

AESCULAP® e.motion® Pro SYSTEM

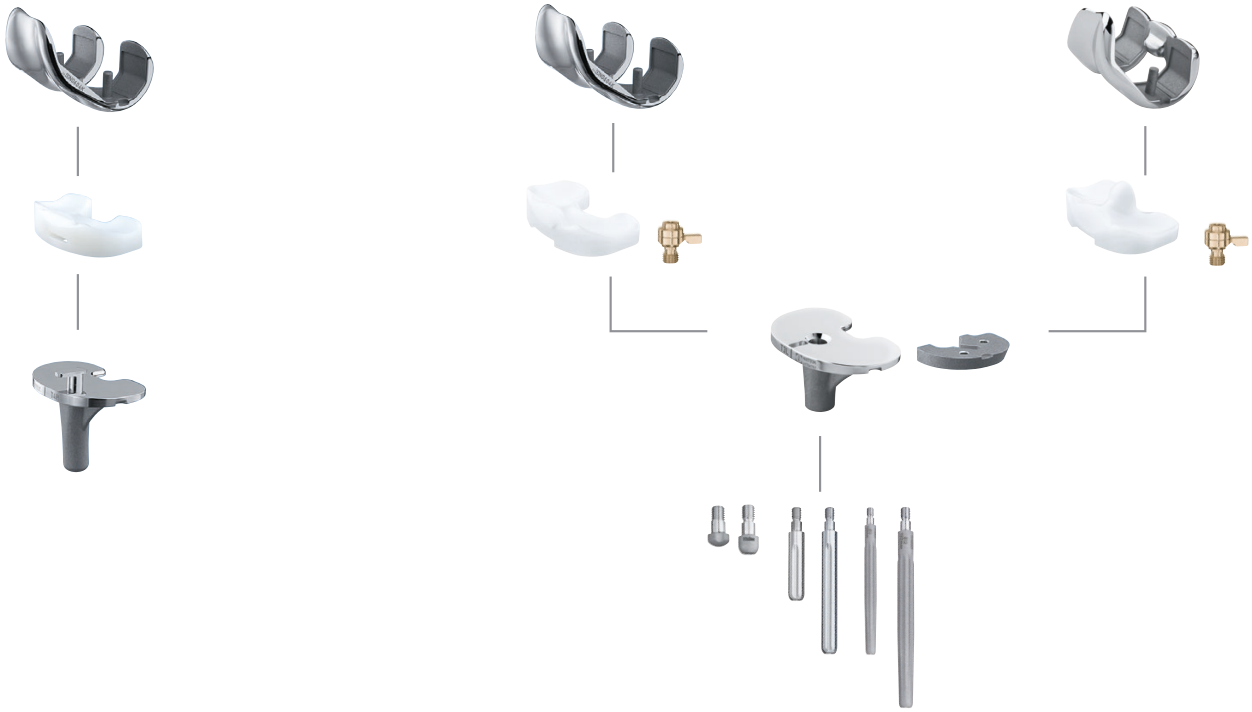
2 | CONTENT



AESCULAP® e.motion® Pro SYSTEM

3 | INDICATIONS / PATIENT SELECTION

e.motion® FP	e.motion® UC Pro	e.motion® PS Pro
cemented / Plasmapore® µ-CaP	*cemented / Plasmapore® µ-CaP*	*cemented*



e.motion® Pro system is indicated for patients requiring primary surgery. The implant concept principle of e.motion® is based on high congruency between the femoral condyles and the mobile meniscal component and therefore requires stable collateral ligaments, medio-lateral symmetry and congruent flexion and extension gaps. The e.motion® UC Pro system is an ultra congruent PCL retaining design. The tibia does have a safety stop which allows ±30° of rotation.
The e.motion® PS Pro is a posterior stabilizing PCL sacrificing design. Due to the bone-saving design of the femoral implant, it allows implantation of a PS design without major bone loss. Another special feature is the Advanced Surface technology with its excellent gliding, wear, and allergy properties.

The successful since 2007 used surface treatment Advanced Surface, with the seven layer architecture, provides multiple advantages. The ceramic, very hard surface, with the excellent tribological properties, reduces wear by up to 60% (1, 2). At the same time, five intermediate layers are applied for the reduction of metal ion release, as an approach to prevent allergic reactions. The stability of the coating is supported by an improved elasticity and a graded degree of hardness (3, 4). For more information and contra-indications, please refer to the instructions for use TA016100.

NOTE
Cementless versions of e.motion implants with AS technology are available on request on custom made service.

4 | PREOPERATIVE PLANNING

Long leg x-ray for planning of the mechanical axis

For every Total Knee Arthroplasty, careful preoperative X-ray planning is recommended in order to determine precisely the following parameters:

- Varus/Valgus deformity
- Angle between the anatomical and mechanical femoral axes
- Entry point(s) of the intra-medullary alignment rods (manual IM technique)
- Joint line level
- Femur resection heights
- Tibia resection heights
- Component sizing
- Implant positioning
- Potential areas of bone losses and location of osteophytes

The following X-ray images are required to conduct the radiographic analysis:

- Knee joint in AP projection: knee extended, centered over the distal patella.
- Knee joint in lateral projection: knee in 30° flexion, centered above the distal patella.
- Image of the whole leg (from hip to ankle) in monopodal stance.
- Patella-tangential image (Merchant View) with the knee at 30° flexion.

The angle between the mechanical and anatomical femur axes is measured with the combination template for axis measurements. The center of the joint, the joint line and the mechanical femur axis can be measured.

To determine the tibia resection, the template showing representations of the tibial components is superimposed over and aligned with the X-ray image. The resection height is given at a 10 - 24 mm graduation. A complete set of radiographic templates is provided for the preoperative determination of the appropriate implant sizes. The localization of the osteophytes facilitates their removal, improving the mobility of the joint. The e.motion® knee system provides a complete set of radiographic templates in different magnitudes (PS Pro and UC Pro Tibia 1.1:1 NS416 and 1.15:1 NS417), (UC Pro Femur 1.1:1 : NE398 and 1.15:1 NE399). The results of the preoperative planning should be documented in the patient's file and available during the operative procedure for reference.

AESCULAP® e.motion® Pro SYSTEM

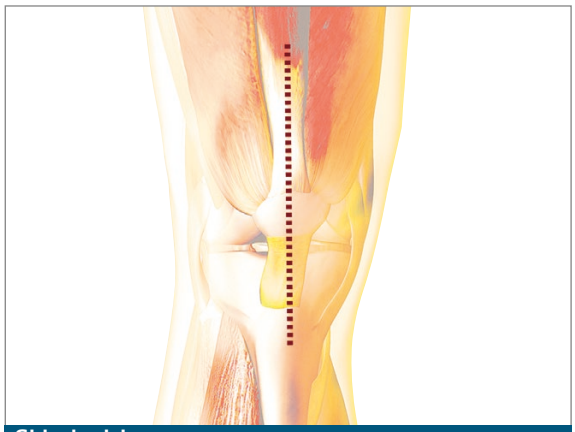
5 | APPROACH

The IQ e.motion® instrumentation is designed for use with or without the use of OrthoPilot® Navigation, for both conventional and less invasive approaches to the knee.

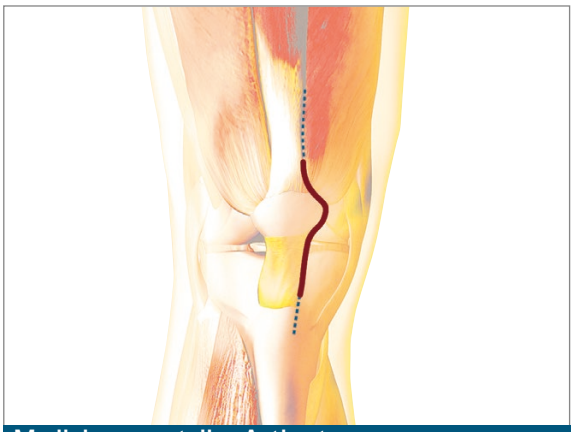
The initial skin incision is a straight midline or slightly oblique parapatellar skin incision starting 2 to 4 cm proximal to the superior pole of the patella and extending distally to the medial aspect of the tibial tubercule. The surgeon should decide on a patient basis how long of an incision is necessary for proper visualization of the knee anatomy. A parapatellar skin incision will be of benefit to patients when attempting to kneel after the operation.

The length range of the incision is generally between 8 and 14 cm symmetrically distributed above and below the joint line. Extension of the skin incision may be necessary during the procedure depending on the patient anatomy, the soft tissues and the skin tension.

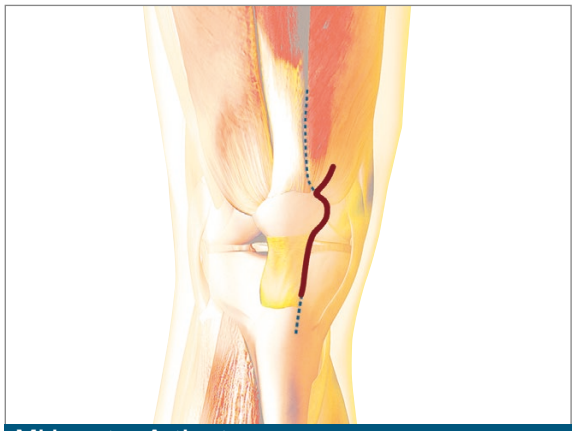
Three basic types of arthrotomies are recommended for use to carry out the intra-articular exposure: the medial parapatellar, the mid-vastus or the sub-vastus.



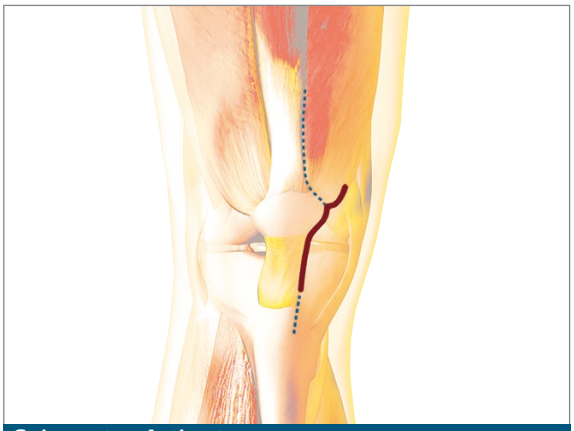
Skin incision



Medial-parapatellar Arthrotomy



Mid-vastus Arthrotomy



Sub-vastus Arthrotomy

Medial-parapatellar Arthrotomy

With the knee in flexion or extension, the arthrotomy is performed starting proximal to the superior pole of the patella, incising the rectus femoris tendon longitudinally. Continuing the arthrotomy distally around the medial aspect of the patella, and ending medial to the tibial tubercule is then carried out.

Mid-vastus Arthrotomy

With the knee in flexion, the arthrotomy is performed starting by a split of the fibers from the vastus medialis oblique (VMO), continuing distally around the medial aspect of the patella, and ending medial to the tibial tubercule.

Sub-vastus Arthrotomy

With the knee in flexion, the arthrotomy is performed starting with a 4 to 6 cm incision of the fascia at the inferior border of the VMO, running horizontal to the medial aspect of the patella, continuing and ending distally medial to the medial tubercule.

Final exposure

A fat pad excision is performed in order to facilitate the exposure and to improve the patella mobility. Perform the necessary medial release at this time that corres-ponds to the deformity. The patella can then be everted or sub-luxated laterally.

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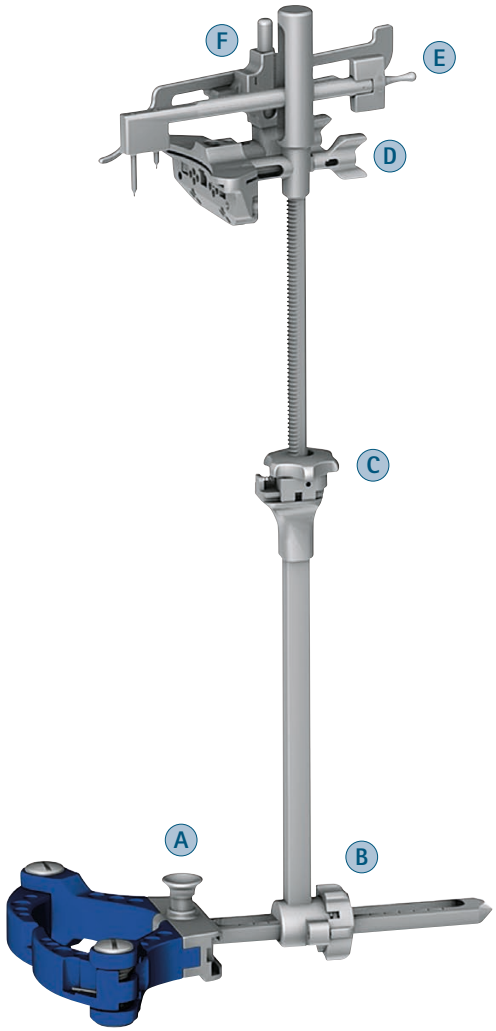
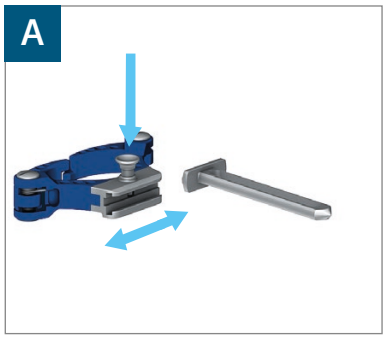
6 | ASSEMBLY INSTRUCTIONS AND INSTRUMENT HANDLING



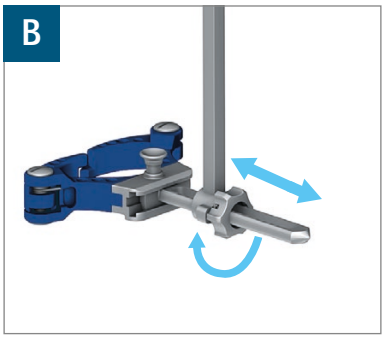
A | TIBIA EXTRA-MEDULLARY ALIGNMENT – ASSEMBLY INSTRUCTIONS

A



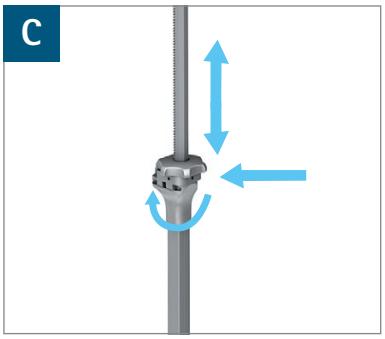
- Press the upper button on the bimalleolar clamp.
- Engage the support in the groove.
- When the neutral position is reached, release the button.

B



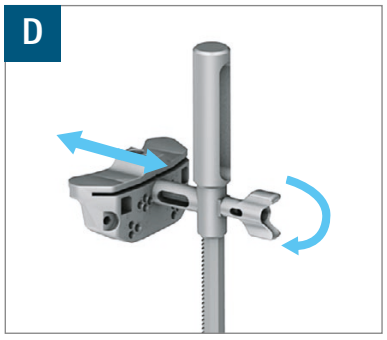
- Turn the wheel of the tibial alignment handle to the open position, OP-EN will be displayed.
- Engage the handle onto the bimalleolar support.
- Adjust to the neutral position.

C



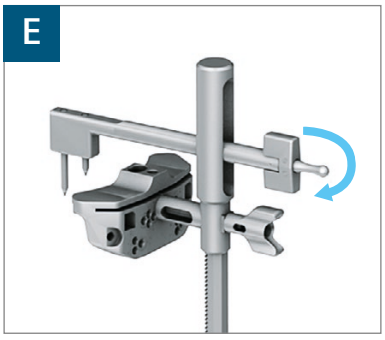
- Push on the handle adjusting wheel to release the locking mechanism.
- Engage the holding rod in the handle.
- Release the wheel when the desired level is reached.
- Turning the wheel will allow a fine adjustment on the height.

D



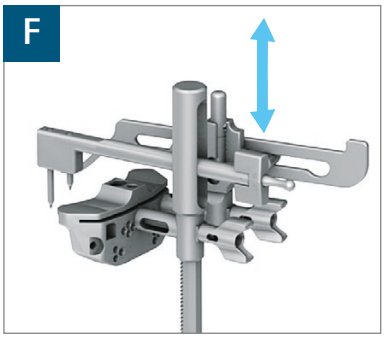
- Engage the holding rod in one of the connection squares of the tibial cutting guide.
- Lock the assembly by turning the frontal wheel.

E



- The proximal fixation is set through the proximal opening of the holding rod.
- Turn the tab into a horizontal position to fix the assembly.

F



- The connection square of the stylus is engaged in one of the connection squares of the tibial cutting guide.
- The connection is fixed by locking the wheel on the stylus.
- The resection height is adjusted to the desired bone cut level.
- The stylus can be placed over the proximal fixation.

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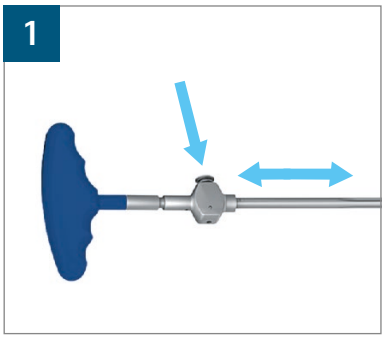
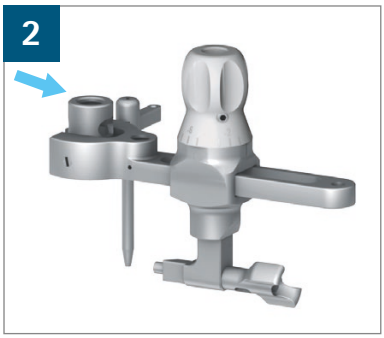
B | TIBIA INTRA-MEDULLARY ALIGNMENT

1



- Push on the button of the T-handle to release the locking-mechanism.
- Couple the T-handle to the IM rod.
- Release the button to lock the assembly.

2



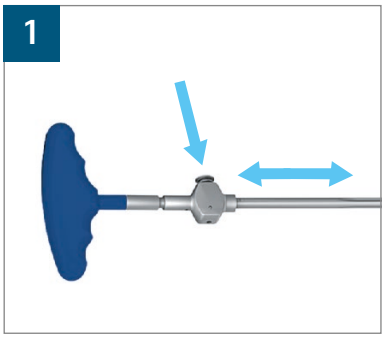
- Choose the IM orientation sleevecorresponding to the desired posterior slope resection of the tibia (default is 0° sleeve; sleeves with 3°, 5° and 7° posterior slope are available).
- Connect the sleeve to the IM alignment system.

3

- Mount the assembly into the alignment block.
- Connect the alignment system to the tibia cutting guide in one of its connection squares.
- Fix the connection by locking the wheel.

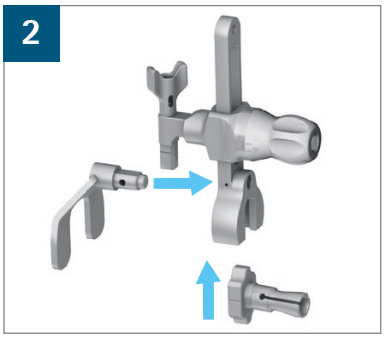
C | FEMUR INTRA-MEDULLARY ALIGNMENT

1



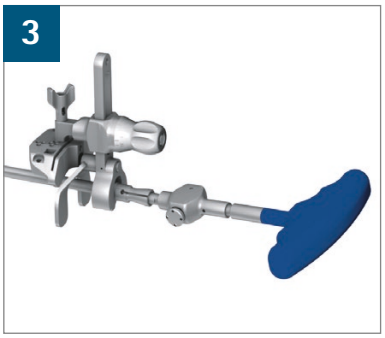
- Push on the button of the T-handle to release the locking-mechanism.
- Couple the T-handle to the IM rod.
- Release the button to lock the assembly.

2



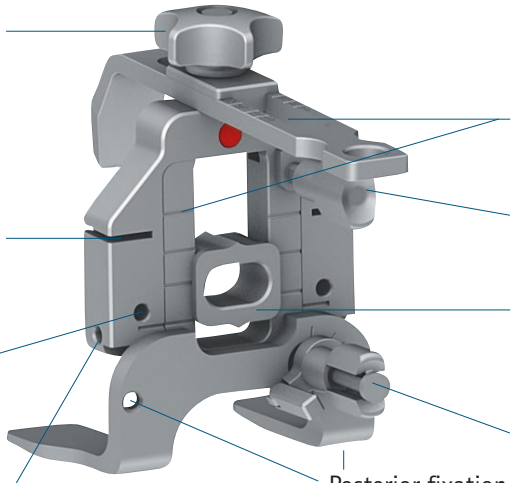
- Choose the IM orientation sleeve corresponding to the desired valgus alignment (standard: 5, 6, or 7°).
- Connect the sleeve to the IM alignment system.
- Connect a distal femur contact plate (small or large).

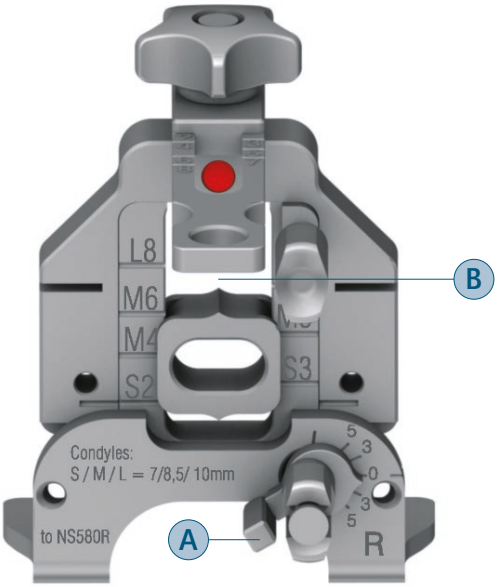
3



- Mount the assembly into the alignment system.
- Connect the alignment system to the tibia cutting guide in the central connection square.
- Fix the connection by locking the wheel.

D | A/P AND ROTATION ALIGNMENT BLOCK FOR THE FEMUR

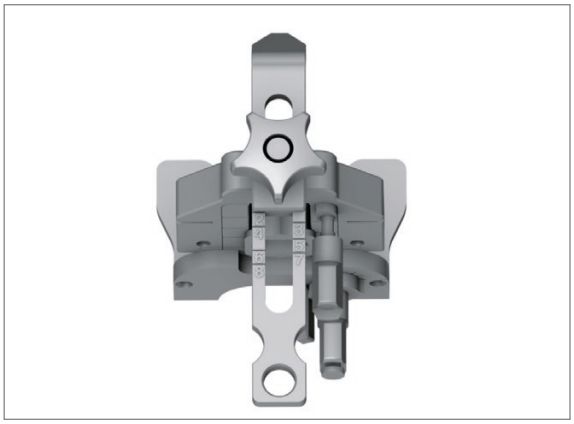




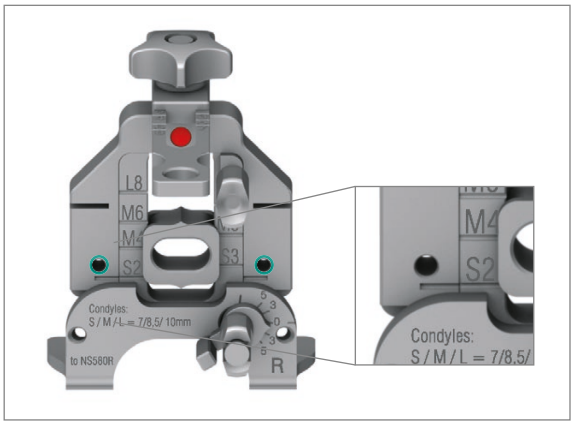
- **Option 1:** the rotation is pre-fixed (wheel A) to a desired value before the block is put in place.
- **Option 2:** the rotation is free and the block is placed in contact with the distal femur and the posterior condyles; the rotation can be tuned by turning the posterior wheel (A), checking the alignment of the AP window (B) with the femur AP plane (Whiteside line).
- Due to the fixed distance between the pin placement holes and the anterior cortex stylus, the placed pins can be used for any femoral size chosen by the surgeon. Upsizing or downsizing the femur is achieved simply by choosing a different 4-in-1 cutting block size and placing on the same previously placed pins.

AESCULAP® e.motion® Pro SYSTEM

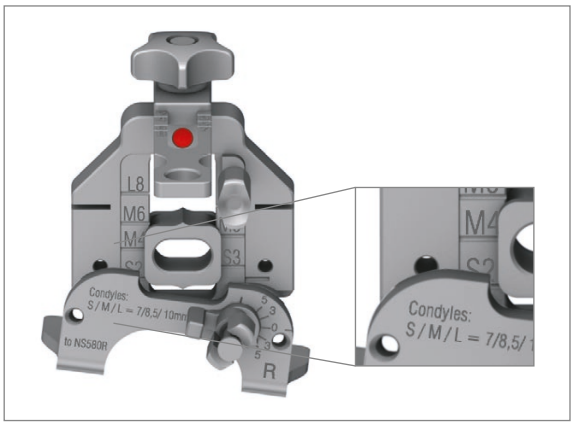
D | A/P AND ROTATION ALIGNMENT BLOCK



- The anterior point to be palpated is located on the lateral anterior cortex, avoiding the risk of anterior notching.
- If the palpation is done at the middle of the anterior femur, the grand piano sign will be bigger providing a larger surface of contact.
- The stylus can be adjusted in the caudo-cranial direction in order to get a congruence between the AP sizing and the proximo-distal sizing determined by the scale on the upper part of the stylus.



- After defining the right axial rotation of the block, if an exact femoral size is measured like in the example on the left, fix the AP sliding by tightening the corresponding screw, place 2 headless pins in the placement holes.
- By loosening the screws, and, if used, removing the posterior enhanced fixation pins, remove the orientation block.



- After defining the right axial rotation of the block, if the measured size is in between two exact sizes like in the example on the left, fix the AP sliding by tightening the corresponding screw, place 2 headless pins in the placement holes.
- By loosening the screws, and, if used, removing the posterior enhanced fixation pins, remove the orientation block.
- Choose the upper or lower size based on the assessment of the medio-lateral dimension and the flexion/extension gap situation. A smaller size will enlarge the flexion gaps; a bigger size will reduce the flexion gaps.

NOTE

The posterior and distal thickness of the e.motion® femur differs depending between the following 3 size groups:
S = size 2, 3 = 7.0 mm; M = size 4, 5, 6 = 8.5 mm and L = 7, 8 = 10 mm.
Up- or downsizing can therefore also have an impact on the extension gap.

E | TIBIAL-DISTAL CUTTING BLOCK

Distal resection or tibial resection with a standard approach

- The connection to the alignment system to be used is the central one marked 'C', denoted by the green square in the left picture.
- The fixation holes for the headless pins to be used correspond to the groups marked 'C', shown by the red circles on the left picture.
- Enhanced fixation is achieved with one or two converging pins in the holes marked with the blue circles.

Right knee tibial resection with a less invasive approach

- The connection to the alignment system to be used is the one marked "R", shown by the green square in the left picture.
- The fixation holes for the headless pins to be used correspond to the groups marked "R", shown by the red circles in the left picture.
- Enhanced fixation is achieved with one converging pin in the hole marked with the blue circle.

Left knee tibial resection with a less invasive approach

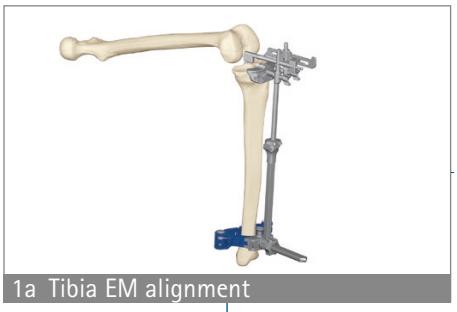
- The connection to the alignment system to be used is the one marked "L", shown by the green square in the left picture.
- The fixation holes for the headless pins to be used correspond to the groups marked "L", shown by the red circles in the left picture.
- Enhanced fixation is achieved with one converging pin in the hole marked with the blue circle.

NOTE

For a minimally invasive approach or when there is little space there are medialized cutting guides available as an option (see Chapter 16 Optional instruments).

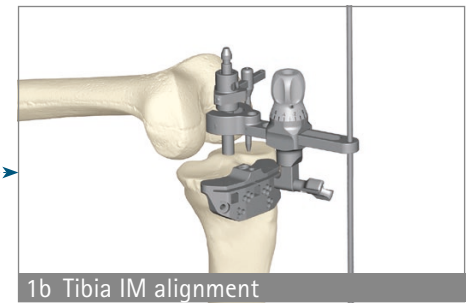
AESCULAP® e.motion® Pro SYSTEM

7 | WORKFLOW SYNOPSIS – TIBIA FIRST

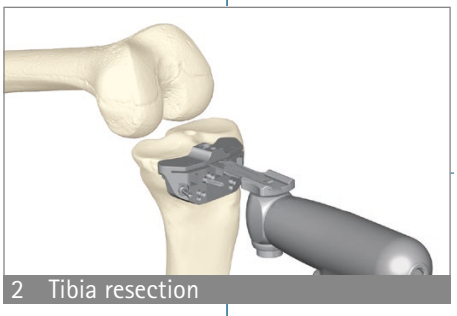


1a Tibia EM alignment

optional

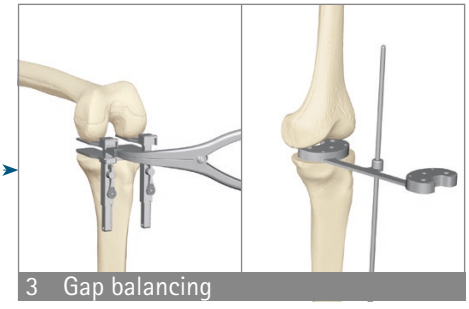


1b Tibia IM alignment

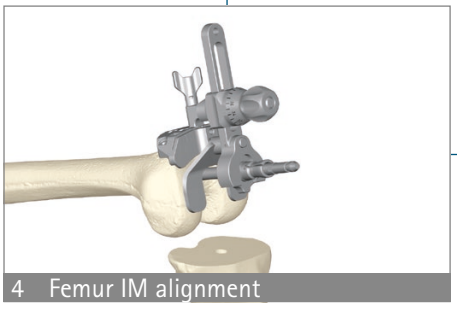


2 Tibia resection

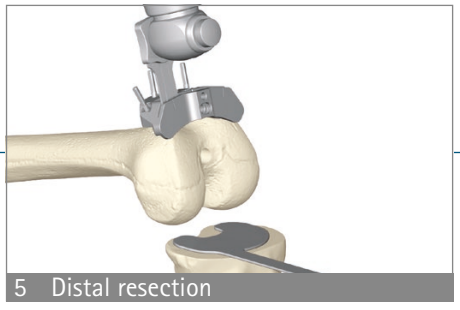
optional



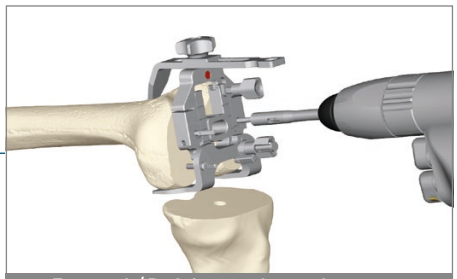
3 Gap balancing



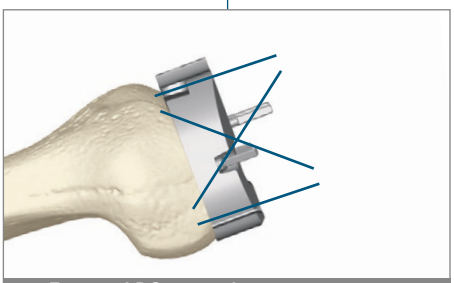
4 Femur IM alignment



5 Distal resection

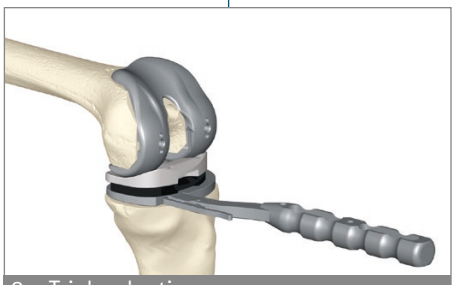


6 Femur A/P sizing and rotation



7 Femur APC resections

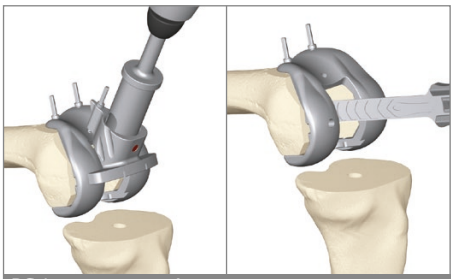
8 Tibia keel and/or stem preparation



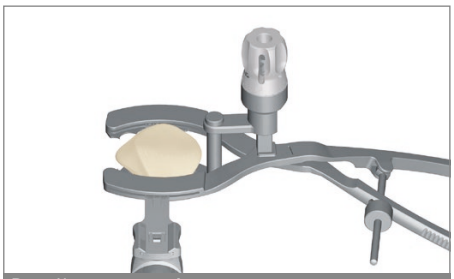
9 Trial reduction

10 Component implantation

OPTIONAL



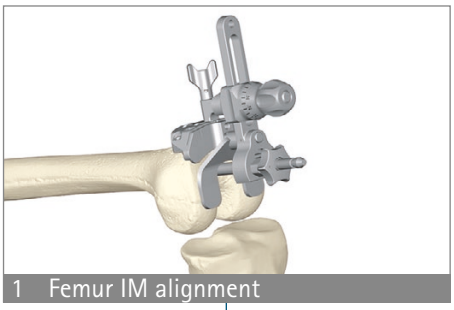
PS box preparation



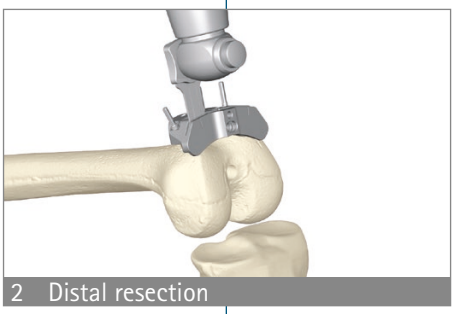
Patella preparation

AESCULAP® e.motion® Pro SYSTEM

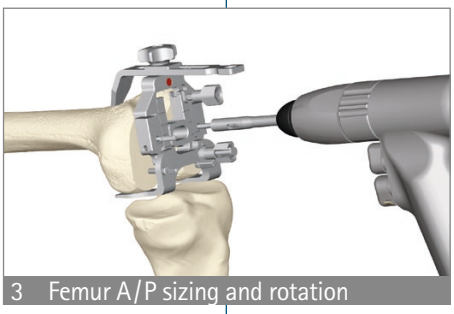
7 | WORKFLOW SYNOPSIS – FEMUR FIRST



1 Femur IM alignment

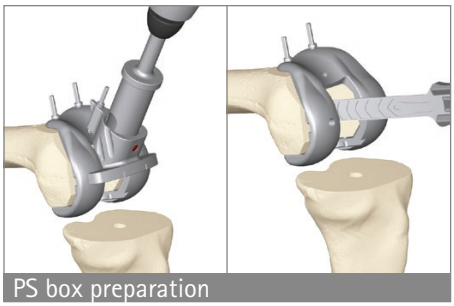


2 Distal resection

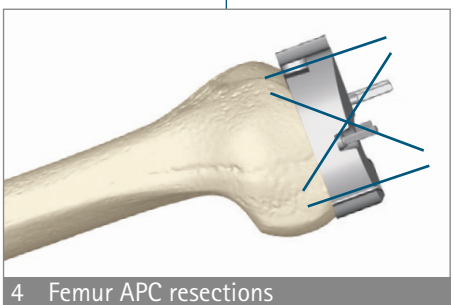


3 Femur A/P sizing and rotation

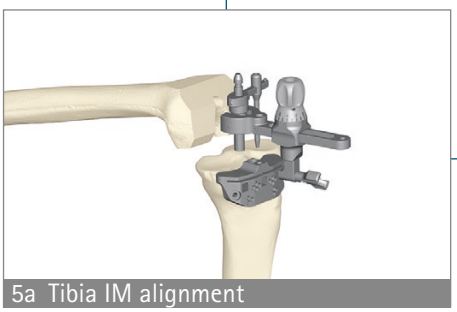
OPTIONAL



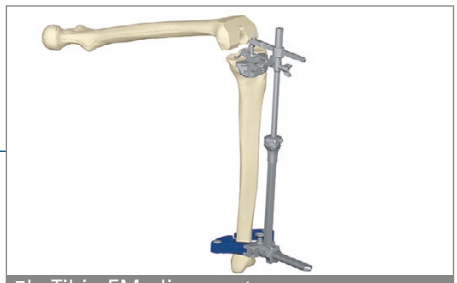
PS box preparation



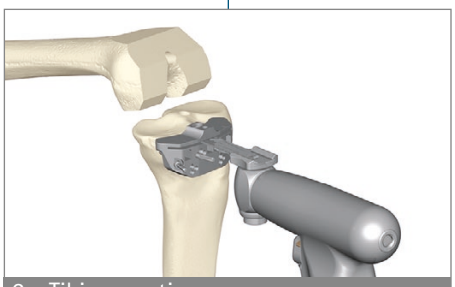
4 Femur APC resections



5a Tibia IM alignment



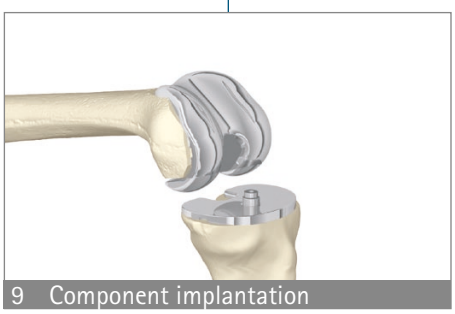
5b Tibia EM alignment



6 Tibia resection

7 Tibia keel and/or stem preparation

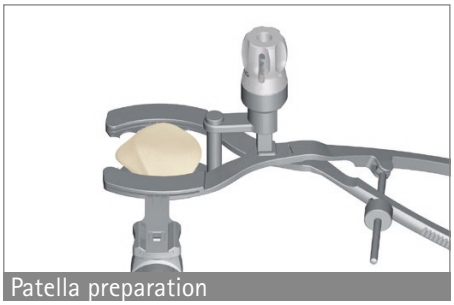
8 Trial reduction



9 Component implantation

OPTIONAL

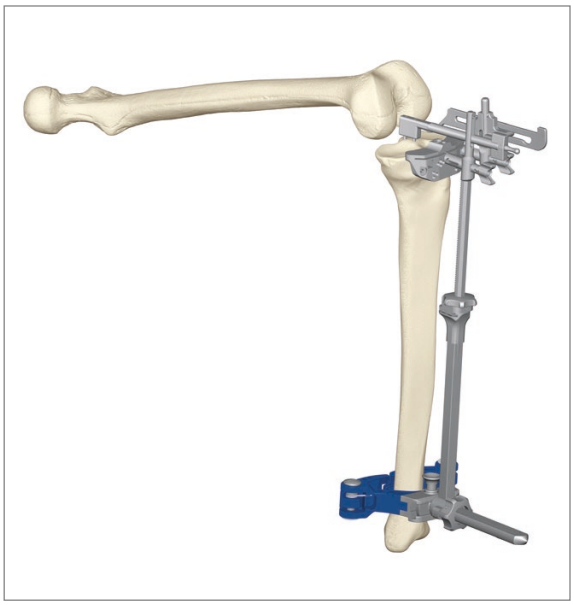
Gap balancing



Patella preparation

AESCULAP® e.motion® Pro SYSTEM

8 | TIBIA PREPARATION – EXTRAMEDULLARY ALIGNMENT



8.1 Extramedullary Referencing

- The EM alignment system assembly is placed in a parallel fashion with the frontal tibia with the leg positioned in flexion. To reach 0° tibia slope, the best way is to place two fingers between tibia and alignment system in the upper third and three fingers in the lower third.
- The bimalleolar clamp, previously set in a neutral position, is fixed around the lower limb just above the ankle joint and centered on the tibio-tarsian joint.
- Proximally, the EM alignment system can be stabilized with the proximal fixation first by engaging the longest spike between the tibia spines.

INSTRUMENTS

Bimalleolar clamp
NS345R

Bimalleolar clamp support
NS344R

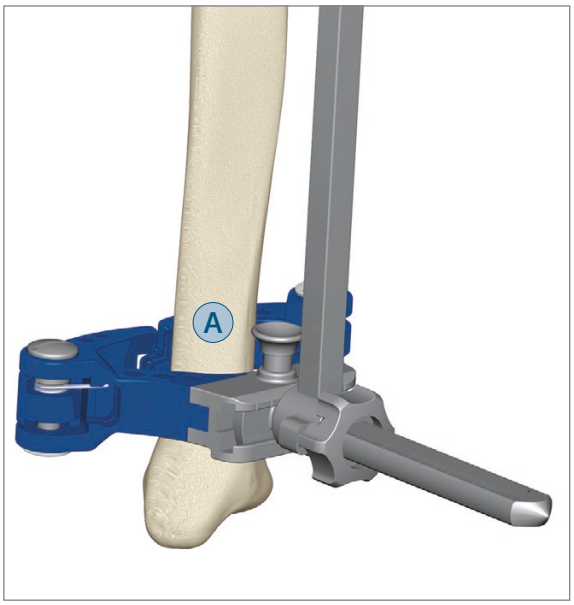
Alignment system handle
NS342R

Holding rod for cutting guide NS341R

Tibia cutting guide
NS334R

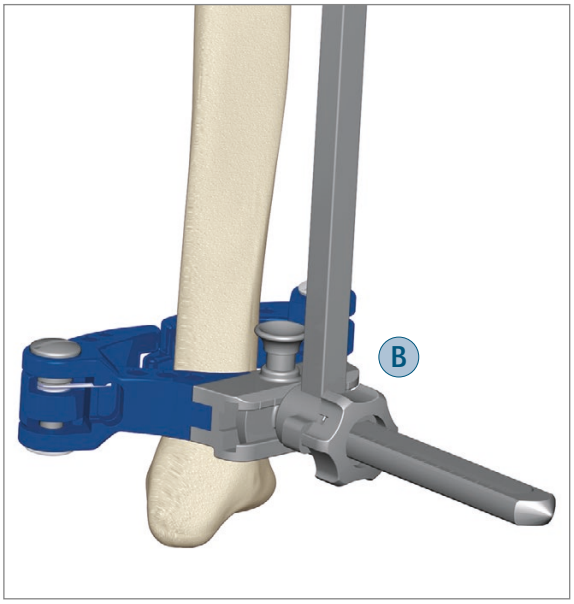
Varus-valgus alignment

Pushing the knob (A) at the bimalleolar clamp, and sliding the alignment system medially or laterally allows to adjust the varus/valgus of the proximal tibia resection. The distance between the laser marked lines on the scale corresponds to a 1° adjustment for a 40 cm long tibia.



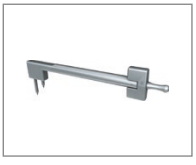
Tibia Slope alignment

Releasing the fixation wheel (B) at the bottom part of the alignment system (by aligning OP-EN), the alignment system can be shifted anteriorly in order to increase the slope of proximal tibia resection. The distance between the laser marked lines on the scale corresponds to a 1° adjustment for a 40 cm long tibia.

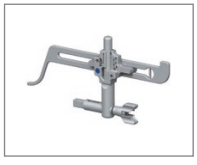


NOTE

For e.motion® a slope of 0° is recommended.



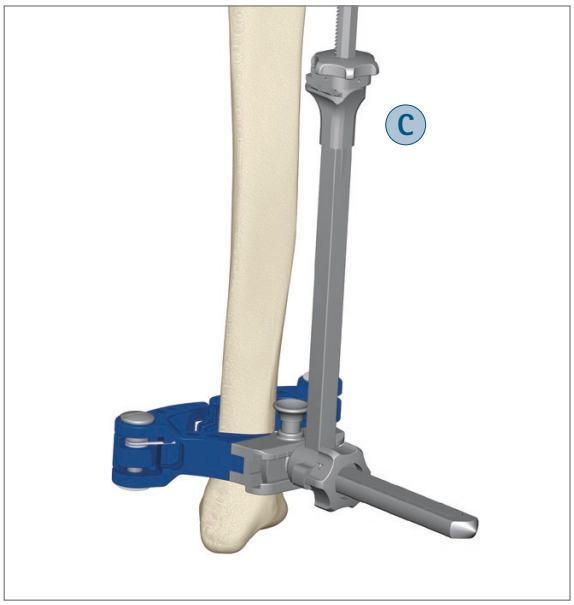
Proximal fixation NS343R



Tibia stylus NS347R

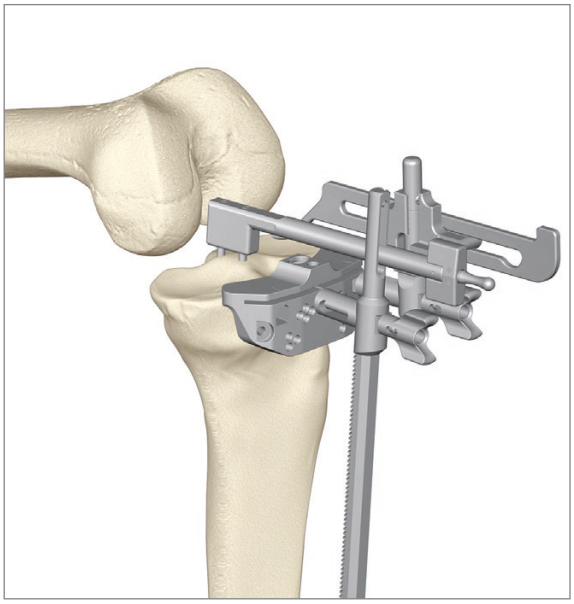
AESCULAP® e.motion® Pro SYSTEM

8 | TIBIA PREPARATION



8.1 Height adjustment (C)

- The resection height is determined during preoperative planning. The aim is to remove a defect on the tibial joint surface as completely as possible in order to create a level bed for the tibial plateau on intact bone.



- The planned value is set on the stylus, which is then mounted into the cutting guide. The extra-medullary alignment instrument is then lowered (wheel 3) until the stylus comes into contact with the chosen point.
- Reference to the healthy tibial plateau is helpful in determining the height of the joint line. Reference to the lowest point of the worn side of the tibia helps minimize the resection by resecting only 2 mm. Preoperative planning and surgeon preference determine which reference to use.

NOTE

The thinnest tibial implant has a thickness of 10 mm (metal + PE) and grows in 2 mm increments.

INSTRUMENTS

Bimalleolar clamp NS345R

Bimalleolar clamp support NS344R

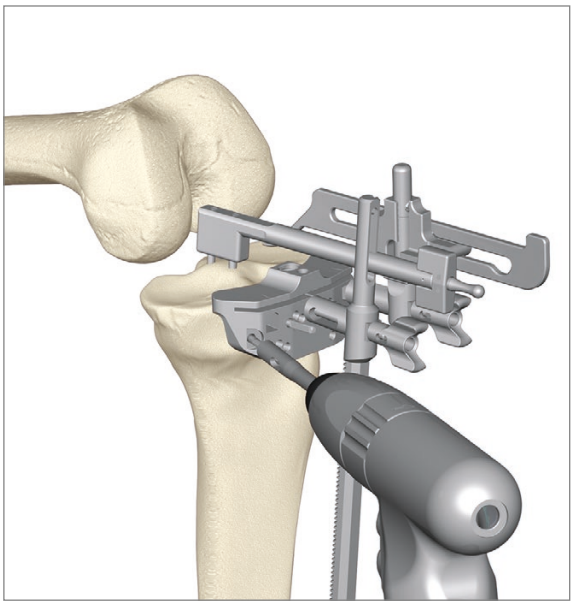
Alignment system handle NS342R

Holding rod for cutting guide NS341R

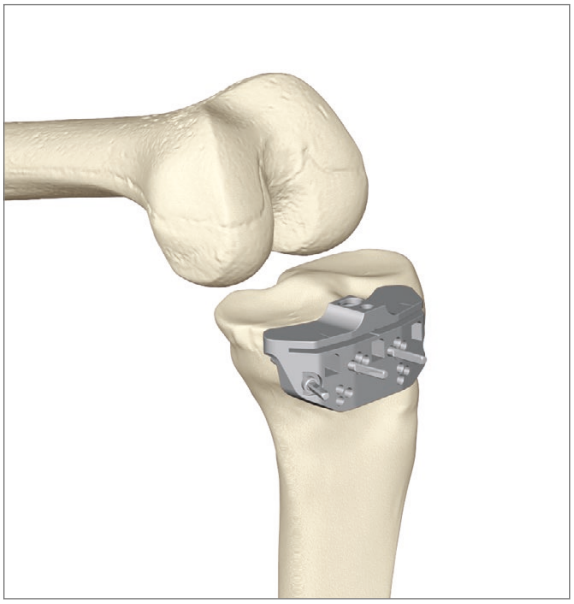
Tibia cutting guide NS334R

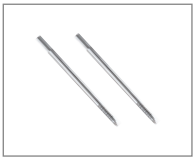
Tibia stylus NS347R

- The cutting block is fixed with two headless pins in position "0". The +/-2 mm pinholes are available on the resection blocks to further adjust the resection level if needed. To avoid movements during the resection, additional pins are set in convergent holes as marked.

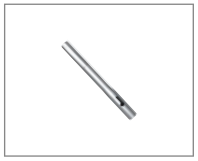


- The EM tibia alignment system is then disconnected from the tibia cutting guide by turning the connecting wheel counterclockwise. The proximal fixation can be removed by disengaging the spike from the tibial spine.





Headless pins 63 mm
NP583R

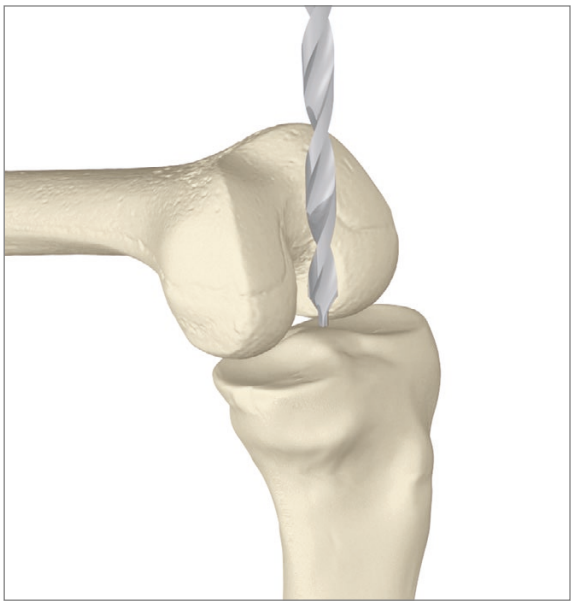


Pin driver NP613R

Acculan 4 GA330 with
drilling adapter GB664R

AESCULAP® e.motion® Pro SYSTEM

8 | TIBIA PREPARATION – INTRAMEDULLARY ALIGNMENT

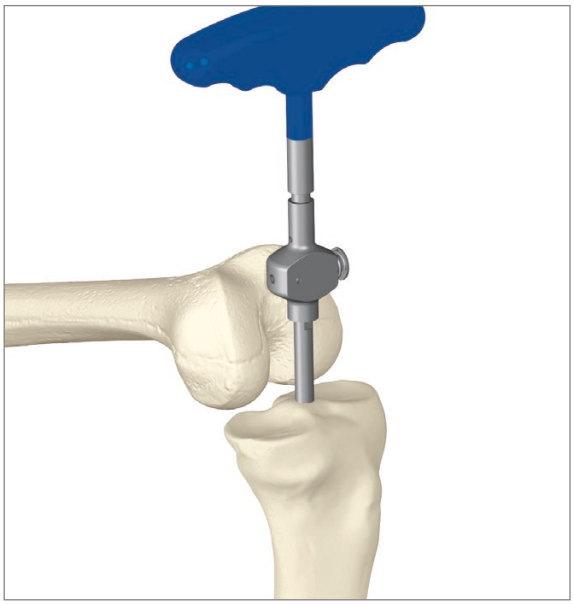


8.2 Intramedullary Alignment

- The medullary canal of the tibia is opened with the Ø 9 mm starting drill bit. The surgeon has to pay close attention of the drilling direction in order to avoid cortical violation of the posterior metaphysis.

NOTE

A tibial slope that is too large can result in an anterior cortical impingement if long tibial stems are used.



- After irrigation and suction, the intramedullary rod is inserted into the prepared canal using the T-handle. Once the T-handle is removed, the intramedullary alignment system is mounted on the rod with the chosen posterior slope angle sleeve (0, 3, 5, or 7°) and the cutting guide.

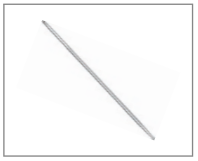
NOTE

For e.motion® a slope of 0° is recommended.

INSTRUMENTS

Drill Ø 9 mm NE443R

T-handle NE198R



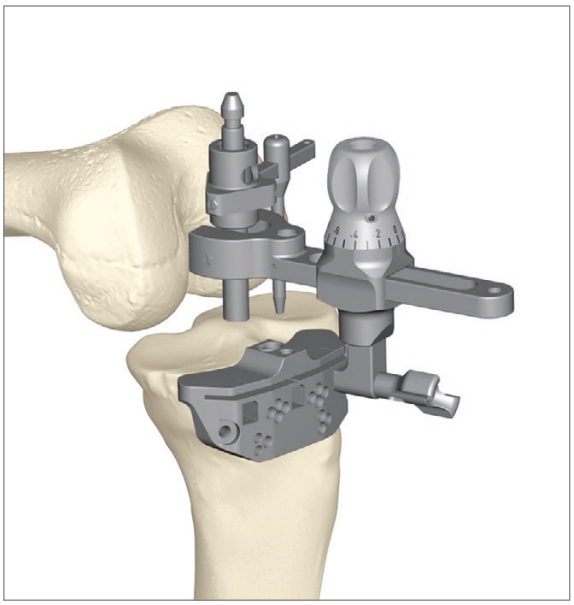
IM alignment rod NS331R

IM alignment system NS332R

Tibia cutting guide NS334R

Tibia IM stylus for orientation sleeves NS847R

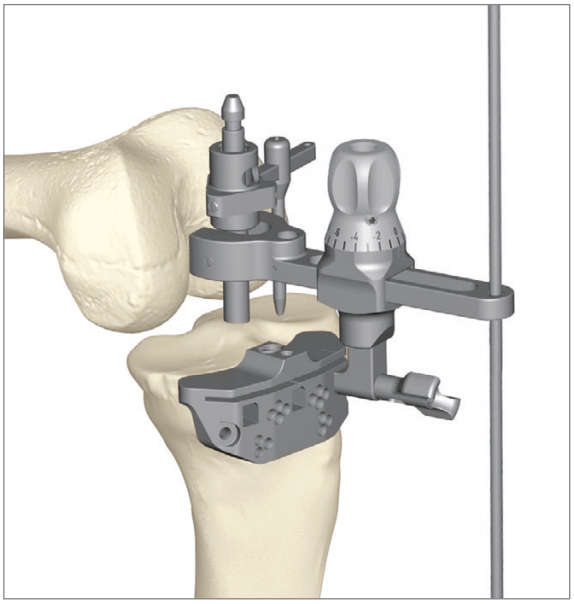
- The stylus is set on the deepest point of the tibia plateau to define the 0-level cut. The height of the cut is then adjusted by turning the tuning wheel to the desired amount of resection in millimeters.

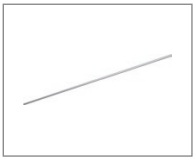


NOTE

The thinnest tibial implant has a thickness of 10 mm (metal + PE) and grows in 2 mm increments.

- The alignment of the cutting block can be checked with the alignment rod.



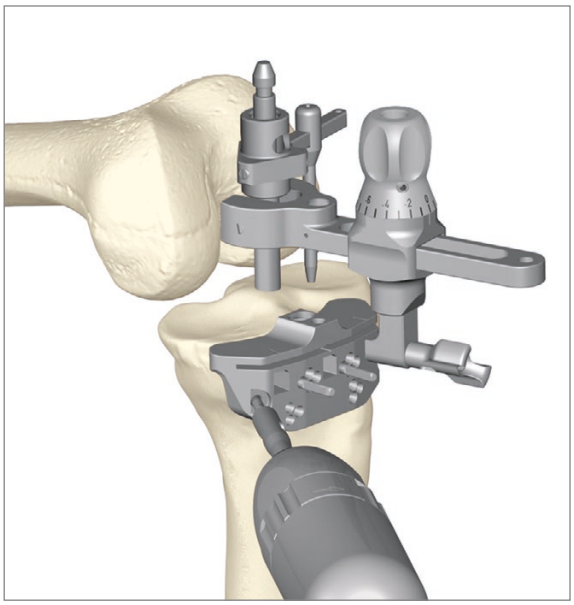


Alignment rod long
NP471R

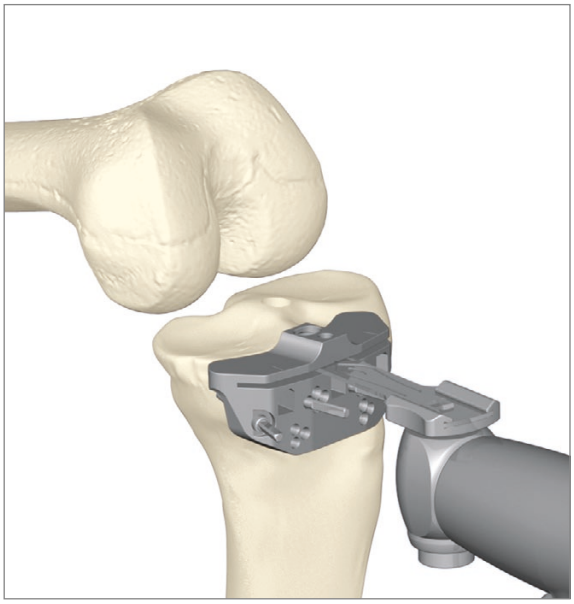
Tibia IM orientation sleeves 0°, 3°, 5°, 7°
NS843R-NS846R

AESCULAP® e.motion® Pro SYSTEM

8 | TIBIA PREPARATION



- The cutting block is fixed with two headless pins in position "0". The +/-2 mm pinholes are available on the resection blocks to further adjust the resection level if needed. In order to avoid movements during the resection, additional pins are set in convergent holes.
- The cutting block is unlocked by opening the knob. The IM tibial alignment system is then removed in one step using the T-handle.



8.3 Tibia Resection

- Once the cutting block is positioned and fixed, the proximal tibial resection is performed. After performing the proximal tibial resection the block is removed and the resected bone taken away.
- A careful inspection of the peripheral resection is mandatory in order to check that no remaining bone stock is present. Further removal of meniscal remnants and osteophytes that encroach the posterior capsule is then performed.

NOTE

The protection of the surrounding soft tissues of the knee joint is paramount. A special attention has to be paid: use of Hohmann retractors, collateral retractors, PCL retractor is recommended in order to protect them during the resection.

INSTRUMENTS

IM alignment rod NS331R

IM alignment system NS332R

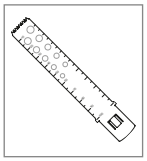
Tibia IM stylus for orientation sleeves NS847R

Tibia cutting guide NS334R

Headless pins 63 mm NP583R

Tibia Intramedullary orientation sleeve NS843R - NS846R

Acculan 4 oscillating saw GA330



Single-use saw blade GE249SU

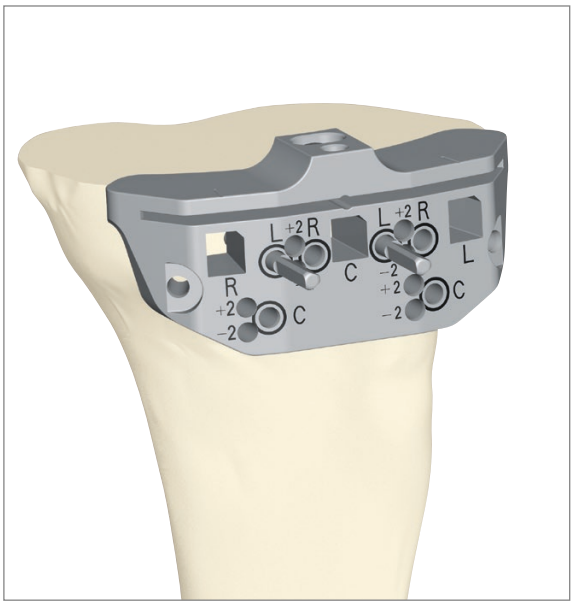
1.27mm thick

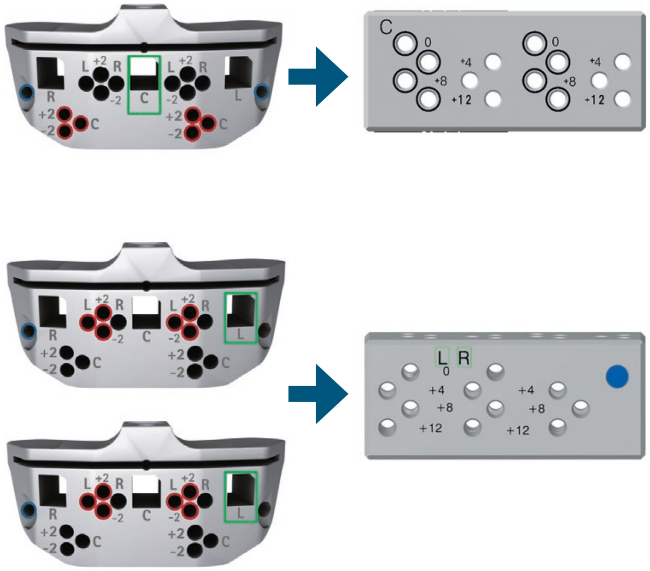
8.4 Tibia Augmentation

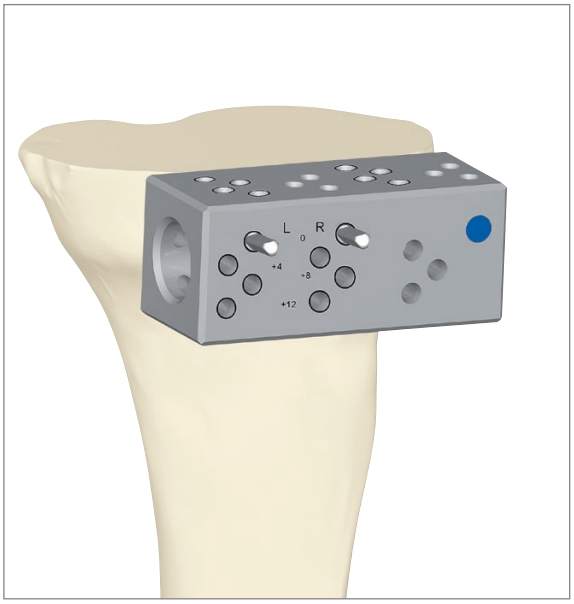
- For bony defect on the tibia plateau, the e.motion® system offers semi tibia augments in heights of 4 mm, 8 mm and 12 mm.

After the tibia standard resection, the tibia cutting guide is removed. According to the used pin wholes on the tibia cutting block, the move block placed over the two headless pins on the side "C" or "LR" (see figure below).

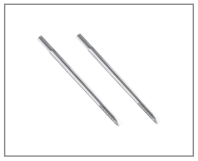
Two additional headless pins are inserted in the requested depth. After removing the move block and the first two parallel pins, the tibia cutting guide can be placed over the new drilled pins.



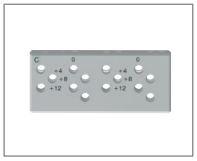




Tibia / distal cutting guide
NS334R

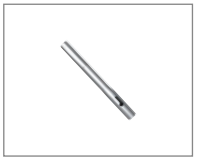


Headless pins 63 mm
NP583R



Tibia move block
NQ1077R

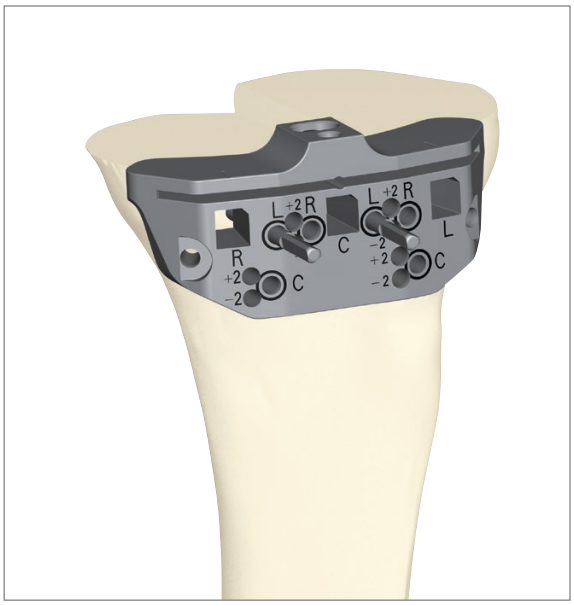
Acculan 4 GA330 with
drilling adapter GB664R



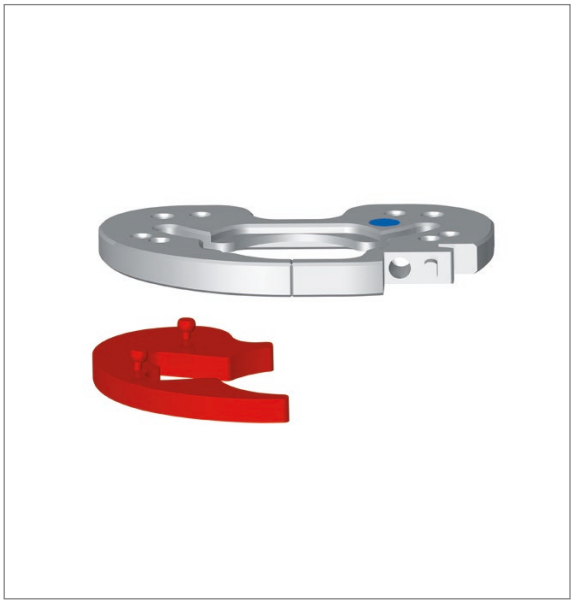
Pin driver NP613R

AESCULAP® e.motion® Pro SYSTEM

8 | TIBIA PREPARATION



When the cutting guide is fixed with two convergent pins, the hemi spacer resection can be performed. For the sagittal cut a reciprocating saw is used.

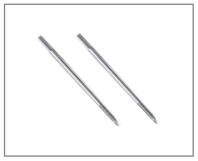


NOTE

For tests with the trial implants the correct hemi spacer has to be clicked under the trial tibia plateau. During measuring of extension and flexion gap the height of the hemi spacer is added at the resected tibia side. An e.motion® UC/PS Pro tibia plateau which offers the possibility to screw hemi spacer has to be used for definitive implantation.

INSTRUMENTS

Tibia/Distal cutting guide
NS334R



Headless Pin 63 mm
NP583R

Acculan 4
oscillating saw GA330

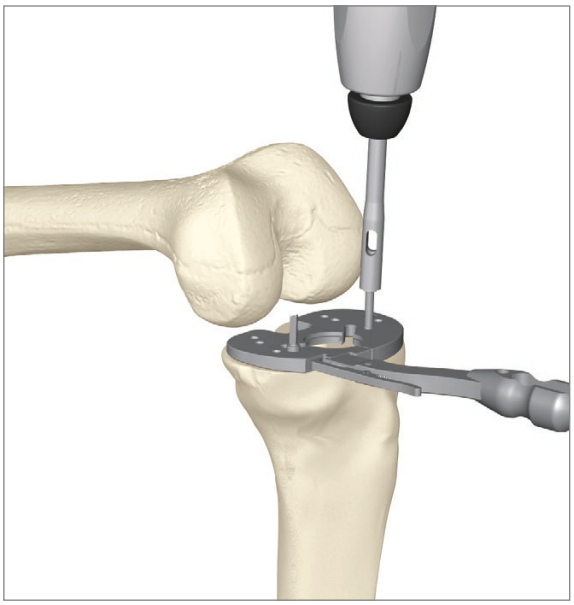
Screw Driver NS410R

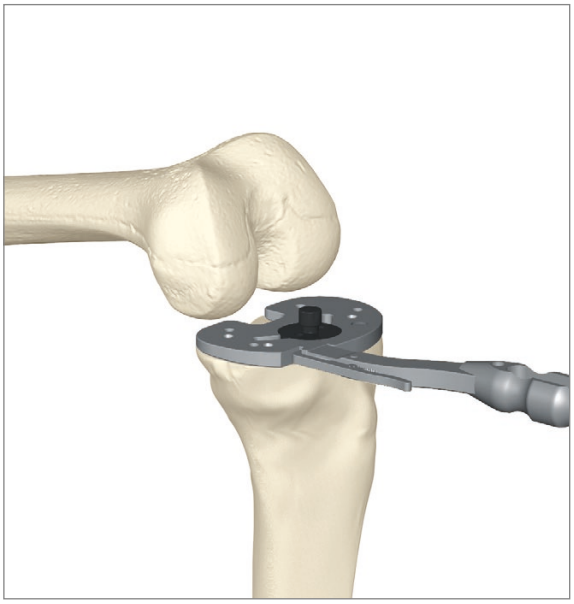
Tibia preparation plateau
NS532R-NS538R

Tibia trial augment
NS922-NS947

8.5 Tibia Keel Preparation

- The ideal size of the asymmetric tibia implant is determined by superposing the different tibia preparation plateau sizes onto the created surface trying to reach the best bony coverage with the proper transverse rotational alignment of the trial base plate while avoiding ML and AP overhang.
- The rotation peg is clicked into the tibia plateau. With the rotation peg the position and rotation of the meniscus component can be checked.
- The chosen tibia trial preparation is placed flush onto the tibia resection and the rotation is assessed with the help of the EM rod placed through the holder.References for the rotation are the mid-third of the anterior tuberosity and the second toe axis of the leg. These two landmarks are often not coincident with mechanical axis of the tibia and the surgeon should consider the rotation with respect to the tubercle to maintain extensor mechanism alignment. The plateau is fixed by the short headed pins in the marked holes.
- Another option is to insert the tibia and femur trial implant with the adequate trial meniscal component. The rotation peg insert of the corres-ponding size group helps to main the meniscal component in place. By exercising flexion extension movements combined with slight rotational stresses, the tibia plateau will find a natural position under the femur trial. This position is marked anteriorly using the electric cautery right where the plateau has a central anterior laser marking. Care should be taken to assess the stability of the extensor mechanism before accepting this 'free float' alignment of the tibial base plate.





Acculan 4 GA330 with drilling adapter GB664R

Acculan 4 oscillating saw GA330

Tibia preparation plateau NS732R-NS738R

Tibia trial / prep. plateau holder NQ378R

Headed pins 30 mm NP585R

Pin driver NP613R

rotation peg NS739R

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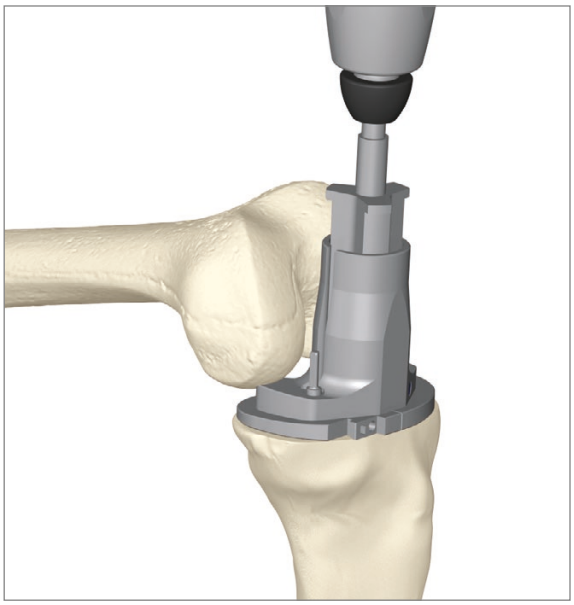
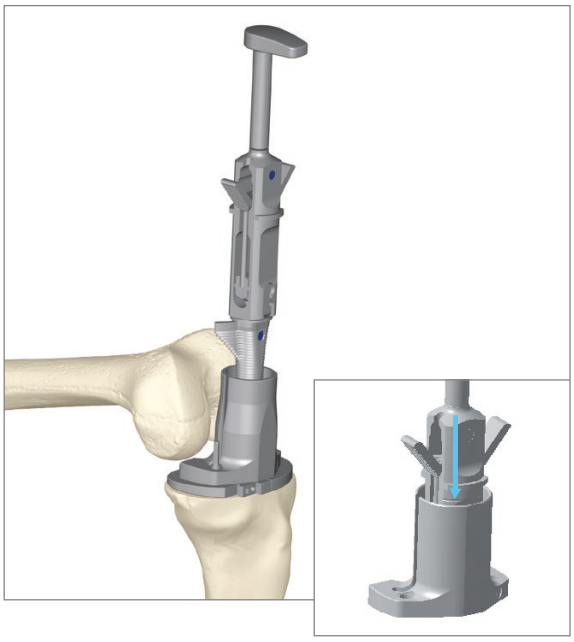
8 | TIBIA PREPARATION



- The holder is removed. The guiding tower of the corresponding size group is placed on the tibia plateau by engaging the posterior teeth first. The anterior part is stabilized by positioning the tower over the headed fixation pins.
- The drill with stop is first used to prepare the bone for the winglet chisel.

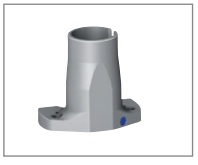


- The wing stem preparation is performed by using the winglet chisel corresponding to the chosen size group connected to its handle. The chisel is hammered in until flat on the tibia plateau. If no stem is used, the chisel wing stays in place as a trial. The two lever are pushed for removal of the handle. If a stem is used, the chisel is removed using the hammer.

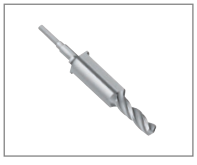
INSTRUMENTS

Tibia trial / preparation plateau NS532R-NS538R

Headed pins 30 mm NP585R



Guide for winglet chisel NS527R-NS529R



Drill with stop NS521R-NS523R

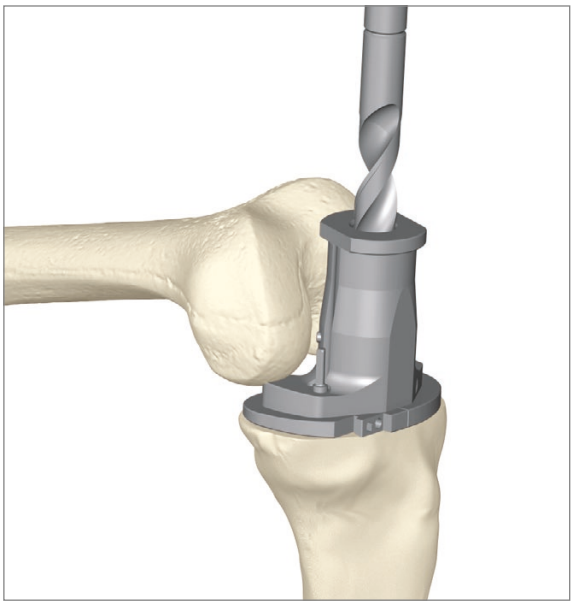
Acculan 4 GA330 with drilling adapter GB664R

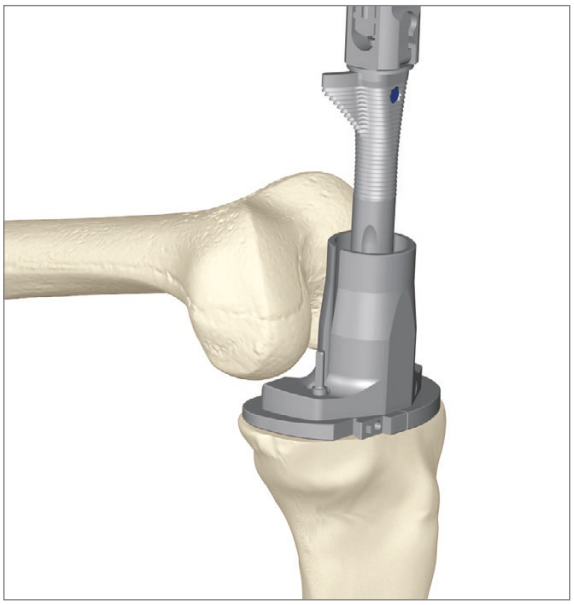
8.6 Tibia shaft preparation

In case of poor bone quality, the primary fixation can be enhanced by using a stem extension. According to the surgeon's philosophy, a cemented stem or a cementless stem can be chosen.

Option 1: priority to the tibia resection

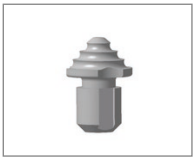
In this case, the tibia preparation is performed following the steps described previously (§ 8.1 to § 8.4). At the last stage, instead of using the standard Ø 14 mm drill, a long drill is used for preparing the site of the future stem.
Length and diameter of this long drill should be assessed on the pre-operative X-rays. The drilling is performed through inserts for the guiding tower and the diameter (Ø 12, 14 or 16 mm) corresponds to the trial stem diameter. Three laser markings are available on the drill in order to define the right depth for short, middle or long stems. For the winglet preparation, the corresponding trial tibia stem is connected to the winglet chisel for the final preparation. Please note that this option is indicated for cemented stems.





NOTE
The implant stems have diameters Ø 10, 12, 14 and 16 mm in order to manage a 1 mm cement mantle thickness around the stems. For the cement mantle of the 16 mm stem the 18 mm reamer should be used.

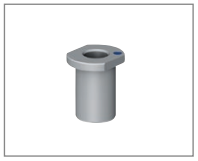
NOTE
For safety reasons the long stems can only be prepared with reamers not with drills.



Obturator for tibia broach
NS363R

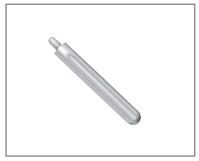
Winglet chisel / trial keel
NS791R

Osteodenser holder
NS520R



Tibia drill sleeve for cemented stem
NS547R-NS549R

Drill for cemented stem
NS544R-NS546R



Trial stem cemented
NE094T-NE097T,
NE114T-NE117T,
NE124T-NE127T

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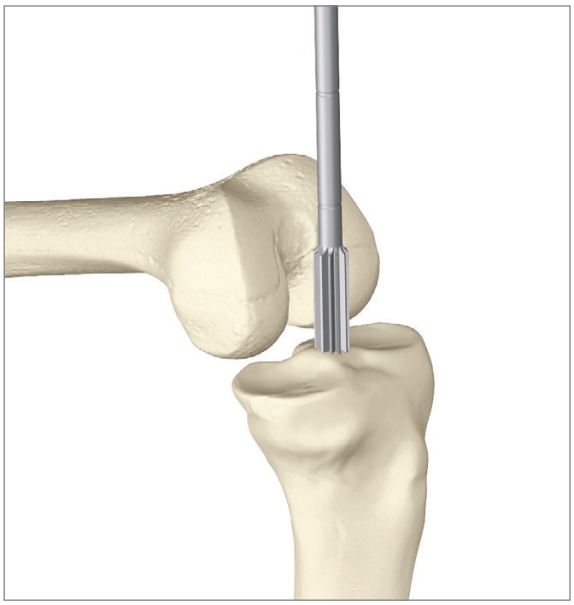
8 | TIBIA PREPARATION

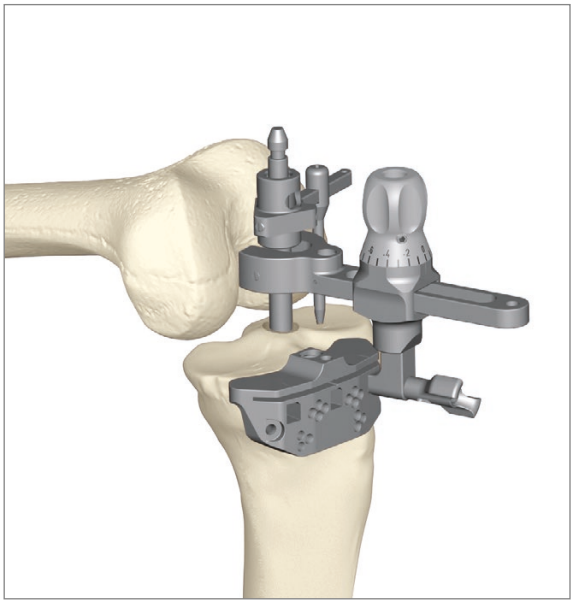


Option 2: priority to the extension stem fixation

In this case, the medullary canal of the tibia is opened according to the preoperative planning (entry point) with the Ø 9 mm drill. The thinnest reamer is then coupled to the T-handle and inserted into the tibia medullary canal as deep as possible until a primary stability is achieved and a depth laser marking reaches the estimated level of the tibia resection (short or long stem). If not, a thicker diameter is used until stability is achieved. Once the T-handle is removed, the intra medullary alignment system is mounted on the reamer with the 0° angle sleeve (angled sleeve for slope is not possible here!) and the cutting guide. The stylus is set on the deepest point of the tibia plateau to define the 0-level cut.

NOTE

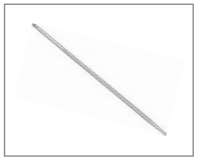
For safety reasons, the 132 mm stems can only be prepared with the the reamers and not with the drills.



The height of the cut is then adjusted by turning the tuning wheel. The alignment of the cutting block can be checked with the EM alignment rod. The cutting block is fixed with two headless pins in position "0"; the +/-2 mm pinholes are available on the resection blocks to further adjust the resection level if needed. In order to avoid movements during the resection, additional pins are set in convergent holes if necessary. The IM tibia alignment system is removed in one step with the T-handle after unlocking the cutting block from the alignment system. Please note that this option is indicated for cementless stems and the surgeon must take into account the alignment of the tibia as directed by the cementless stem since it may not coincide with the mechanical axis of the tibia.

INSTRUMENTS

Reamer for cementless stem NE154R-NE158R

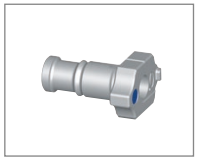


IM alignment rod NS331R

IM alignment system NS332R

Tibia IM stylus for orientation sleeves NS847R

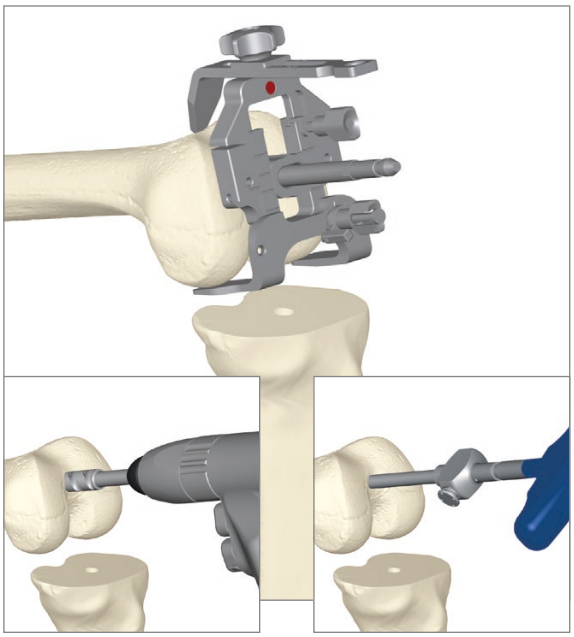
Tibia cutting guide NS334R



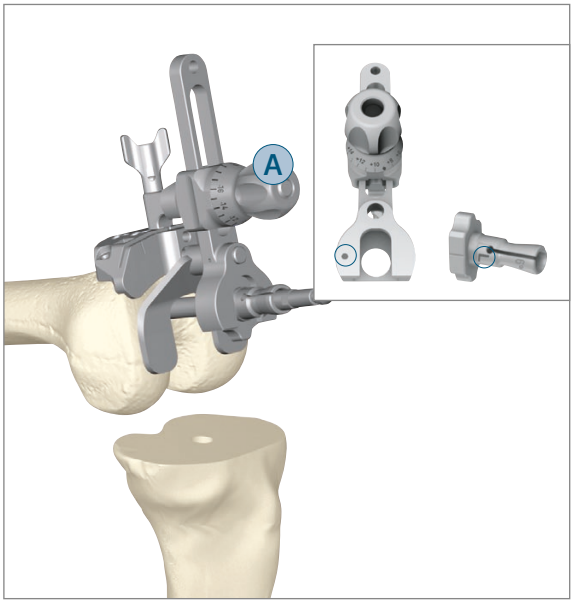
0° orientation sleeve NS843R

9.1 Femur Intra-medullary Alignment

- The medullary canal of the femur is opened according to the preoperative planning (entry point) with the drill Ø 9 mm. The rod is inserted into the intra medullary canal using the T-handle. Once the rod is inserted, the T-handle can be removed.
- For evaluation of the appropriate distal cut, the femur size group is measured. The final size can be decided later.
- The femur sizing is achieved by reading frontally the marked size on the scale when the stylus tip is placed at the intended exit point of the saw blade on the anterior lateral cortex in order to avoid any notching.



- In order to compensate the anatomical valgus angulation of the femoral bone, the appropriate angle sleeve 5°, 6° or 7° according to the preoperative planning is set into the intra-medullary alignment system (angle sleeve 8° and 9° are available on demand). The distal femur contact plate and the cutting block are connected to this system. The assembly is placed on the IM rod in contact with at least one distal condyle.
- The planned height of the distal resection is adjusted by turning the wheel (A) until the desired thickness matches the anterior laser marking. The standard resection corresponds to the distal thickness of the implant and is 7 (size group S), 9 (size group M) and 10 mm (size group L) depending on the size group.




Femur alignment block NS580R


Drill Ø 9 mm NE443R


Acculan 4 GA330 with drilling adapter GB664R


T-handle NE198R


Tibia alignment system NS332R


Distal femur contact plate NS333R, NS834R


Femur orient. sleeve NS335R-NS337R


Tibia cutt. guide NS334R

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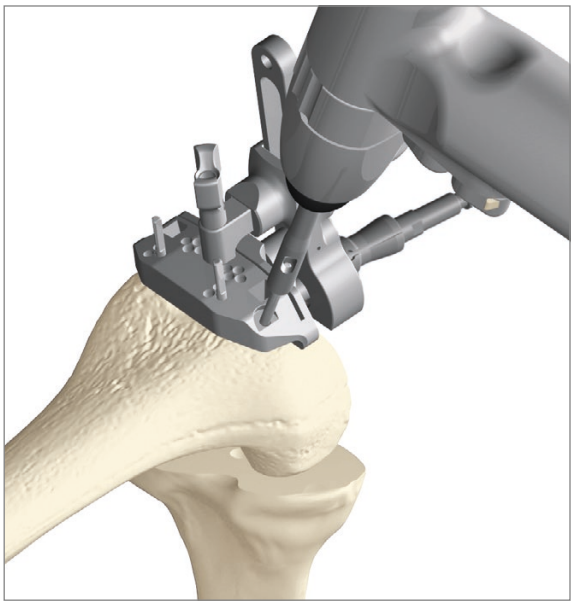
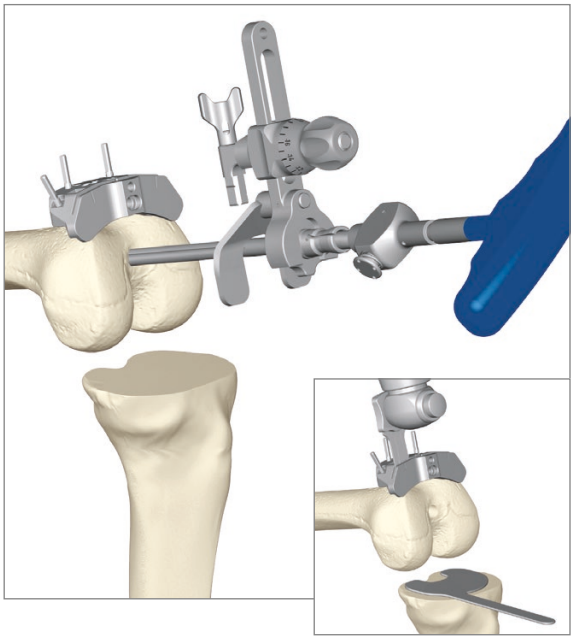


9.2 Distal Resection

- The cutting block is fixed with two headless pins in position "0". To avoid movement during resection, additional pins are set in convergent holes.



- The intra-medullary alignment system is completely removed in one step with the T-handle by unlocking the connection to the cutting guide.
- The distal femoral resection is performed by sawing through the slot with a 1.27 mm thick oscillating saw blade. Make sure that the resection is fully completed and that no remaining bone structures are prominent to the resection plane.
- Pins and cutting block are removed.

NOTE

Please always pay a great care to the lateral structures by protecting them if necessary by the use of Hohmann retractors.

INSTRUMENTS

IM alignment rod NS331R

Tibia alignment system NS332R

Distal femur contact plate NS333R, NS834R

Femur orient. sleeve NS335R-NS337R

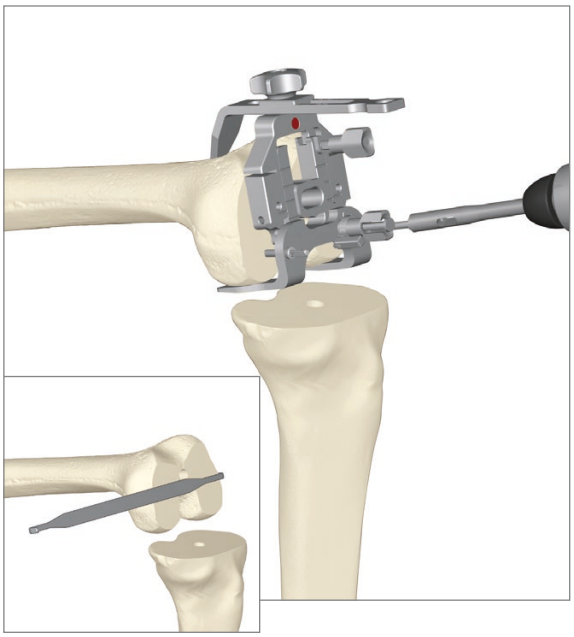
Tibia cutt. guide NS334R

Headl. pins 63 mm NP583R

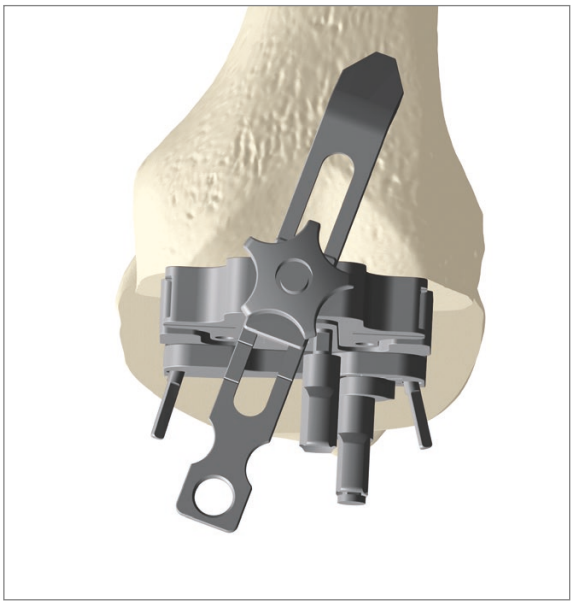
Acculan 4 GA330 with drilling adapter GB664R

9.3 Final Femur Sizing and Rotation

- The ML size of the resected femur should be checked with the ML femoral sizing gauge.
- The femur alignment block is placed flush onto the resected distal surface of the femur. The posterior foot plate must be in contact with the posterior condyles. The femoral alignment block is fixed with two headless pins against the distal femur through the posterior holes.



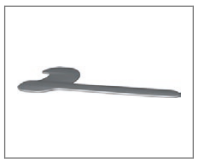
- The femur sizing is achieved by reading frontally the marked size on the scale when the stylus tip is placed at the intended exit point of the saw blade on the anterior lateral cortex in order to avoid any notching. A scale on the surface of the stylus indicates the femur size depth and the position can then be fixed by tightening the screw.



NOTE

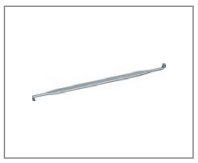
To avoid notching at the anterior femur, make sure that the stylus fixation screw on the femur alignment block is not too loose.

T-handle NE198R

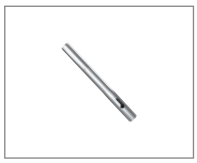


Tibia protection plate NQ377R

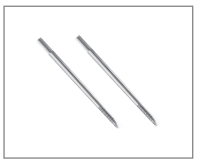
Acculan 4 GA330 with drilling adapter GB664R



ML femoral size gauge NS581R



Pin driver NP613R



Headless pins 63 mm NP583R

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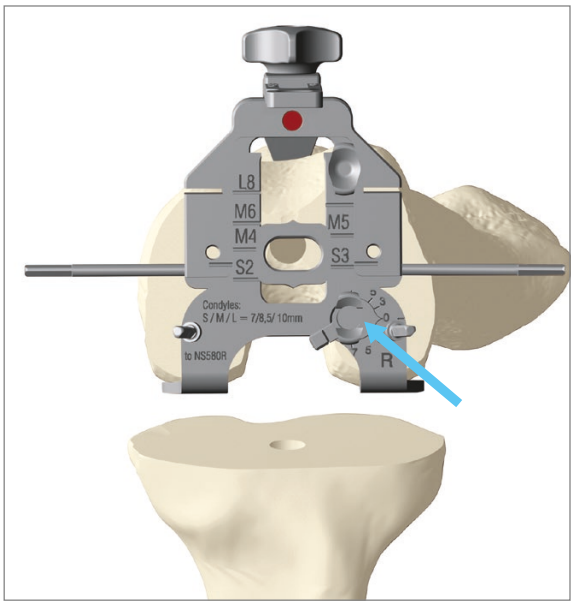
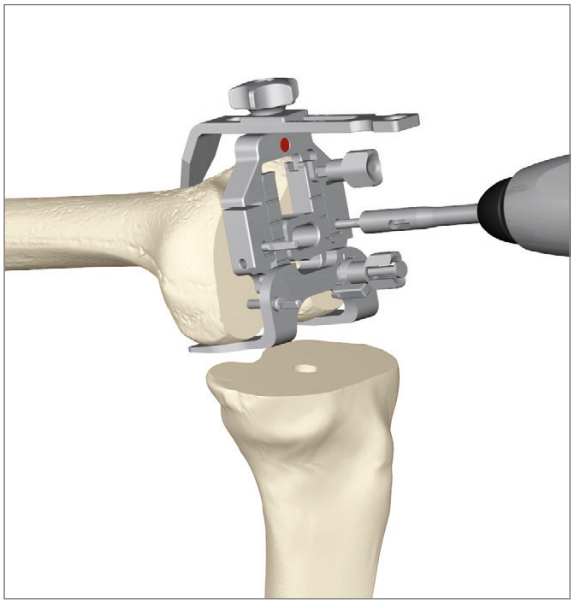
9 | FEMUR PREPARATION

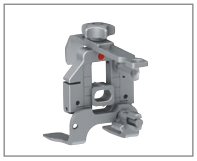


- It is possible to adjust the external rotation by moving the posterior lever arm in the right direction (clockwise for right knees, anticlockwise for left knees). The rotational position is confirmed by assessing the transepicondylar axis perpendicularity or by checking the Whiteside's line through the slot at the middle of the instrument. Size and rotation are fixed by tightening the screw at the bottom lever arm.
- The insertion of standard fixation pins on the medial and lateral aspect of the femur alignment block facilitates referencing of the epicondyles.

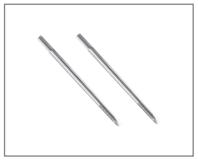


- Two long headless pins are fixed through the 2 frontal holes in order to reference the position of the 4-in-1 cutting guide. It is recommended to check the level of the anterior resection by using the check plate in the alignment block slots. The size to choose is to be read on the scale (see § 6 handling instructions).
- The posterior pins and the block are removed, leaving the headless pins in place.

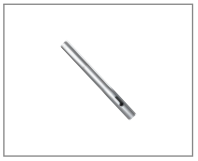
INSTRUMENTS



Femur alignment block
NS580R



Headless pins 63 mm
NP583R

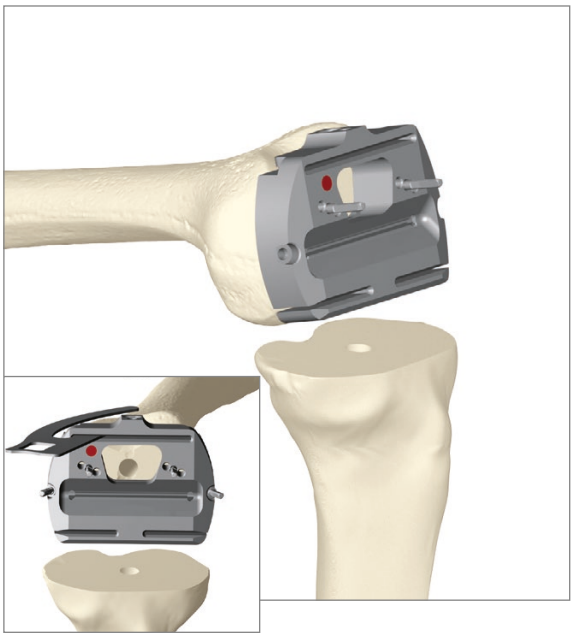


Pin driver NP613R

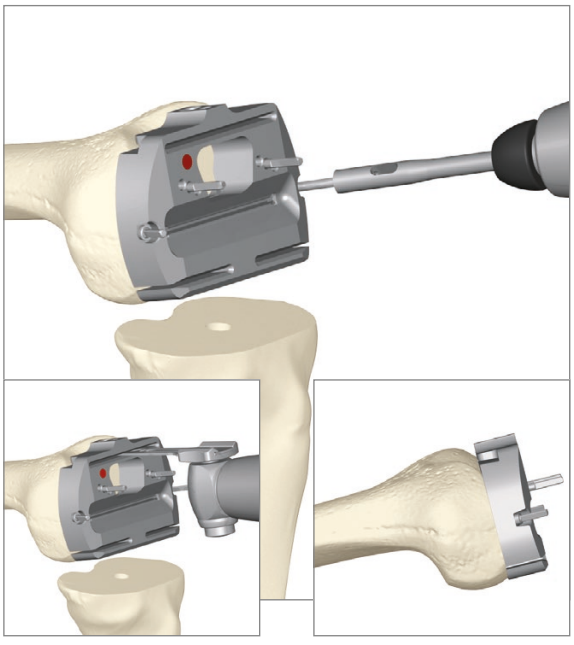
Acculan 4 GA330 with
drilling adapter GB664R

9.4 Femur Anterior, Posterior and Chamfer Resections

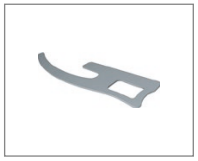
- The 4-in-1 cutting guide that matches the femur size is placed over the two headless pins into the marked "0" mm pinhole and pressed onto the distal resection. It is advised to check the level of the anterior resection by using the check plate in the alignment block slots before placing the converging headed pins for fixation.
- Before fixing the guide with convergent headless pins, it is possible to adjust the AP position by using the holes marked +/- 1.5 mm in order to remain as close as possible to the anterior cortex without notching it.



- The resections are performed as follows: anterior cut, posterior cut, removal of sizing pins, posterior chamfer, anterior chamfer. Thereby, the maximum distal contact surface and cutting block fixation is preserved up to the last resection, ensuring stability.
- Convergent pins and cutting guide are removed, and the resections are carefully checked in order to detect any remaining bone stock.



4-in-1 femur cutting guide NS582R-NS588R



Cutting depth check blade NS850R

Acculan 4 oscillating saw GA330

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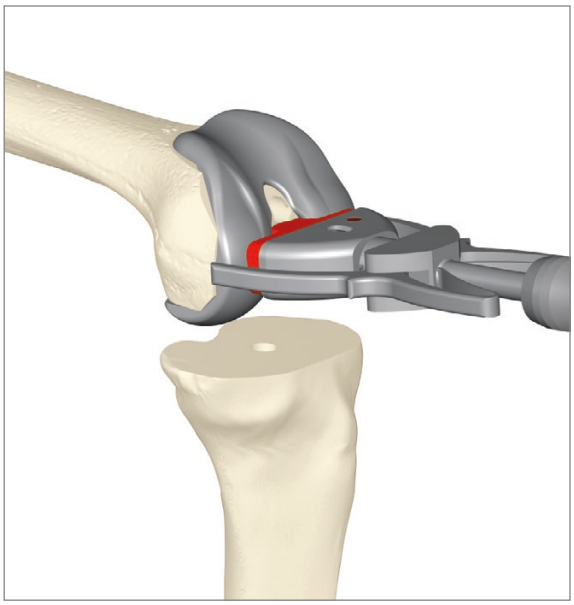
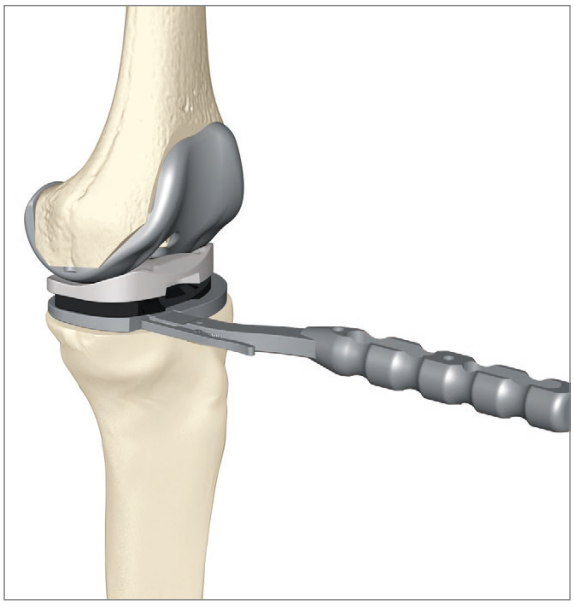
9 | FEMUR PREPARATION



- The quality of the resections and the fit of the prosthesis can be assessed by placing the femur trial implant onto the bone preparation. Using the femur holder, make sure to apply a force toward anterior in order to avoid a flexed position.
- For reposition of the joint, the trial meniscus and the trial tibia plateau are inserted.



- For downsizing the femur, a smaller 4-in-1 cutting guide is placed directly onto the same anterior headless pins using the same holes as previously (-1.5/0/+1.5). Since the reference is anterior, you will achieve the same anterior cut but recut the posterior condyles, the posterior chamfer as well as the anterior chamfer. This will open the flexion gap correspondingly.

INSTRUMENTS

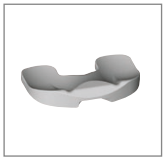
Insert for NS600R, NS601-NS603

Holder for trial femurs NS600R

Trial femurs NS740K-NS759K (PS Pro), NE702K-NE708K, NE752K-NE758K, NS981K-NS986K (UC)

Tibia trial plateau NS732R-NS738R

Tibia trial holder NQ378R

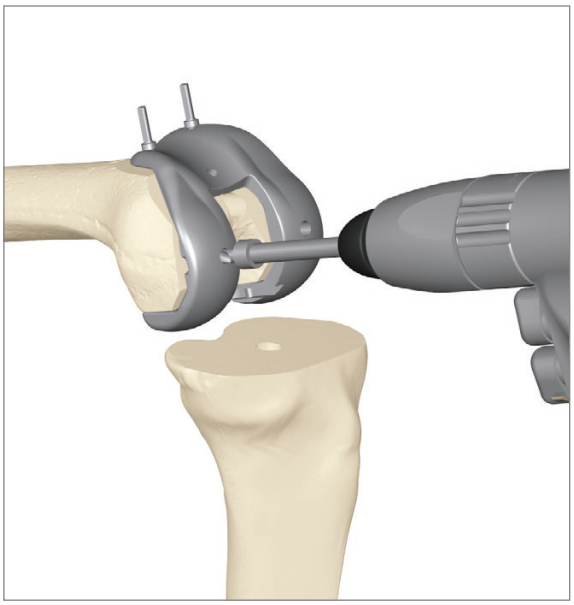


Trial meniscus NS772-NS778, NS782-NS788 (PS Pro), NS622-NS658 (UC)

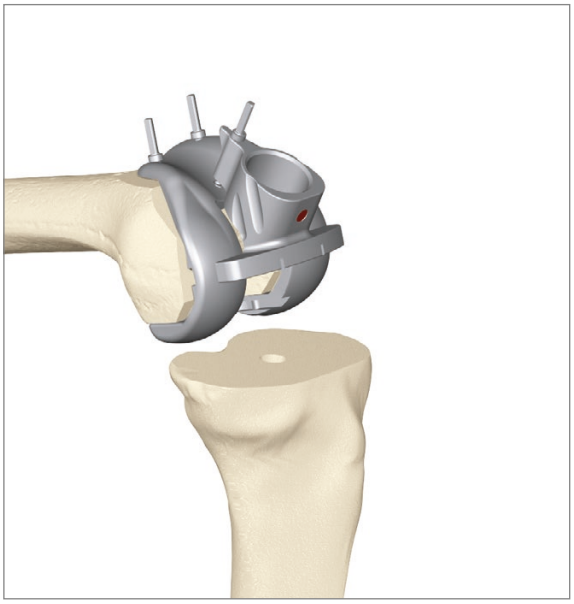
Complementary plates NS675-NS697

9.5 PS Box Preparation

- The femur pegs are drilled before box preparation.
- The trial femur implant is placed onto the prepared femur using the corresponding holder making sure to apply an extension force anteriorly in order to avoid a flexed position. The trial femur implant is fixed along the proximal trochlear groove with two headed pins.



- The miller guide is fixed into the holes of the distal trial femur. An additional pin avoids a movement of the miller guide.



Femur box milling guide NS797R-NS799R

Femur drill peg NE458R

Headed pin 50 mm NP586R

Pin driver NP613R

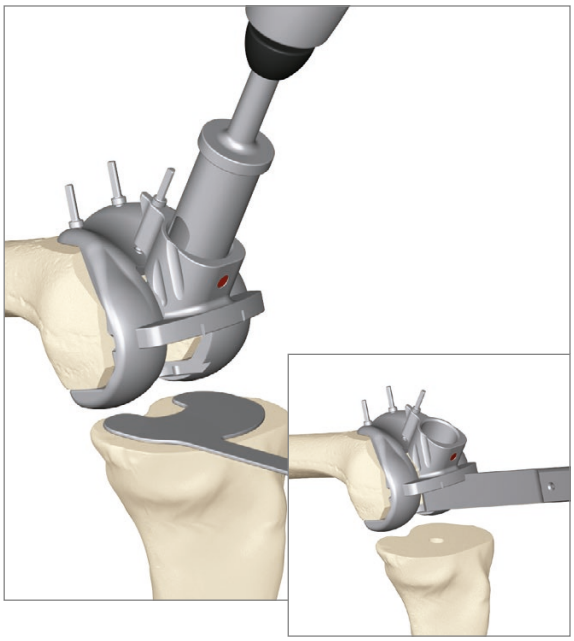
Acculan 4 GA330 with drilling adapter GB664R

Headless pins 63 mm NP583R

Drill 9 mm NE443R

AESCULAP® e.motion® Pro SYSTEM

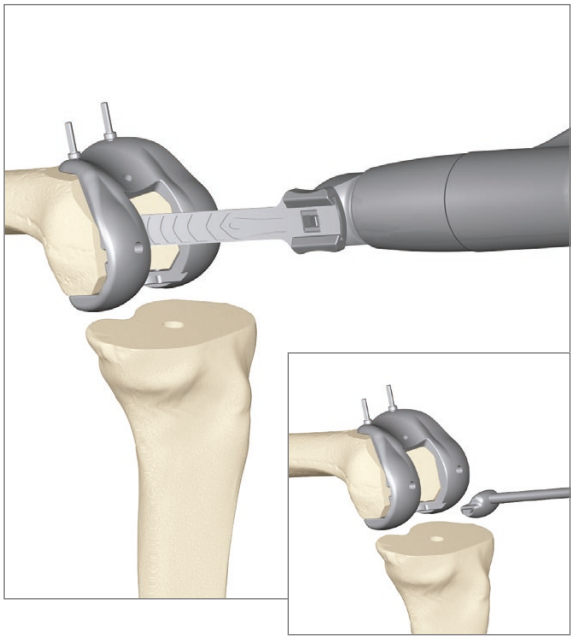
9 | FEMUR PREPARATION



- Use the special box miller for the chosen size group to prepare the small box.
- Be careful with the soft parts of the posterior femur.
- Use a protection plate for the tibia.

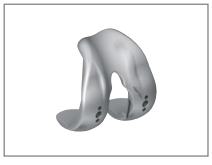
NOTE

The area between posterior capsule and intercondylar notch should be coagulated in order to prevent postoperative uncontrolled bleeding.



- The rest of the bone at the medial and lateral inner box wall is removed with a saw blade or a flat chisel. In case of chisel use the two slots on the miller guide for the chisel. Care must be taken not to cut too deep into the femur.
- The miller guide is removed and the trial femur implant can be used with trial PS Pro meniscal components.
- Optionally the trial can be inserted for a simulation of the camp-post mechanism.

INSTRUMENTS



Trial femurs NS740K-NS759K (PS Pro), NE702K-NE708K, NE752K-NE758K, NS981K-NS986K (UC)
40

Femur box milling guide NS797R-NS799R

Femur box miller NS794R-NS796R

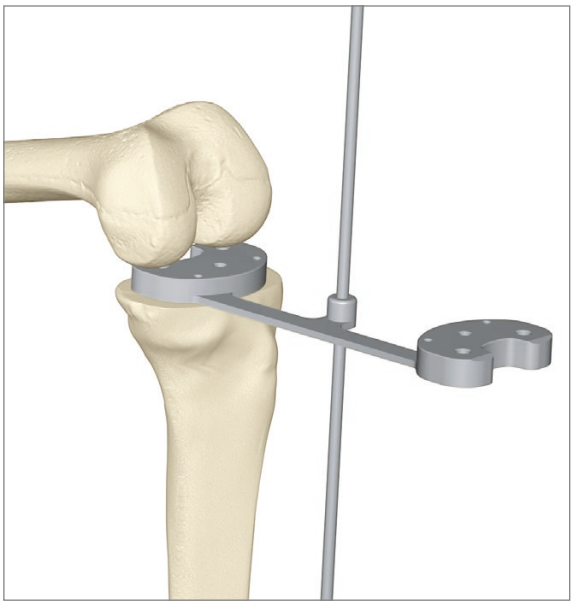
Trial cam NS763R-NS767R

Acculan 4 oscillating saw GA330

Handle for trial cam NS761R

10.1 Tibia First – Measurement with Spacers

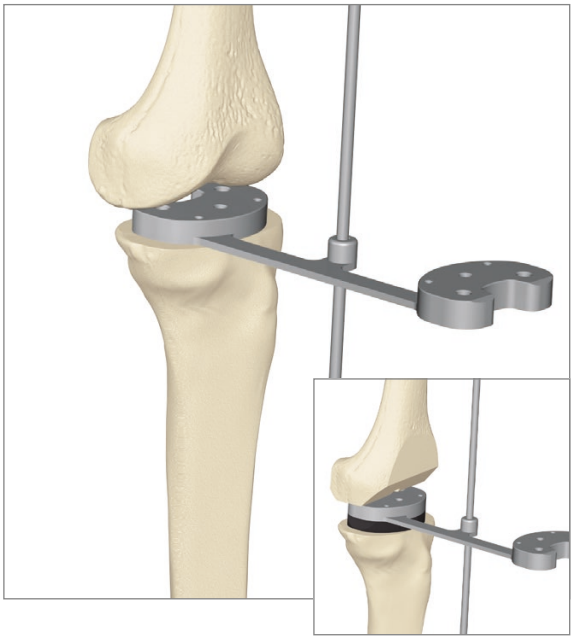
After performing the tibia resection, check the plane of the resection by inserting the thinnest spacer block (10 mm) in the joint. If the resection needs correction then apply the cutting block accordingly and recut the proximal tibia. The soft tissue gaps can be assessed by applying a varus/valgus stress in extension and in flexion. If the joint is too lax, insert the next spacer and repeat the operation until a spacer thickness allows the knee to reach a stable point in flexion and extension.



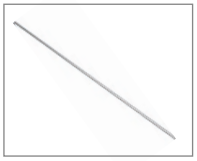
NOTE

The PCL must be released and removed prior to assessing gaps in flexion and extension since it will increase the flexion gaps once removed.

- If the medial and lateral gaps are asymmetrical, it is necessary to perform the appropriate release on the contracted side and then repeat the gap measurements with the spacers until stability is reached.
- If the flexion and extension gaps are incongruent then please refer to the chapter 10.4 strategies and define the right corrective action.
- The thickness of the last spacer that allows good balance and stability of the knee corresponds to the needed polyethylene thickness that should be used.
- At each step, the leg axis can be checked by inserting the alignment rod through the spacer handle; the rod should point respectively at the femoral head center and the ankle joint center.
- The measurements can also be done after the distal resection is performed by adding the distal cut spacer of the corresponding size group (S, M or L) for the extension measurement.

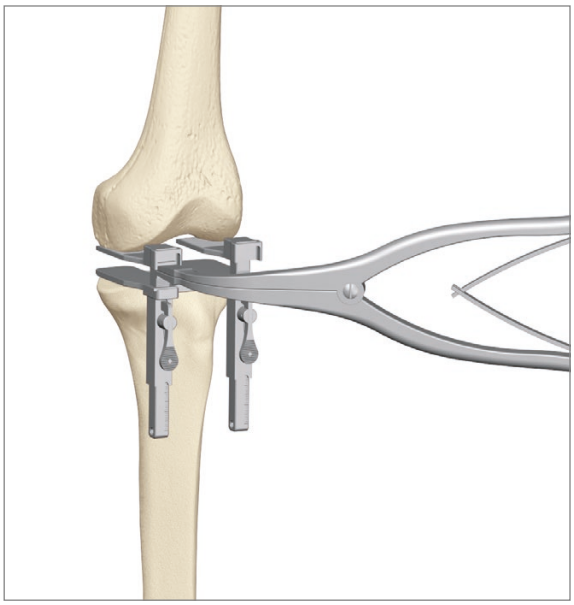


Spacer NS852R-NS854R



Control rod long NP471R

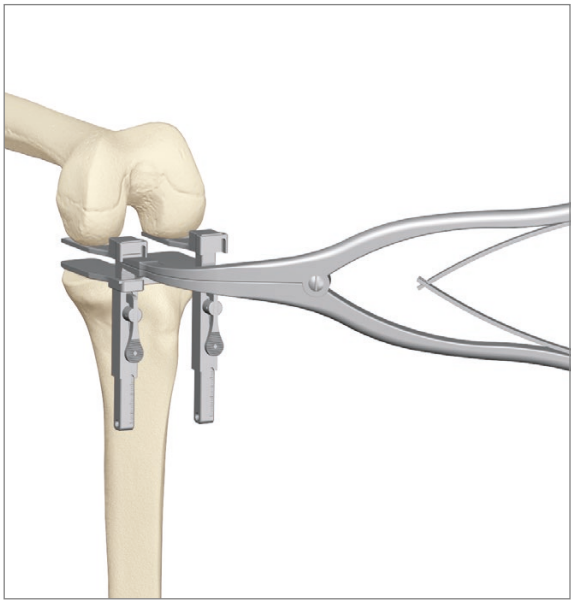
Complementary Spacer NS497 - NS499



10.2 Optional Tibia First – Measurement with Distractor

- After performing the tibia resection, check the plane of the resection so that it correspond to the mechanical axis of the tibia. Insert the distractor into the joint and use the clamp to distract sequentially the medial and lateral gaps in extension.
- If the medial and lateral gaps are asymmetrical, it is necessary to perform an appropriate release on the contracted side and then repeat the gap measurements.

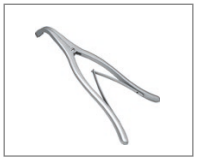
NOTE
The distractor set is included in the navigation instrument set (NP138).



- When the joint is balanced in extension, note the thickness of the gaps, and move to the flexion gap measurement and repeat the same operation. In flexion, the possible future rotation of the femoral component should be taken into account.
- When the flexion gaps (FG) differ from the extension gaps (EG), calculate the needed thickness of the distal resection in order to equalize flexion and extension:
  distal resection = 9 mm – EG + FG.

NOTE
The PCL must be released and removed prior to this step since its removal will increase the flexion gaps.

INSTRUMENTS

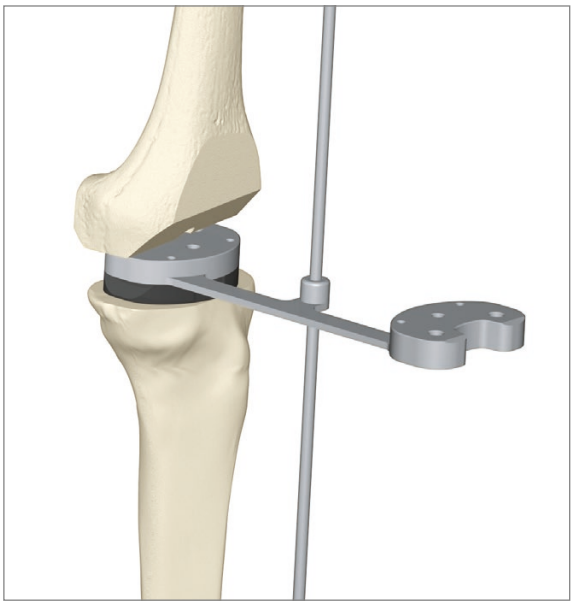


Distraction foreceps
NP609R

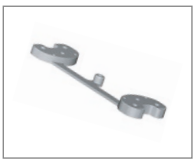
Femur-tibia distractor
NP604R

10.3 Femur First – Measurement with Spacers

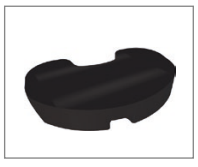
- After completion of the femoral and tibial resections, the trial femur implant is placed on the femur. The height of the resection and flexion/extension gaps can be checked by inserting the spacers like in chapter 10.1.



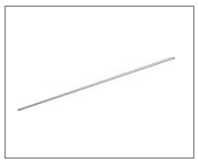
- Alternatively, to measure without femur trial, the height of the distal cut spacer is clicked on the gap spacer. Now the gaps in flexion and extension can be checked.



Tibia cut spacer
NS852R-NS854R



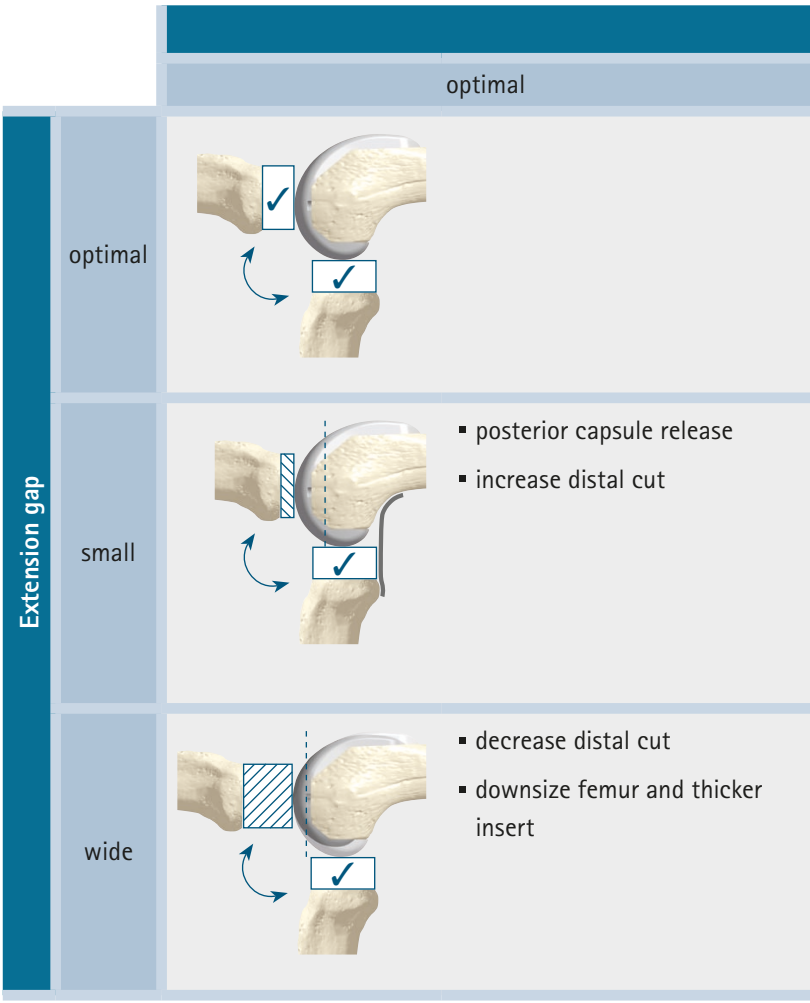
Added femur cut spacer
NS497-NS499

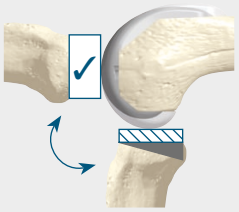
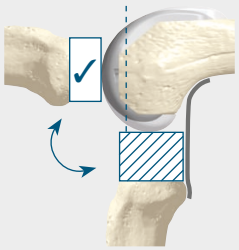
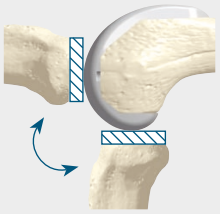
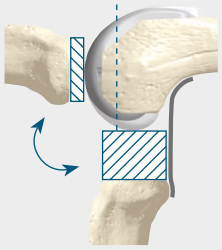
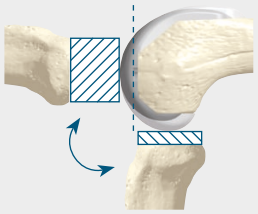
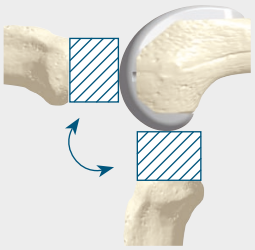


Alignment rod long
NP471R

10.4 Strategies

When the flexion and extension gaps are incongruent, an individualized strategy has to be defined in order to correct it. The table presents some possible options to follow in order to correct a situation where the flexion and extension gaps are not both equally optimal but either tight or wide. This does not claim to be exhaustive of all options for gap management.



	Flexion gap	
	small	wide
	 ▪ increase tibia slope ▪ downsize the femur	 ▪ posterior capsule release and thicker insert ▪ increase distal cut and thicker insert ▪ increase femur size
	 ▪ thinner insert ▪ increase tibia cut	 ▪ increase distal cut, release posterior capsule and thicker insert ▪ upsize femur and increase distal cut ▪ upsize femur and release posterior capsule
	 ▪ downsize femur and thicker insert ▪ downsize femur and decrease distal cut ▪ decrease distal cut	 ▪ thicker insert

Overview femur/tibia compatibility

Size	F2	F3	F4N	F4	F5N	F5	F6N	F6	F7	F8
T2										
T3										
T4										
T5										
T6										
T7										
T8										

Tibia > Femur = no limitation

Femur > Tibia = maximal two femur sizes larger are allowed

Standard combination

Possible combination

NOTE: The meniscal component size is based on femoral size. The same combinations apply for the Narrow (N) components. All patella sizes can be combined with any femur size.

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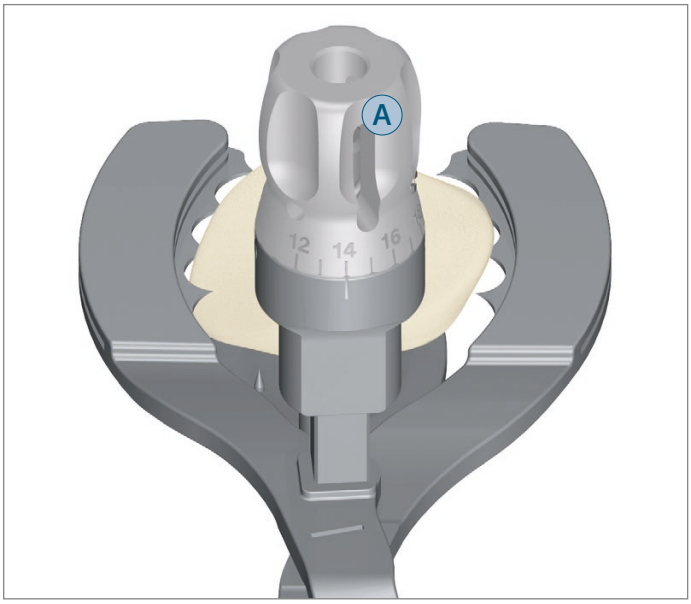
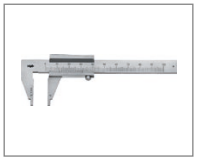
11 | PATELLA PREPARATION

- The thickness of the patella is measured using the caliper. This thickness should not be exceeded after implantation of the patella implant. The level of bone resection is calculated. A minimum thickness of remaining patella bone should be no less than 12 mm.
- The patella is clamped and the level of the resection is adjusted by turning the resection depth wheel (A) to the planned level of remaining patellar bone thickness.
- The resection is performed through the cutting slot with a 1.27 mm thick saw blade.



INSTRUMENTS

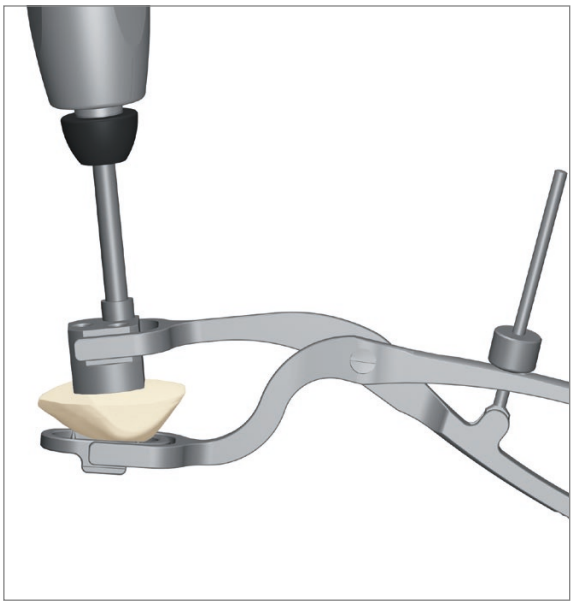


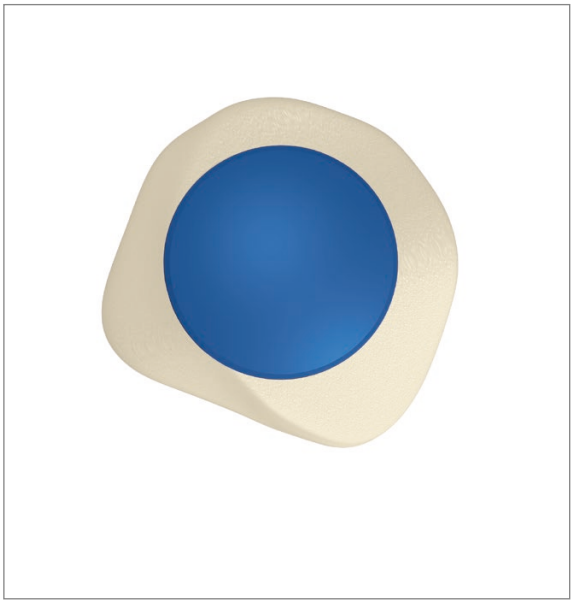
Caliper AA847R

Patella resection clamp NS840R

Acculan 4 oscillating saw GA330

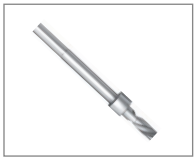
- The patella resection clamp is removed. The patella drill/impaction clamp is set onto the osteotomized patellar surface choosing a medialized position to recreate the resected apex of the articular surface; the trial patella can be placed on top of the drill guide in order to check its position to the medial rim and appropriate positioning in the superior and inferior direction.
- The pegs of the implant are drilled through the holes with the Ø 6 mm drill until the stop is reached. The size of the patella is established with the corresponding trial patellar implant.



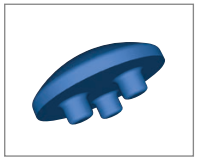


Patella drill / impaction clamp NS841R

Acculan 4 GA330 with drilling adapter GB664R



Drill with stop Ø 6 mm NQ449R



Trial patella NQ281-NQ285

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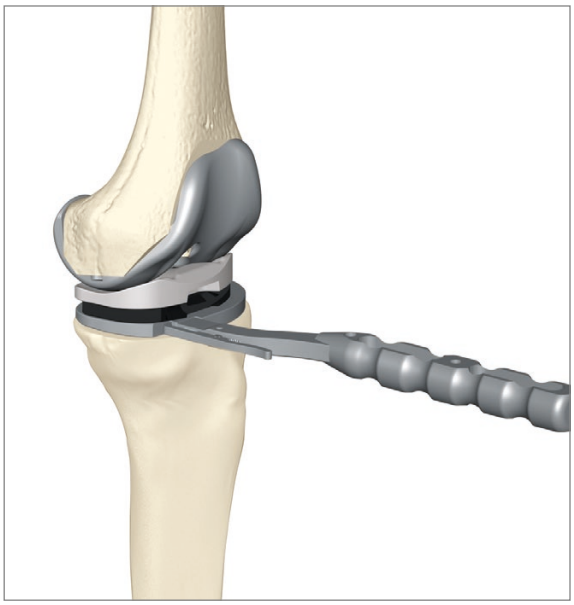
12 | TRIAL REDUCTION



- The trial femoral and tibial implants are placed onto the prepared bony surfaces.
- The meniscus trial corresponding to the gap measurements with the spacer or the distractor is placed between both trial implants.
- The same meniscus trials are used for left and right side. The main upper part of the trial design corresponds to the final design together with the complementary plates the desired height is achieved. With the meniscus trial the medialized center of rotation can be simulated. The R and L on the underside of the complementary plate indicates for which side of the joint the connection is suitable.
- The stability of the joint is assessed by applying varus/valgus stresses in extension and flexion. If the joint appears to be lax (opening of gaps under stress), then a thicker trial meniscus surface is tested.
- The range of motion is assessed. Intra-operative limited extension and flexion and marked hyperextension must be avoided.

TIP

If the PS Pro version is used, check in hyperextension if the post does not impinge with anterior bone. Remove bone if necessary.

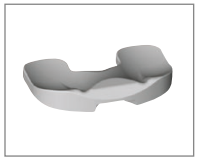
NOTE

In case tibia augments have been prepared, they need to be added to the tibia plateau.

INSTRUMENTS

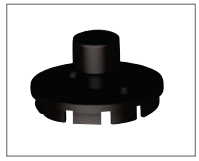
Tibia trial/preparation plateau NS732R-NS738R

Tibia trial/prep. plateau holder NQ378R



Trial gliding surface NS772-NS788 (PS Pro), NS622-NS650 (UC)

Trial spacer 4, 6, 8 mm NS675-NS697



Trial rotation peg NS739R

NOTES

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13 | PREPARATION AND ASSEMLY OF EXTENSION STEMS

- For the assembly of the extension stem on the final implant the stem has to be tightened with a torque of 20 Nm. It is recommended to tighten the extension stem on the table and ensure that the components are hold by an assistant during the tightening.

- The rotation peg is tightened with the torch wrench for 10 Nm.

INSTRUMENTS

Center torque
for stem fixation
NS570R

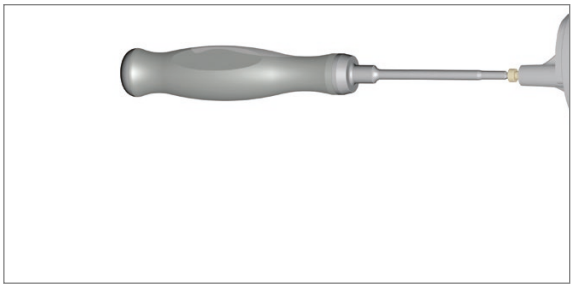
Torque wrench
NE184RM

Stem adapter for
NE184RM
for extension stems
Ø 12, 14 mm NE185R

Stem adapter for
NE184RM
for extension stems
Ø 10 mm NS835R

- If the peek plug is used as an alternative to the opturator to close the tibia plateau, use the screw driver to screw it into the plateau.

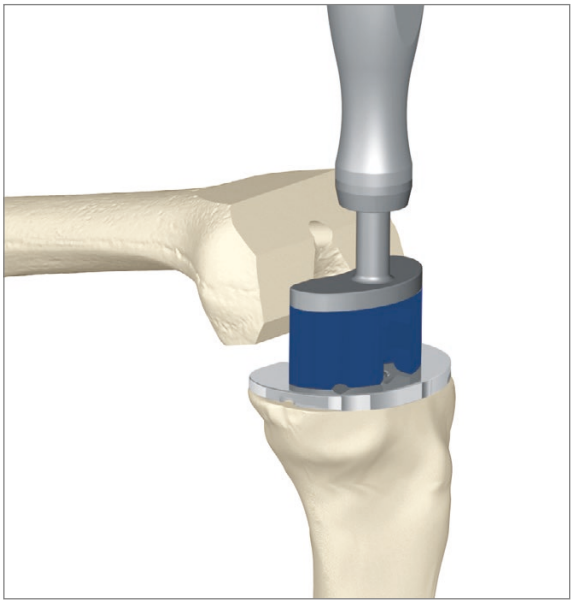
The following implant sequence is recommended:
- Tibia implant
- Femur implant
- Meniscal component
- Patella implant



NOTE
If an opturator is used, it need to be tightened with the key (NS378R).

OPTION
The rotation peg can also be assembled to the tibia implant after the cement has hardened.

- The final tibia implant is brought precisely into the predefined position. The final positioning is achieved with the help of the tibia impactor. The meniscal component can be assembled to the tibia implant before implantation. With the torque wrench plus adapter and a counter holder the 10 Nm can be applied to the assembly.




Tibia plateau impactor NS425


Tibia implant and rotation peg


Torque wrench 10 Nm NE160R


Adapter for torque wrench NP450R Ø 4.5 mm


Peek plug NN260P


Screw driver SW 3.5 NS423R


Stem tightening key NS378R

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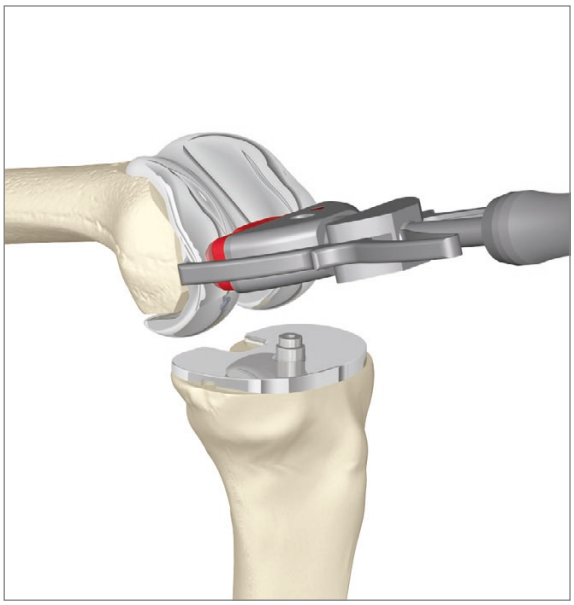
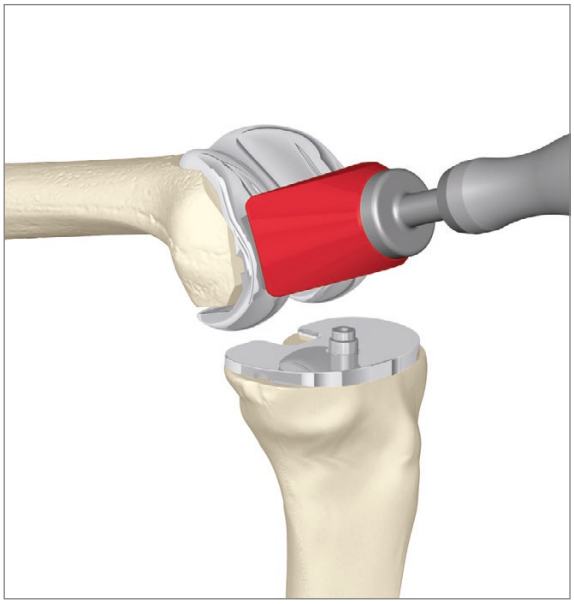
13 | COMPONENT IMPLANTATION



- Using the femur holder and the insert of the corresponding size group, the final femur implant is brought into alignment and implanted. Care must be taken to assure the holder is properly seated and attached to the femoral implant so that it does not dislodge during cementing. A special attention has to be paid to the sagittal orientation: forcing the holder to the anterior direction helps to avoid an implantation in a flexion position.
- The femur holder is opened by turning the handle counter-clockwise.



- The femoral impactor is used to knock the implant into place.

INSTRUMENTS

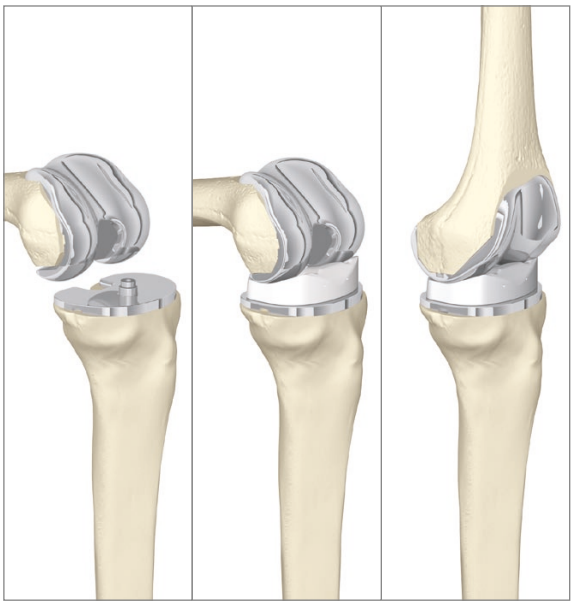
Implant holding/insertion instrument NS600R

Femur insert to NS600R, NS601-NS603

Femur impactor NS424

Femur implant

- The meniscal component is placed over the rotation peg (UC or PS Pro).



NOTE

It may be prudent to use a trial insert and recheck joint motion and stability after the cement has cured before deciding on the final type and thickness of the meniscus insert. Therefore the trial rotation peg (NS540P) is screwed into the final tibia implant.

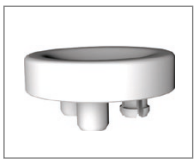
The patella is implanted using the patella impaction clamp and the concave plastic cap, which allows good transmission of forces during the cement hardening process.

NOTE

PS prostheses have a longer trochlea cutout for technical reasons. The patella tracking must therefore be checked. In the case of patella clunk syndrome, the patella must be modified or replaced with an artificial patella.

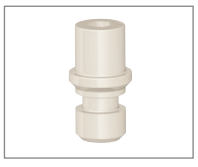
Gliding surface

Patella drill / impaction clamp NS841R



Inlay for NS841R, NS842

Patella implant



Trial rotation peg NS540P

AESCULAP® e.motion® Pro SYSTEM

14 | CEMENTING TECHNIQUE

- Regardless of what fixation method is utilized it is critical that correct techniques are employed in order to avoid complications and early failure. Also, even with accurate cuts it is important to ensure that components are fully seated, as it is easy for this to be obscured when cementing is taking place. Varus-valgus alignment can be significantly affected by unequal medial-lateral cement mantles and poorly seated components and there can be a tendency to place femoral components in relatively flexed positions if specific care is not taken.

- It should also be noted that when definitive components are cemented in, they may prove more stable and seat better than the trials, which are often a little loose. It is therefore worthwhile to recheck the balancing and stability at this point so that further adjustments can be made if necessary. It has been possible to relate poor cementing techniques to early and continuous component migration, which in turn is of positive prognostic significance when predicting aseptic loosening so proper attention to the cementation steps must be taken.

- Preparation of the bony surfaces and cancellous bone should be performed with pulsatile type lavage with the knee under a pressure tourniquet. This step allows for optimal cement penetration and interlocking to the bony prepared surfaces and also removes bone debris that can serve as third body particles that increase polyethylene wear after surgery. The surfaces should be properly dried prior to cementation and appropriate exposure of all bony surfaces achieved. All of the surfaces should be pressurized for optimal cement penetration. Emphasizing the importance of effective cementation of the posterior femoral condylar surfaces is also recommended since it can have a significant effect on the longevity of the fixation of the femoral implant. A further point worth noting is that if holding the knee out in full extension while cement is hardening is used to compress components down and possibly improve cement intrusion.

- Care should be taken to completely remove all excess cement that protrudes from the implant bone interface. Any remnants of overhanging cement can impinge on surrounding soft tissue or can provide a source of debris that can serve as a generator of third body wear and may contribute to the demise of the fixation earlier than expected.

- After cement polymerization and removal of all cement excess, thoroughly irrigate the joint. If a tourniquet is used, hemostasis is achieved after its deflation. Close soft tissue in the normal layered fashion.

AESCULAP® e.motion® Pro SYSTEM

SETS

Item No.	Description	Container recom-mended	Lid	Height of tray incl. lid
NS760	**IQ e.motion® Pro Instrumentation**			
Consisting of:				
NS701	IQ e.motion® Set General Instruments	JK444	JK489	119 mm
NS702	IQ e.motion® Set Tibia-Instruments	JK444	JK489	119 mm
NS703	IQ e.motion® Set Femur Preparation	JK442	JK489	89 mm
NS856 Insert for 856	IQ e.motion® Pro Set Tibia Preparation + UC Trials	JK444	JK489	119 mm
NS706	IQ e.motion® UC Set Femur Trial Implants	JK444	JK489	119 mm

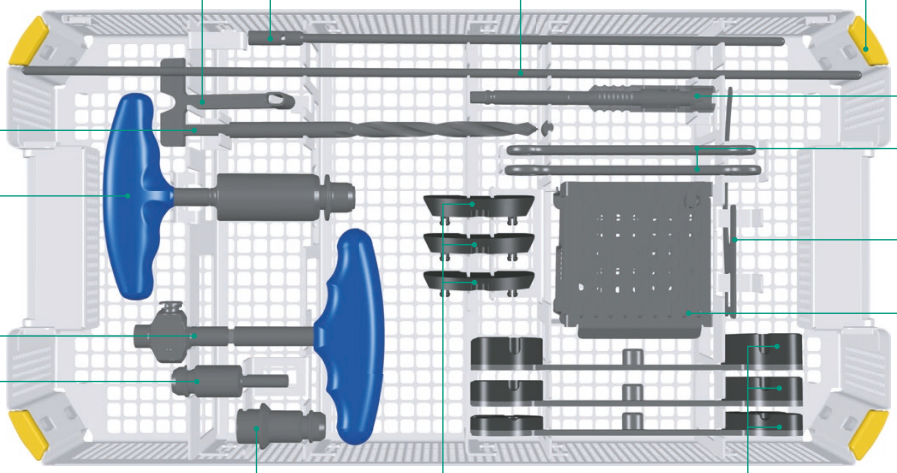
Item No.	Description	Container recom-mended	Lid	Height of tray incl. lid
	Additional sets needed for e.motion® PS Pro			
Consisting of:				
NS770	IQ e.motion® PS Pro Set Femur Trial Implants + Preparation	JK444	JK489	119 mm
NS780	IQ e.motion® PS Pro Set Trial Meniscal Components	JK441	JK489	69 mm

OPTIONAL SETS

Item No.	Description	Container recom-mended	Lid	Height of tray incl. lid
NS858	IQ e.motion® Set Tibia Extension Set	JK442	JK489	89 mm
NS768	IQ e.motion® PS Pro Set Femur Trial Implants standard sizes	JK444	JK489	119 mm
	e.motion® Pro Standard/Pro Tibia Augments			
NS910	IQ e.motion® Set Tibia-Augments	JK342	JK389	89 mm
	e.motion® Pro Femur Trial Implant, Set is identical to NS706, but for F4–F6 in "Narrow" version.			
NS908	IQ e.motion® FP/UC Set Femur trials incl. narrow sizes (like NS706, but trials 4, 5, 6 in narrow version)	JK444	JK489	119 mm
	Patella			
NS709	IQ Set Patella Instruments	JK444	JK489	119 mm
	Navigation			
NP138	IQ Set Navigation Instruments	JK444	JK489	119 mm

AESCULAP® e.motion® Pro SYSTEM

NS701 | GENERAL INSTRUMENTS



NE456R
Check plate for cutting guides

NE331R
Target rod with sleeve

NP471R
Target rod, long

NS711R
Tray general instruments

NQ658R
Torque wrench adapter SW 3.5

NP731R-NP732R
Stem tightening key
Ø 10+12 mm
Ø 14+16 mm

NS850R
Cutting depth control plate

NP580R
4 x NP582R
Headless Pins 3.2 x 38 mm
6 x NP583R
Headless Pins 3.2 x 63 mm
4 x NP585R
Headless Pins 3.2 x 30 mm
4 x NP586R
Headless Pins 3.2 x 50 mm
1 x NP613R
Pin Driver

NE443R
IM-Drill, Ø 9 x 200 mm

NE160R
Torque wrench 10 Nm with T-handle

NE198R
T-Handle navigated

GB414R
Chuck adapter

TF061
Graphic Template for NS701

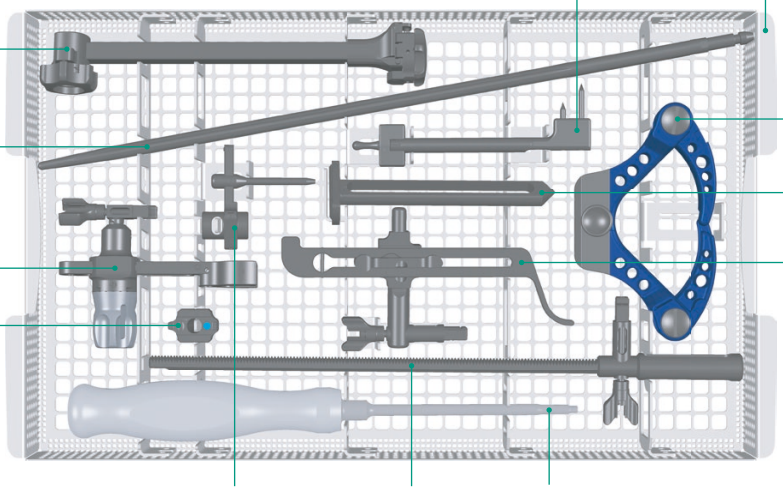
JA455R
Lid for tray

GB413R
Acculan II hexagonal Chuck

NS497-NS499
Complementary spacer
7.0 mm
8.5 mm
10.0 mm

NS852R-NS854R
Spacer
10+12 mm
14+16 mm
18+20 mm

NS702 | TIBIA-INSTRUMENTS



NS343R
Tibia alignment proximal fixation

NS712R
Tray tibia instruments

NS345R
Tibia alignment bimalleolar clamp

NS344R
Tibia alignment bimalleolar clamp support

NS347R
Tibia stylus

NS342R
Tibia alignment system handle

NS331R
IM alignment rod
Ø 8 mm

NS332R
IM alignment system

NS843R
Tibia IM orientation sleeve 0°

TF062
Graphic Template for NS702

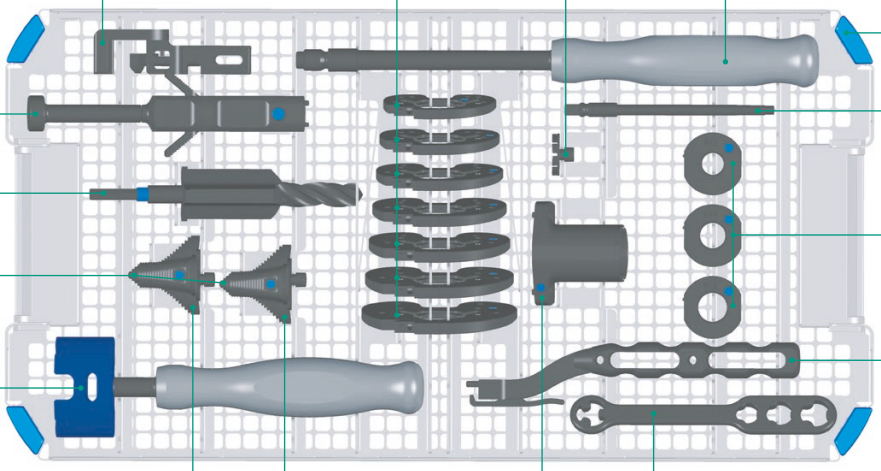
NS847R
Tibia IM stylus for orientation sleeve

NS341R
Holding rod for tibial cutting guide

NS423R
Screw driver SW 3.5 (optional)

The lower part of the tray is empty and can be used for optional instruments. In case the mini stem (NB100K) is used, the torque wrench (NE184RM) with adapter (NE185R) can be stored here. It is not necessary to open the extension stem tray NS858.

NS856 | TIBIA PREPARATION



NS570R (b)
Tibia Counter torque

NS732R–NS738R
Tibia preparation plateau T2–T8

NS739R
Rotation peg

NS570R (a)
Tibia Counter torque

NS857R
Tray tibia preparation

NS520R
Impactor/extractor handle

NP450R
Adapter SW 4.5

NS790R
Primary drill Ø 14 mm

NS727R–NS729R
Drill sleeve for extension stem
Ø 12 mm, 14 mm, 16 mm

NS363R
Probe obturator
Ø 12 mm

NQ378R
Holder for preparation plateau

NS425
Impactor

NS792R
Tibia broach R

NS791R
Tibia broach L

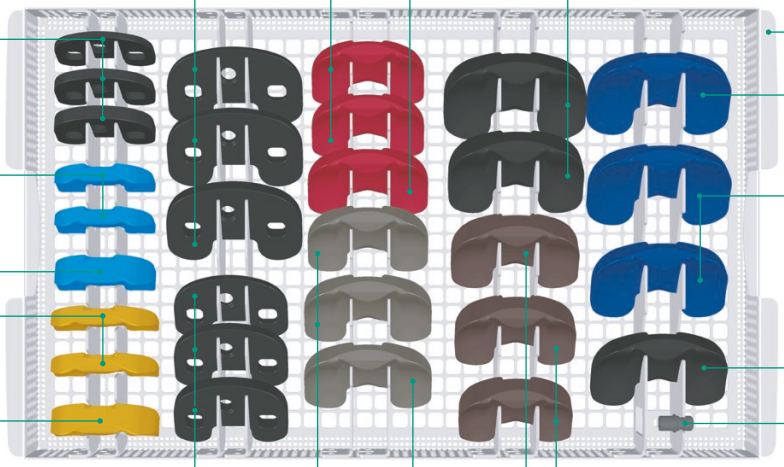
NS793R
Center sleeve F/ broach

NS378R
Obturator tightening key

TF078
Graphic template

JA455R
Lid for Tray

UC TRIAL MENISCAL COMPONENTS



NS695–NS697
PS/UC complement plate sz 3 (L) – 4 mm, 6 mm, 8 mm

NS624
UC trial meniscal comp.
F4 – 6 mm

NS654
UC trial meniscal comp.
F4 – 12 mm

NS627
UC trial meniscal comp.
F7 – 6 mm

NS715R
Tray UC trial meniscal components

NS675–NS677
PS/UC complement plate sz 1 (S) – 4 mm, 6 mm, 8 mm

NS658
UC trial meniscal comp.
F8 – 12 mm

NS622
UC trial meniscal comp.
F2 – 6 mm

NS628
UC trial meniscal comp.
F8 – 6 mm

NS652
UC trial meniscal comp.
F2 – 12 mm

NS657
UC trial meniscal comp.
F7 – 12 mm

NS623
UC trial meniscal comp.
F3 – 6 mm

NS540P
Trial plug UC/PS

NS653
UC trial meniscal comp.
F3 – 12 mm

NS685–NS687
PS/UC complement plate sz 2 (M) – 4 mm, 6 mm, 8 mm

NS625
UC trial meniscal comp.
F5 – 6 mm

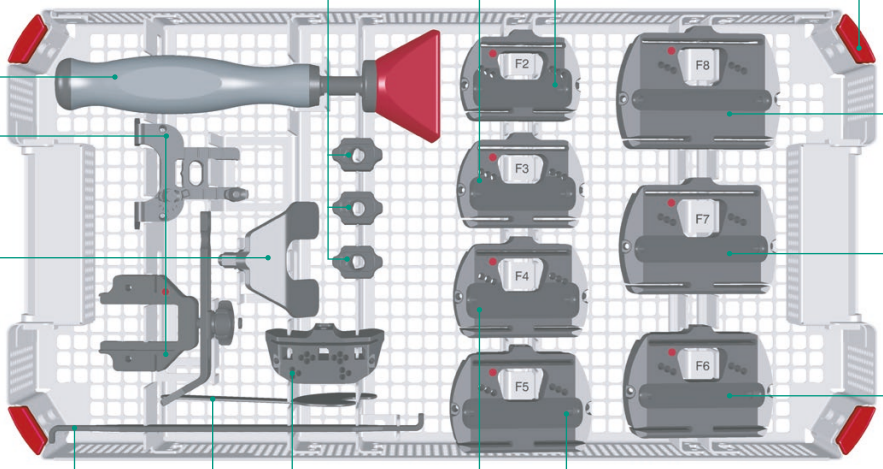
NS655
UC trial meniscal comp.
F5 – 12 mm

NS656
UC trial meniscal comp.
F6 – 12 mm

NS626
UC trial meniscal comp.
F6 – 6 mm

AESCULAP® e.motion® Pro SYSTEM

NS703 | FEMUR PREPARATION



NS335R–NS337R
Angle insert for adjustment device 5° | 6° | 7°

NS583R
4-in-1 femur cutting guide F3

NS582R
4-in-1 femur cutting guide F2

NS713R
Tray femur preparation

NS424
Impactor

NS580R
Sizing/alignment instrument

NS834R
Distal femur contact plate

NS588R
4-in-1 femur cutting guide F8

NS587R
4-in-1 femur cutting guide F7

NS586R
4-in-1 femur cutting guide F6

TF063
Graphic template for NS703

JA455R
Lid for tray

NS581R
ML femoral size gauge

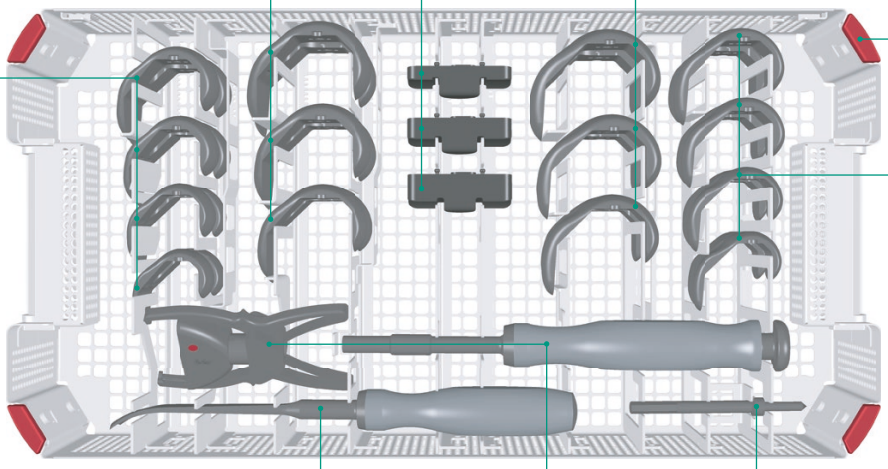
NS334R
Tibio-distal cutting guide

NS585R
4-in-1 femur cutting guide F5

NQ377R
Protection plate

NS584R
4-in-1 femur cutting guide F4

NS706 | FEMUR TRIAL IMPLANTS W/O NARROW FEMUR TRIALS



NS601–NS603
Insert for femur F2/F3 for NS600R, F4/F5/F6 for NS600R, F7/F8 for NS600R

NS706K–NS708K
Femoral trial implant F6 L, F7 L, F8 L

NE756K–NE758K
Femoral trial implant F6 R, F7 R, F8 R

NE702K–NE705K
Femoral trial implant F2 L, F3 L, F4 L, F5 L

NS716R
Tray trial components femur

NE752K–NE755K
Femoral trial implant F2 R, F3 R, F4 R, F5 R

TF066
Graphic template for NS716R

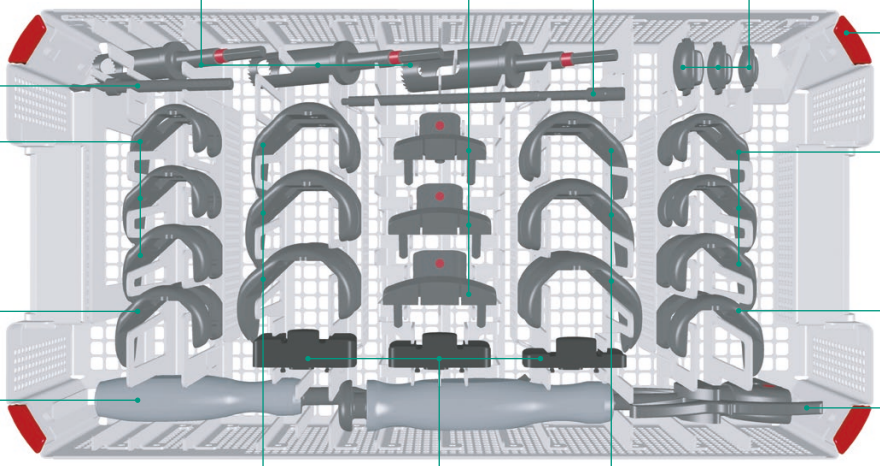
JA455R
Lid for tray

NS366R
Chisel for posterior condyles

NS600R
Implant holding/insertion instrument

NE458R
Drill Ø 5 x 25 mm

NS770 | PS PRO FEMUR PREPARATION (F4-F6 IN NARROW)



NS794R–NS796R
PS Pro femur box drill
S 19 mm, M 22 mm, L 24 mm

NS797R–NS799R
PS Pro femur box drill guide S, M, L

NS761R
PS Pro trial cam insert holder

NS763R, NS765R, NS767R
IQ e.motion® PS Pro cam trial f. Femur S, M, L

NE458R
Drill
Ø 5 x 25 mm

NS740K–NS742K
Femoral trial implant
F2 L, F3 L, F4N L

NS744K
Femoral trial implant
F5N L

NS366R
Chisel for posterior condyles

NS771R
Tray PS Pro femur preparation

NS750K–NS752K
Femoral trial implant
F2 R, F3 R, F4N R

NS754K
Femoral trial implant
F5N R

NS600R
IQ implant holding/ insertion instrument

NS746K, NS748K, NS749K
Femoral trial implant
F6N L, F7 L, F8 L

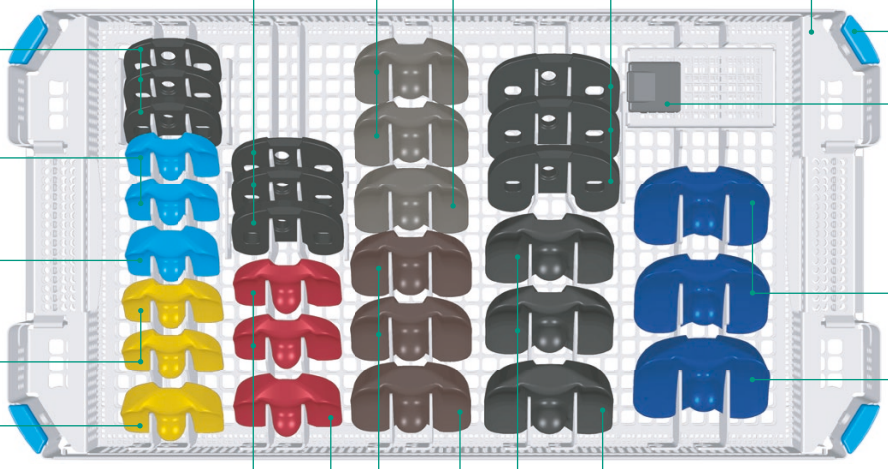
NS601–NS603
Insert F/fem.
F2/F3 for NS600R,
F4/F5/F6 for NS600R,
F7/F8 for NS600R

NS756K, NS758K, NS759K
Femoral trial implant
F6N R, F7 R, F8 R

TF076
Graphic template for NS771R

JA455R
Siebkorbdeckel

NS780 | PS PRO MENISCAL COMPONENTS



NS685–NS687
Complement plate sz M
4 mm, 6 mm, 8 mm

NS775
PS Pro trial meniscal comp.
F5 6 mm

NS785
PS Pro trial meniscal comp.
F5 12 mm

NS695–NS697
Complement plate sz L
4 mm, 6 mm, 8 mm

NS675–NS677
Complement plate sz S
4 mm, 6 mm, 8 mm

NS772
PS Pro trial meniscal comp. F2 6 mm

NS782
PS Pro trial meniscal comp. F2 12 mm

NS773
PS Pro trial meniscal comp. F3 6 mm

NS783
PS Pro trial meniscal comp. F3 12 mm

NS781R
Tray PS Pro meniscal components

NS678R
Tray meniscal components base

NS540P
Trial rotation peg

NS778
PS Pro trial meniscal comp. F8 6 mm

NS788
PS Pro trial meniscal comp. F8 12 mm

NS774
PS Pro trial meniscal comp.
F4 6 mm

NS784
PS Pro trial meniscal comp.
F4 12 mm

NS776
PS Pro trial meniscal comp.
F6 6 mm

NS786
PS Pro trial meniscal comp.
F6 12 mm

NS777
PS Pro trial meniscal comp.
F7 6 mm

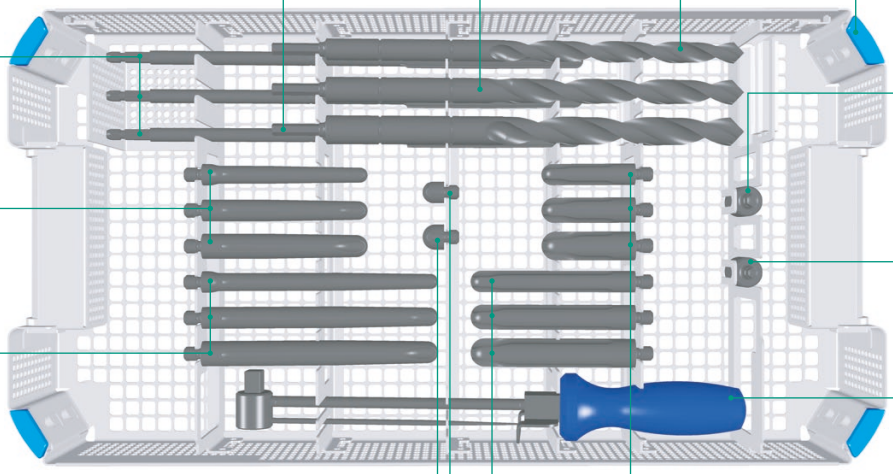
NS787
PS Pro trial meniscal comp.
F7 12 mm

TF077
Graphic template for NS781R

JA455R
Lid for tray

AESCULAP® e.motion® Pro SYSTEM

NS858 | TIBIA-EXTENSION STEMS



NS380R
Drill for cemented stem Ø 16 mm

NS377R
Drill for cemented stem Ø 14 mm

NS376R
Drill for cemented stem Ø 12 mm

NS859R
Tray tibia extension stem

NS391R–NS393R
Reamer for cementless stem
Ø 10 mm, 12 mm, 14 mm

NE185R
Adapter (SW6) for extension stems
Ø 12 and 14 mm

NS394T–NS396T
Trial stem short (92 mm) cementless
Ø 10 mm, 12 mm, 14 mm

NS835R
Adapter (SW5) for extension stems
Ø 10 mm

NS397T–NS399T
Trial stem long (132 mm) cementless
Ø 10 mm, 12 mm, 14 mm

NE184RM
Torque Wrench 20/27 Nm

TF079
Graphic template for NS859R (NS858)
JA455R
Lid for tray

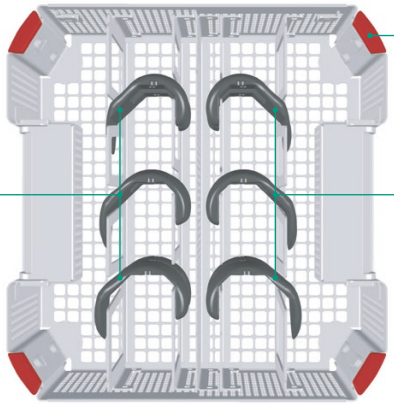
NE100T
Trial stem mini
Ø 14 mm L 12 mm

NE090T
Trial stem mini
Ø 12 mm L 12 mm

NS387T–NS389T
Trial stem long (92 mm) cemented
Ø 12 mm, 14 mm, 16 mm

NS384T–NS386T
Trial stem short (52 mm) cemented
Ø 12 mm, 14 mm, 16 mm

NS768 | PS PRO TRIAL FEMUR STANDARD SIZES



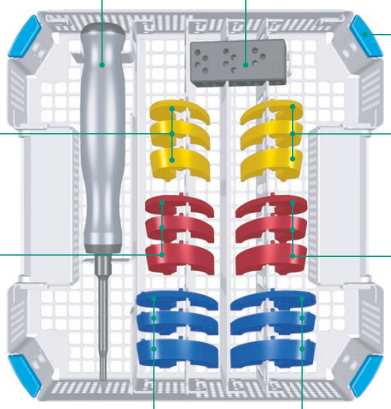
NS769R
Tray PS Pro standard sizes

NS743K, NS745K, NS747K
Femoral trial implant
F4 L, F5 L, F6 L

NS753K, NS755K, NS757K
Femoral trial implant
F4 R, F5 R, F6 R

TF075
Graphic template for NS769R
JA415R
Lid for tray

NS910 | TIBIA-AUGMENTS



NS410R
IQ Screw Driver SW 3.0 with silicone handle

NQ1077R
IQ Move Block 4 mm, 8 mm, 12 mm

NS911R
Tray Tibia Augments

NS923, NS925, NS927
Trial Tibia-Augment T2-T3 RL-LM 4 mm, 8 mm, 12 mm

NS922, NS924, NS926
Trial Tibia-Augment T2-T3 RM-LL 4 mm, 8 mm, 12 mm

NS933, NS935, NS937
Trial Tibia-Augment T4-T6 RL-LM 4 mm, 8 mm, 12 mm

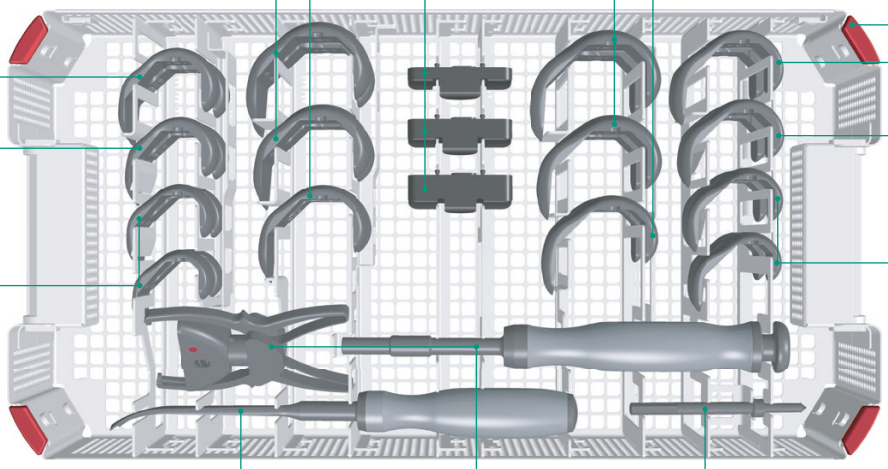
NS932, NS934, NS936
Trial Tibia-Augment T4-T6 RM-LL 4 mm, 8 mm, 12 mm

NS943, NS945, NS947
Trial Tibia-Augment T7-T8 RL-LM 4 mm, 8 mm, 12 mm

NS942, NS944, NS946
Trial Tibia-Augment T7-T8 RM-LL 4 mm, 8 mm, 12 mm

TF211
Graphic template for NS911R
JA415R
Lid for tray

NS908 | FEMUR TRIAL IMPLANTS W/ NARROW FEMUR TRIALS



NS601-NS603
Insert for femur F2 / F3 for NS600R, F4 / F5 / F6 for NS600R, F7 / F8 for NS600R

NE707K-NS708K
Femoral trial implant F7 L, F8 L

NS985K
Femoral trial implant F6N L

NE757K-NE758K
Femoral trial implant F7 R, F8 R

NS986K
Femoral trial implant F6N R

NS909R
Tray trial components femur

NS983K
Femoral trial implant F5N L

NS984K
Femoral trial implant F5N R

NS981K
Femoral trial implant F4N L

NS982K
Femoral trial implant F4N R

NE702K-NE703K
Femoral trial implant F2 L, F3 L

NE752K-NE753K
Femoral trial implant F2 R, F3 R

NS366R
Chisel for posterior condyles

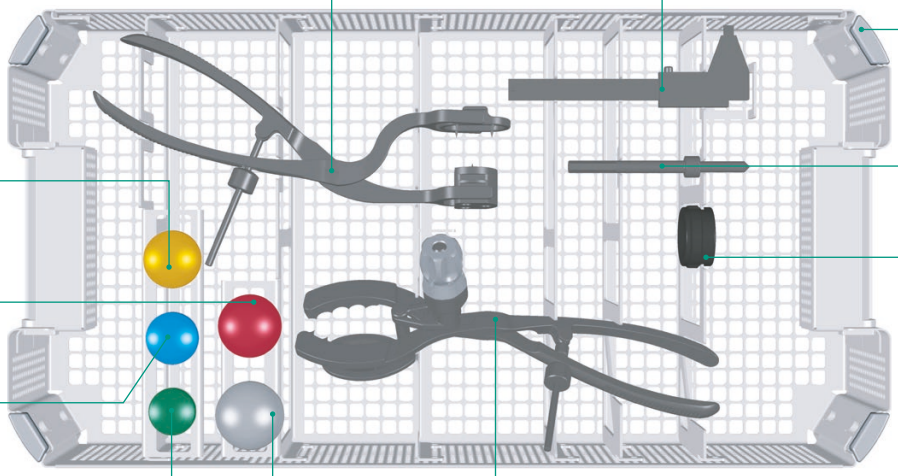
NS600R
Implant holding / insertion instrument

NE458R
Drill Ø 5 x 25 mm

TF241
Graphic template for NS908
JA455R
Lid for tray

AESCULAP® e.motion® Pro SYSTEM

NS709 | PATELLA PREPARATION



NS841R
Patella drilling and impacting clamp

AA847R
Caliper

NS719R
Tray patella preparation

NQ449R
Drill with stop
Ø 6 x 28 mm

NS842
Insert for NS841R

NQ283
Trial patella 3 pegs
P3 Ø 32 x 9 mm

NQ284
Trial patella 3 pegs
P4 Ø 35 x 10 mm

NQ282
Trial patella 3 pegs
P2 Ø 29 x 8 mm

TF069
Graphic template for NS709

JA455R
Lid for tray

NQ281
Trial patella 3 pegs
P1 Ø 26 x 7 mm

NQ285
Trial patella 3 pegs
P5 Ø 38 x 11 mm

NS840R
Patella resection clamp

NOTES

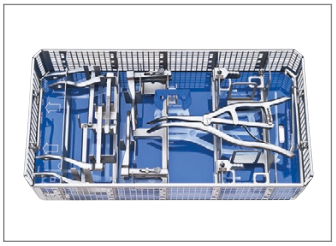
AESCULAP® e.motion® Pro SYSTEM

15 | OPTIONAL INSTRUMENTS

GENERAL

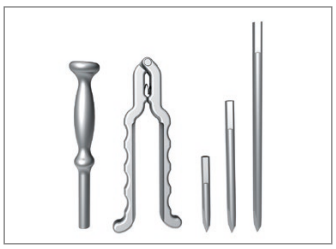
NP609R Gap distractor for NP604R

NP604R Femur-tibia gap measuring gauge



NM640 Force controlled spreader set

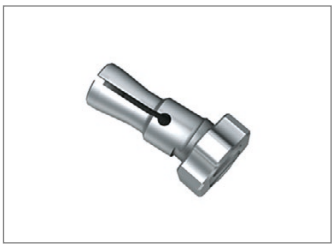
NE150R Leg positioner for TKA
NE153R Fixation Frame



Pin set (NP742R, NP743R, NP748R, NP749R, NP750R)

FEMUR

NS578R Femur orientation sleeve 8°

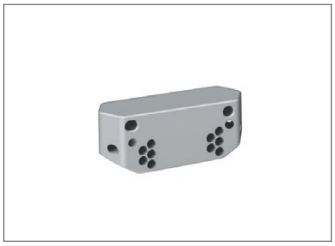


NS579R Femur orientation sleeve 9°

TIBIA

NS406R medialised cutting guide left

NS407R medialised cutting guide right



NS861R FGT tibia correction bloc 2° var/val

NS879R IQ FGT counter guide for NS861R

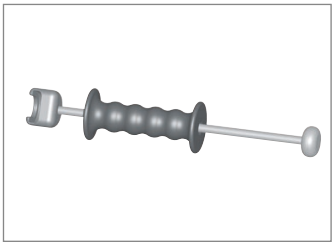
NS863R FGT tibia EM alignment system (Assembly instructions in 047302)

NE425R tibia stylus

NS844R Tibia-IM-orientation sleeve 3°

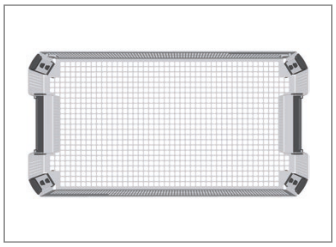
NS845R Tibia IM orientation sleeve 5°

NS846R Tibia IM orientation sleeve 7°

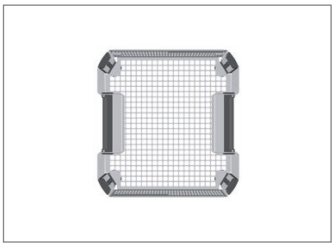


NP684R Slap hammer

STORAGE OPTIONAL INSTRUMENTS



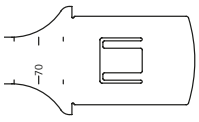
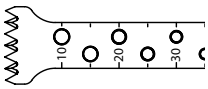
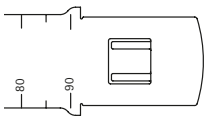
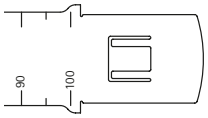
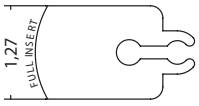
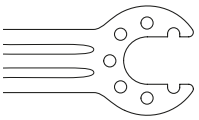
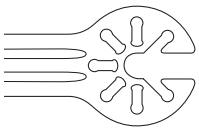
NQ1429R tray optional instruments large, lid JA455R



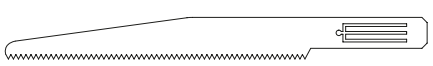
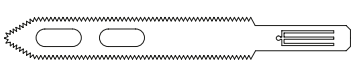
NE1029R tray optional instruments small, lid JA415R

NOTE
For the optional trays the following containers and lids are recommended:
NQ1429R: Container JK442, Lid JK489
NE1029R: Container JK342, Lid JK389

AESCULAP® e.motion® Pro SYSTEM

System	Item No.	Width	Thickness	Saw blades 1 steril 2
AESCULAP® Acculan 3 Ti, Acculan 4 Length 75 mm	GE231SU	9 mm	1.27 mm	
AESCULAP® Acculan 3 Ti, Acculan 4 Length 90 mm	GE233SU	13 mm	1.27 mm	
	GE236SU	13 mm	1.27 mm	
	GE241SU	19 mm	1.27 mm	
	GE246SU	23 mm	1.27 mm	
AESCULAP® Acculan 3 Ti, Acculan 4 Length 100 mm	GE249SU	19 mm	1.27 mm	
Stryker System 4-7 Length 90 mm	GE330SU	13 mm	1.27 mm	
	GE331SU	19 mm	1.27 mm	
	GE332SU	25 mm	1.27 mm	
Synthes Trauma Recon System Battery Power Line Battery Power Line II Length 90 mm	GE323SU	13 mm	1.27 mm	
Zimmer-Biomet Universal Length 90 mm	GE326SU	25 mm	1.27 mm	
Conmed Power Pro Mpower Mpower 2, Hall 50 Length 90 mm	GE327SU	13 mm	1.27 mm	
	GE329SU	25 mm	1.27 mm	

A complete overview of all saw blades with Aesculap® couplings are listed in our Burrs & Blades catalog: O17599.

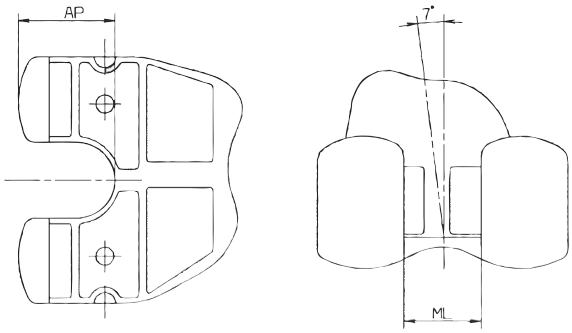
System	Saw blades for reciprocating saws 75/10/1.0/1.2 mm	Saw blade for reciprocating saws 75/12/1.0/1.2 mm
Acculan 3 Ti, Acculan 4	 GC769R	 GC771R

17 | IMPLANT DIMENSIONS
UC PRO FEMUR

AP-/ML-Dimensions [mm] of the e.motion® UC Pro/FP femoral implants for necessary application of intra medullary nail

Measurements in mm

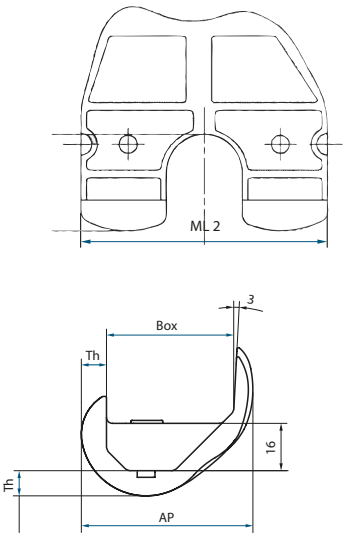
Size	AP	ML
F2	20	18
F3	22	19
F4	24	20
F5	27	21
F6	29	22
F7	31	23
F8	33	25



FEMUR COMPONENTS

Measurements in mm

Size	ML 2	AP	Box	Th
F2	56	50	37	7
F3	60	54	40	7
F4	64	58	43	8.5
F4 N	60	58	43	8.5
F5	68	62	46	8.5
F5 N	64	62	46	8.5
F6	72	66	49	8.5
F6 N	68	66	49	8.5
F7	76	70	52	10
F8	80	74	55	10



AESCULAP® e.motion® Pro SYSTEM

17 | IMPLANT DIMENSIONS

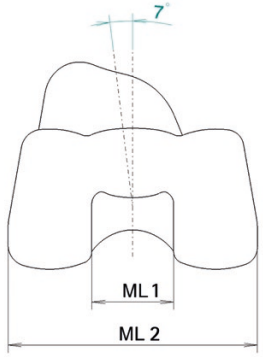
PS PRO FEMUR

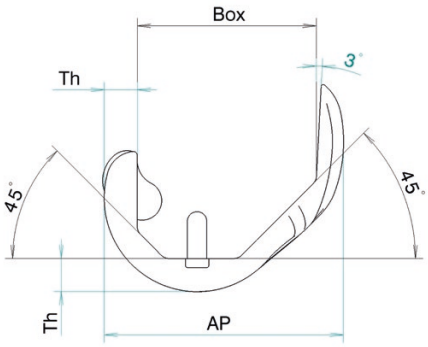
Femur Components

Most important dimensions [mm] of the e.motion® PS Pro femoral implants.

Measurements in mm

Size	ML 2	AP	Box	Th
F2	56	50	37	7
F3	60	54	40	7
F4N	60	58	43	8.5
F4	64	58	43	8.5
F5N	64	62	46	8.5
F5	68	62	46	8.5
F6N	68	65	49	8.5
F6	72	66	49	8.5
F7	76	70	52	10
F8	80	74	55	10

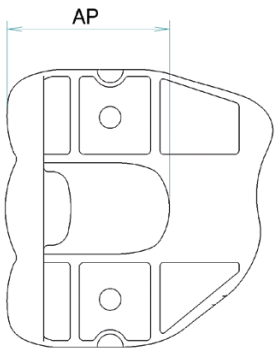


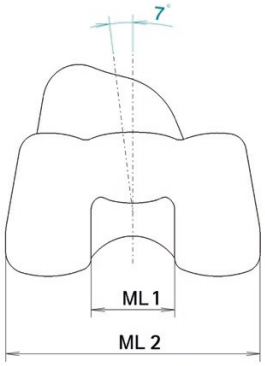


AP-/ML-Dimensions [mm] of the e.motion® PS Pro femoral implants for necessary application of intra medullary nails.

Measurements in mm

Size	AP	ML 1
F2	30	18
F3	33	19
F4N	36	20
F4	36	20
F5N	38	21
F5	38	21
F6N	41	22
F6	41	22
F7	42	23
F8	45	24





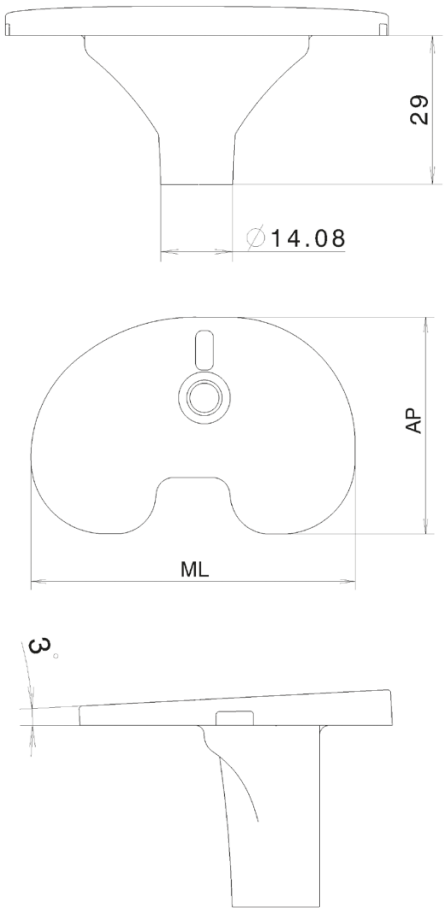
17 | IMPLANT DIMENSIONS
UC/PS TIBIA

Tibia Components

Most important dimensions [mm] of the e.motion® UC Pro tibia implants.

Measurements in mm

Size	ML	AP	AP/ML
T2	63	41	0.7
T3	67	44	0.7
T4	71	47	0.7
T5	75	50	0.7
T6	79	53	0.7
T7	83	56	0.7
T8	87	59	0.7

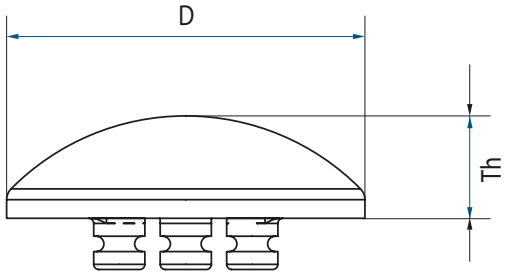


Patella Components

Most important dimensions [mm] of the patella implants.

Measurements in mm

Size	D	Th
1	26	7
2	29	8
3	32	9
4	35	10
5	38	11



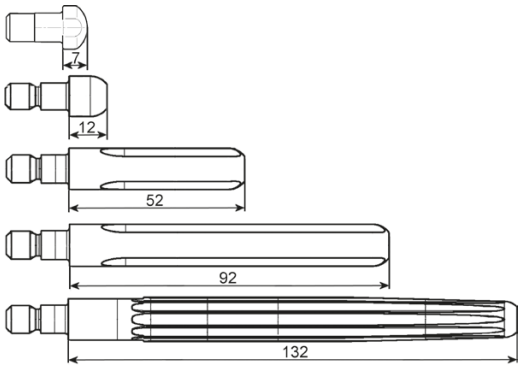
AESCULAP® e.motion® Pro SYSTEM

17 | IMPLANT DIMENSIONS

EXTENSION STEM LENGTHS

Measurements in mm

	T0–T5
Tibia keel length	28
Tibia keel + Obturator	35
Tibia keel + Stem 12 mm	40
Tibia keel + Stem 52 mm	80
Tibia keel + Stem 92 mm	120
Tibia keel + Stem 132 mm	160



The overall length of the tibia plateau with the respective extension stem is given by the tibia keel length 28 mm and the obturator 7 mm or the stem length 12 mm, 52 mm, 92 mm or 132 mm.

NOTE

Obturator screws and 12 mm extension stems are available in 14 mm diameter. All other extension stems are available in diameters 10, 12 and 14 mm.

IMPLANTS

Item No.	Description
LSET-K0075	e.motion® UC/FP Femur R
LSET-K0076	e.motion® UC/FP Femur L
LSET-K0021	e.motion® UC/FP Femur R cementless
LSET-K0026	e.motion® UC/FP Femur L cementless
LSET-K0150	e.motion® PS Pro Femur L
LSET-K0151	e.motion® PS Pro Femur R
LSET-K0161	e.motion® UC Pro Tibia L
LSET-K0162	e.motion® UC Pro Tibia R
LSET-K0155	e.motion® UC Pro Meniscuscomp. L
LSET-K0156	e.motion® UC Pro Meniscuscomp. R
LSET-K0163	e.motion® PS Pro Meniscuscomp. L
LSET-K0164	e.motion® PS Pro Meniscuscomp. R
LSET-K0131	AESCULAP® Tibia stems
LSET-K0210	e.motion® Pro Tibia Augments
LSET-K0176	AS e.motion® PS Pro Femur + Tibia L
LSET-K0177	AS e.motion® PS Pro Femur + Tibia R
LSET-K0178	AS e.motion® UC Pro Femur + Tibia L
LSET-K0179	AS e.motion® UC Pro Femur + Tibia R
LSET-K0211	AS e.motion® Pro Tib. Aug.
LSET-K0132	AS AESCULAP® Tibia Stems
LSET-K0041	e.motion® Patella

AESCULAP® e.motion® Pro SYSTEM

INSTRUMENTS

Item No.	Description
LSET-K0154	IQ e.motion® UC Pro Basic
LSET-K0148	IQ e.motion® PS Pro Extension to K0154
LSET-K0198	IQ e.motion® FGT
LSET-K0149	IQ e.motion® Pro Tibia Stem preparation
LSET-K0209	IQ e.motion® Tibia Augment preparation

OPTIONAL INSTRUMENTS

Item No.	Description
LSET-K0165	IQ e.motion® UC Pro Tibia (only tibia preparation)
LSET-K0051	IQ Navigation
LSET-K0130	IQ Patella

Aesculap Reset® INSTRUMENTS

Item No.	Description
LSET-K0199LT	Aesculap Reset® IQ e.motion® PS Pro navigated
LSET-K0206	Aesculap Reset® IQ e.motion® UC Pro
LSET-NS500LT	Aesculap Reset® IQ e.motion® Pro Basic
LSET-NS501LT	Aesculap Reset® IQ e.motion® Pro manual
LSET-NS509LT	Aesculap Reset® IQ e.motion® Pro Tibia-Prep.
LSET-NS912LT	Aesculap Reset® IQ e.motion® PS Pro Fem-Prep. F2
LSET-NS913LT	Aesculap Reset® IQ e.motion® PS Pro Fem-Prep. F3
LSET-NS914LT	Aesculap Reset® IQ e.motion® PS Pro Fem-Prep. F4
LSET-NS915LT	Aesculap Reset® IQ e.motion® PS Pro Fem-Prep. F5
LSET-NS916LT	Aesculap Reset® IQ e.motion® PS Pro Fem-Prep. F6
LSET-NS917LT	Aesculap Reset® IQ e.motion® PS Pro Fem-Prep. F7
LSET-NS918LT	Aesculap Reset® IQ e.motion® PS Pro Fem-Prep. F8

X-RAY TEMPLATES

Item No.	Description
NS416	PS Pro Femur – PS Pro/UC Pro Tibia – Standard Stems 1.10:1
NS417	PS Pro Femur – PS Pro/UC Pro Tibia – Standard Stems 1.15:1
NE398	FP/UC Femur, Patella 1.10:1
NE399	FP/UC Femur Patella 1.15:1

e.motion® Pro Implant Matrix – *Femoral parts*

Patella

Types:	F2–F8
P1	NX041
P2	NX042
P3	NX043
P4	NX044
P5	NX045

Femur FP/UC cemented

Types:	F2	F3	F4	F4N	F5	F5N	F6	F6N	F7	F8
Left	NO502K	NO503K	NO504K	NO817K	NO505K	NO818K	NO506K	NO819K	NO507K	NO508K
Right	NO602K	NO603K	NO604K	NO917K	NO605K	NO918K	NO606K	NO919K	NO607K	NO608K

Femur FP/UC cementless

Types:	F2	F3	F4	F4N	F5	F5N	F6	F6N	F7	F8
Left	NO582K	NO583K	NO584K	NO837K	NO585K	NO838K	NO586K	NO839K	NO587K	NO588K
Right	NO682K	NO683K	NO684K	NO937K	NO685K	NO938K	NO686K	NO939K	NO687K	NO688K

Femur PS Pro cemented

Types:	F2	F3	F4N	F4	F5N	F5	F6N	F6	F7	F8
Left	NX700K	NX701K	NX702K	NX703K	NX704K	NX705K	NX706K	NX707K	NX708K	NX709K
Right	NX750K	NX751K	NX752K	NX753K	NX754K	NX755K	NX756K	NX757K	NX758K	NX759K

AESCULAP® e.motion® Pro SYSTEM

e.motion® Pro Implant Matrix – *Tibial implants*

Tibia UC Pro/PS Pro cemented

Types:	T2	T3	T4	T5	T6	T7	T8
Links	NX732K	NX733K	NX734K	NX735K	NX736K	NX737K	NX738K
Rechts	NX782K	NX783K	NX784K	NX785K	NX786K	NX787K	NX788K

Tibia-Obturator for UC Pro/PS Pro

Types:	Ø 14 mm
Standard	NN264K
AS	NN264Z

Tibia short stem cementless

Types:	Ø 14 mm
Länge mm	12
Standard	NB100K
AS	NB100Z

PEEK Plug

Ø 14 mm
NN260P

e.motion® Pro Implant Matrix – *Tibial implants*

e.motion® UC Pro/PS Pro Tibia-Augments Medial

4 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NX602K	NX603K	NX604K	NX605K	NX606K	NX607K	NX608K

8 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX622K	NX623K	NX624K	NX625K	NX626K	NX627K	NX628K
Right	NX632K	NX633K	NX634K	NX635K	NX636K	NX637K	NX638K

12 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX662K	NX663K	NX664K	NX665K	NX666K	NX667K	NX668K
Right	NX672K	NX673K	NX674K	NX675K	NX676K	NX677K	NX678K

e.motion® UC Pro/PS Pro Tibia-Augments Lateral

4 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NX612K	NX613K	NX614K	NX615K	NX616K	NX617K	NX618K

8 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX642K	NX643K	NX644K	NX645K	NX646K	NX647K	NX648K
Right	NX652K	NX653K	NX654K	NX655K	NX656K	NX657K	NX658K

12 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX682K	NX683K	NX684K	NX685K	NX686K	NX687K	NX688K
Right	NX692K	NX693K	NX694K	NX695K	NX696K	NX697K	NX698K

AESCULAP® e.motion® Pro SYSTEM

AS e.motion® Pro Implant Matrix – *Femoral implants*

Femur FP/UC cemented

Types:	F2	F3	F4	F4N	F5	F5N	F6	F6N	F7	F8
Left	NO502Z	NO503Z	NO504Z	NO817Z	NO505Z	NO818Z	NO506Z	NO819Z	NO507Z	NO508Z
Right	NO602Z	NO603Z	NO604Z	NO917Z	NO605Z	NO918Z	NO606Z	NO919Z	NO607Z	NO608Z

AS Femur PS Pro cemented

Types:	F2	F3	F4N	F4	F5N	F5	F6N	F6	F7	F8
Left	NX700Z	NX701Z	NX702Z	NX703Z	NX704Z	NX705Z	NX706Z	NX707Z	NX708Z	NX709Z
Right	NX750Z	NX751Z	NX752Z	NX753Z	NX754Z	NX755Z	NX756Z	NX757Z	NX758Z	NX759Z

AS e.motion® Pro Implant Matrix – *Tibial implants*

Tibia UC Pro/PS Pro cemented

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX732Z	NX733Z	NX734Z	NX735Z	NX736Z	NX737Z	NX738Z
Right	NX782Z	NX783Z	NX784Z	NX785Z	NX786Z	NX787Z	NX788Z

AS e.motion® Pro Implant Matrix – *Tibial implants*

AS Rotation axis for meniscus components SW 4.5

Types:								
Height / mm	10	12	14	16	18	20	22	24
UC	NR801Z	NR811Z	NR821Z	NR831Z	NR841Z	NR851Z	--	--
PS	NB800Z	NB810Z	NB820Z	NB830Z	NB840Z	NB850Z	NB860Z	NB870Z

AS e.motion® UC Pro / PS Pro Tibia-Augments Medial

4 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NX602Z	NX603Z	NX604Z	NX605Z	NX606Z	NX607Z	NX608Z

8 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX622Z	NX623Z	NX624Z	NX625Z	NX626Z	NX627Z	NX628Z
Right	NX632Z	NX633Z	NX634Z	NX635Z	NX636Z	NX637Z	NX638Z

12 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX662Z	NX663Z	NX664Z	NX665Z	NX666Z	NX667Z	NX668Z
Right	NX672Z	NX673Z	NX674Z	NX675Z	NX676Z	NX677Z	NX678Z

AS e.motion® UC Pro / PS Pro Tibia-Augments Lateral

4 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NX612Z	NX613Z	NX614Z	NX615Z	NX616Z	NX617Z	NX618Z

8 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX642Z	NX643Z	NX644Z	NX645Z	NX646Z	NX647Z	NX648Z
Right	NX652Z	NX653Z	NX654Z	NX655Z	NX656Z	NX657Z	NX658Z

12 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NX682Z	NX683Z	NX684Z	NX685Z	NX686Z	NX687Z	NX688Z
Right	NX692Z	NX693Z	NX694Z	NX695Z	NX696Z	NX697Z	NX698Z

AESCULAP® e.motion® Pro SYSTEM

e.motion® Pro Implant Matrix – *Meniscus Components*

UC Pro – Left							
Types:	F2	F3	F4	F5	F6	F7	F8
10	NX402	NX403	NX404	NX405	NX406	NX407	NX408
12	NX412	NX413	NX414	NX415	NX416	NX417	NX418
14	NX422	NX423	NX424	NX425	NX426	NX427	NX428
16	NX432	NX433	NX434	NX435	NX436	NX437	NX438
18	NX442	NX443	NX444	NX445	NX446	NX447	NX448
20	NX452	NX453	NX454	NX455	NX456	NX457	NX458

PS Pro – Left							
F2	F3	F4	F5	F6	F7	F8
NX802	NX803	NX804	NX805	NX806	NX807	NX808
NR812	NX813	NX814	NX815	NX816	NX817	NX818
NX822	NX823	NX824	NX825	NX826	NX827	NX828
NX832	NX833	NX834	NX835	NX836	NX837	NX838
NX842	NX843	NX844	NX845	NX846	NX847	NX848
NX852	NX853	NX854	NX855	NX856	NX857	NX858

UC Pro – Right							
Types:	F2	F3	F4	F5	F6	F7	F8
10	NX502	NX503	NX504	NX505	NX506	NX507	NX508
12	NX512	NX513	NX514	NX515	NX516	NX517	NX518
14	NX522	NX523	NX524	NX525	NX526	NX527	NX528
16	NX532	NX533	NX534	NX535	NX536	NX537	NX538
18	NX542	NX543	NX544	NX545	NX546	NX547	NX548
20	NX552	NX553	NX554	NX555	NX556	NX557	NX558

PS Pro – Right							
F2	F3	F4	F5	F6	F7	F8
NX902	NX903	NX904	NX905	NX906	NX907	NX908
NX912	NX913	NX914	NX915	NX916	NX917	NX918
NX922	NX923	NX924	NX925	NX926	NX927	NX928
NX932	NX933	NX934	NX935	NX936	NX937	NX938
NX942	NX943	NX944	NX945	NX946	NX947	NX948
NX952	NX953	NX954	NX955	NX956	NX957	NX958

NOTE: All meniscus components include a rotation peg with AS coating.
The AS rotation pegs can be combined with all AS and CoCr tibia components.

Tibia Extension Stem cemented

Types:	Ø 10 mm		Ø 12 mm		Ø 14 mm	
Length mm	52	92	52	92	52	92
Standard	NX060K	NX061K	NX062K	NX064K	NX063K	NX065K
AS	NX060Z	NX061Z	NX062Z	NX064Z	NX063Z	NX065Z

Tibia Stems cementless

Types:	Ø 10 mm		Ø 12 mm		Ø 14 mm	
Length mm	92	132	92	132	92	132
Standard	NX082K	NX083K	NX084K	NX086K	NX085K	NX087K
AS	NX082Z	NX083Z	NX084Z	NX086Z	NX085Z	NX087Z

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NOTES

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