

ORTHOPAEDIC
JOINT REPLACEMENT

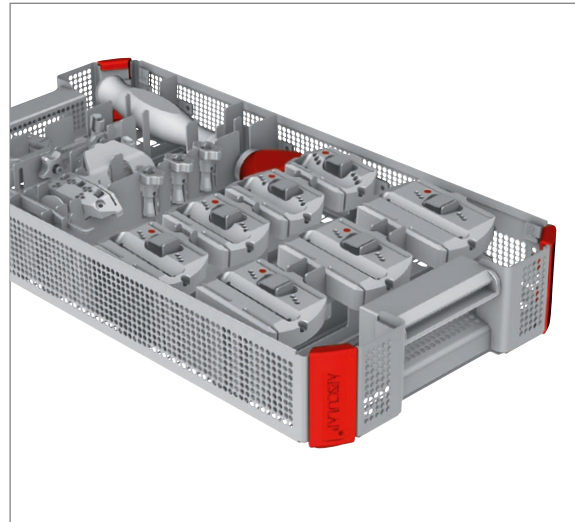
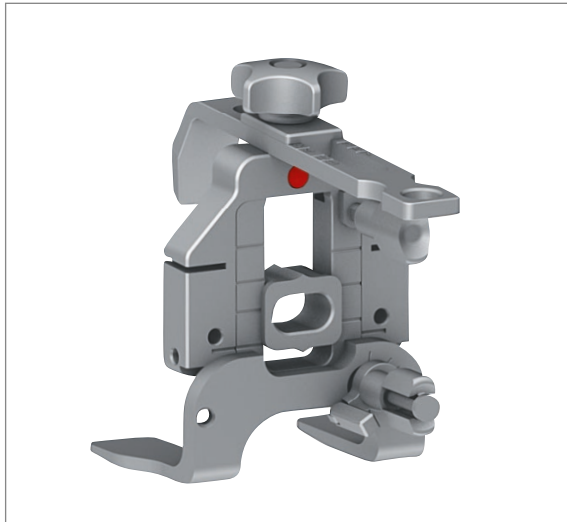
AESCULAP® e.motion® System

KNEE ARTHROPLASTY
OPERATING TECHNIQUE WITH IQ INSTRUMENTS

AESCULAP® e.motion® System

1 | INTRODUCTION





KNEE ARTHROPLASTY IQ INSTRUMENTS

The IQ e.motion® instrumentation has been designed to facilitate the workflow not only for the surgeon, but the OR team as a whole, by enhancing ergonomics and operative efficiency. 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
- color coding

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

The IQ e.motion® instruments are stored in unique validated and proven wash trays. These trays not only store the instruments in a secure and safe manner but also facilitate to a perceptible extend 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 reassembling of the sets in the CSU is needless.

NOTE

Complex instruments e.g. cutting guides or instruments that are introduced in the IM canal during the procedure as drills and reamers require a manual pre cleaning.

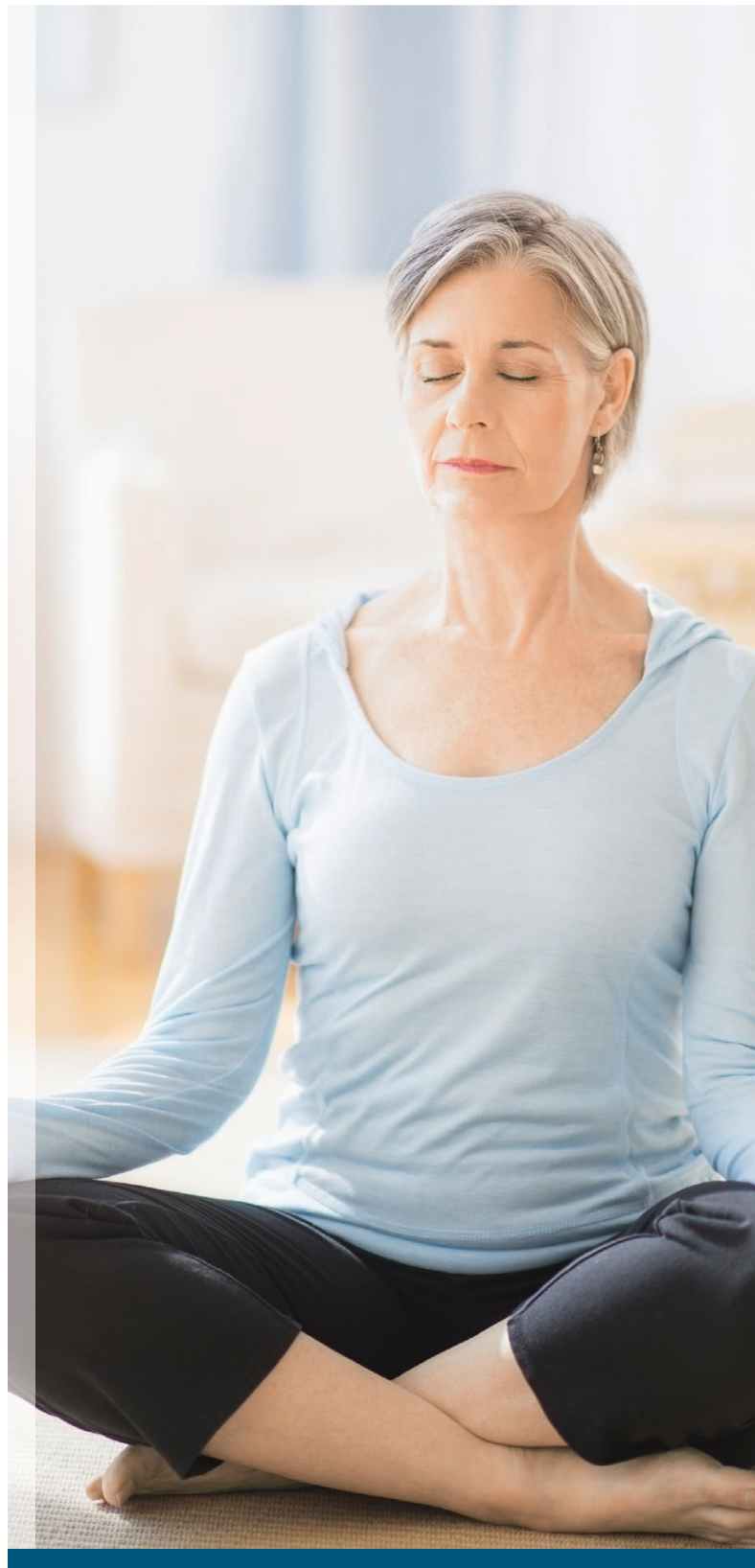
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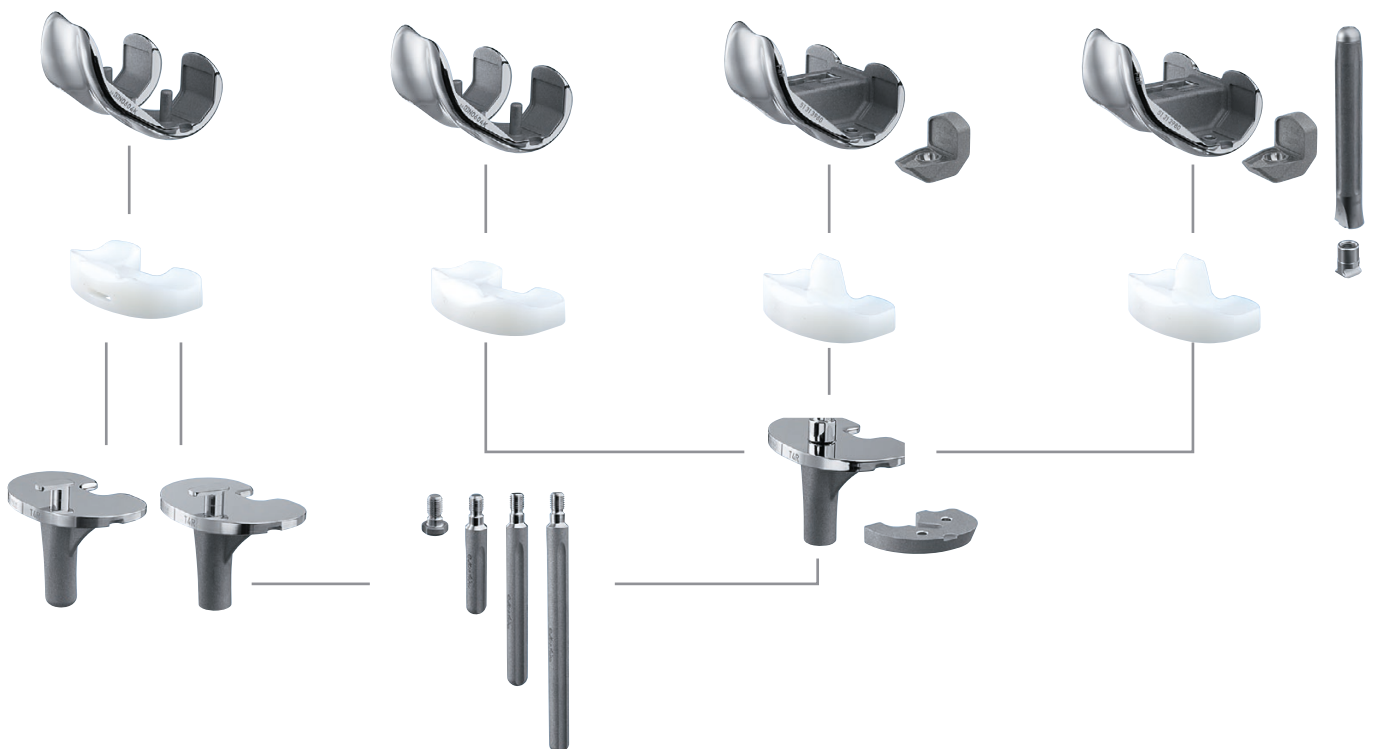
3 | INDICATIONS AND PATIENT SELECTION

e.motion® FP
cemented / Plasmapore® μ -CaP

e.motion® UC
cemented / Plasmapore® μ -CaP

e.motion® PS
cemented / Plasmapore® μ -CaP

e.motion® Revision
cemented



The e.motion® System is indicated for patients requiring primary or revision 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® implant solutions are modular from primary to revision enabling the surgeon to choose the right option per case.

Patients presenting with metal sensitivity can be preferred treated as the complete range of e.motion® products are available with the Advanced Surface technology AS.

For more information about contra-indications, please refer to the instructions for use TA012000.

NOTE

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

4 | PREOPERATIVE PLANNING



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 (NE389 for scale 1.1 and NE399 for scale 1.15).

The results of the preoperative planning should be documented in the patient's file and available during the operative procedure for reference.

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5 | APPROACH



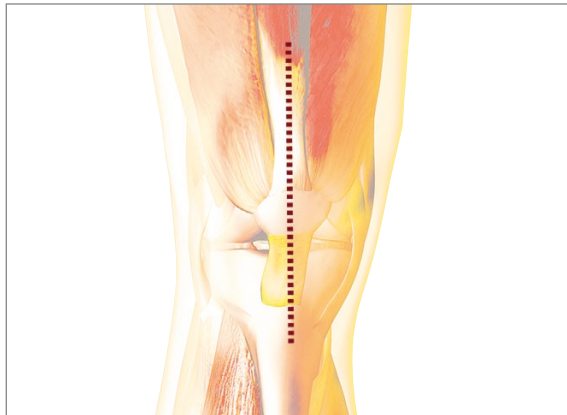
The IQ e.motion® instrumentation is designed for use with or without the use of OrthoPilot® Navigation, for both conventional and less invasive approaches to the knee.

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 tubercle. 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.

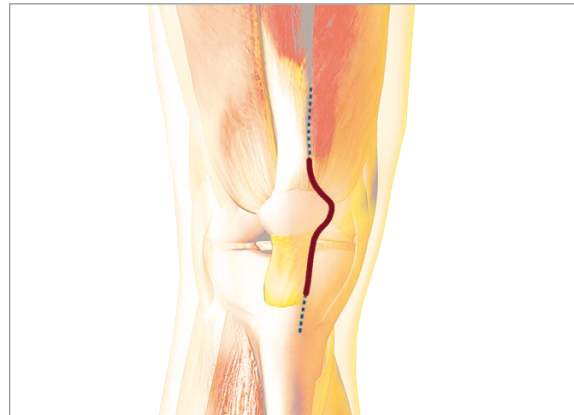
The length range of the incision is generally between 8 and 14 cm symmetrically distributed above and

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.

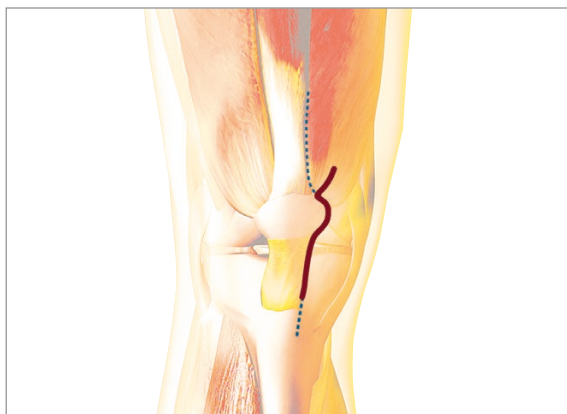
Three basic types of arthrotomies are recommended for use to carry out the intra-articular exposure: the medial parapatellar, the mid-vastus or the sub-vastus.



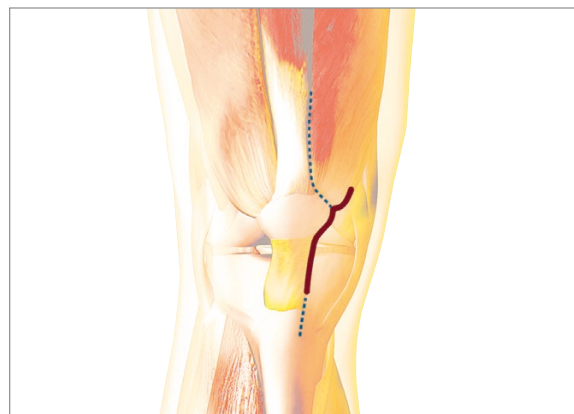
Skin incision



Medial parapatellar Arthrotomy



Mid-vastus Arthrotomy



Sub-vastus Arthrotomy

Skin incision

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 tubercle is then carried out.

Medial parapatellar 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 tubercle.

Mid-vastus Arthrotomy

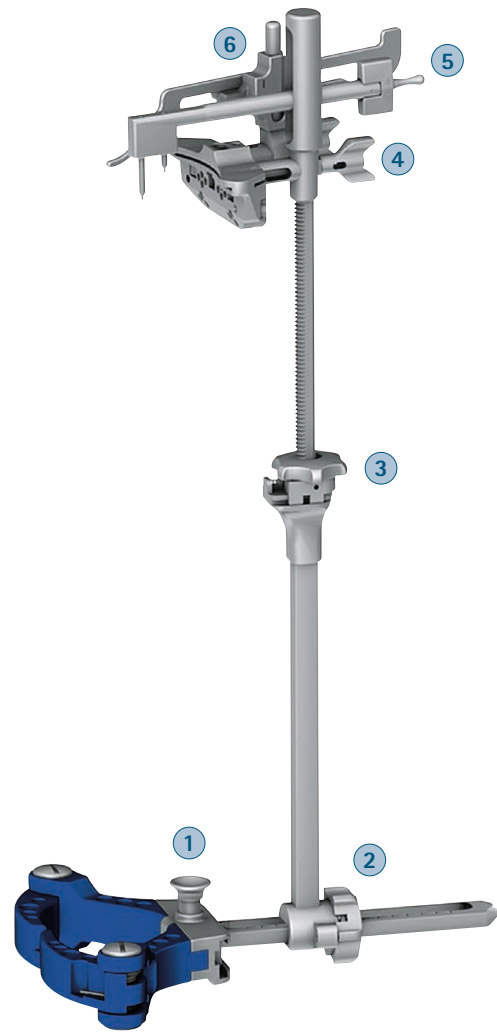
With the knee in flexion, the arthrotomy is performed starting with a 4 to 6 cm incision of the fascia at the inferior border of the VMO, running horizontal to the medial aspect of the patella, continuing and ending distally medial to the medial tubercle.

Sub-vastus Arthrotomy

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 corresponds to the deformity. The patella can then be everted or sub-luxated laterally.

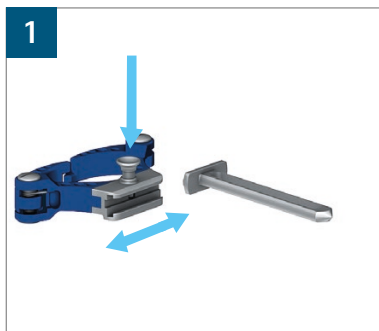
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6 | ASSEMBLY INSTRUCTIONS AND INSTRUMENT HANDLING

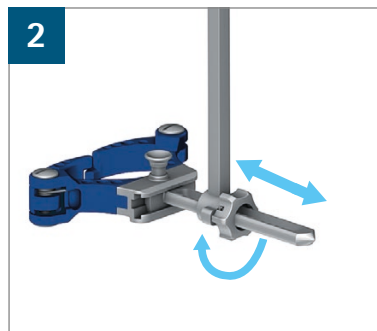


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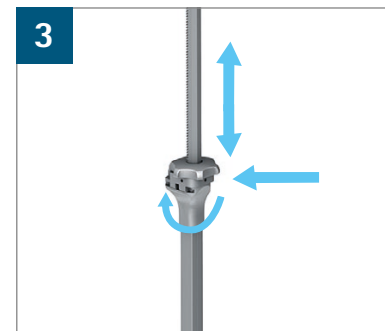
A | TIBIA EXTRA-MEDULLARY ALIGNMENT – ASSEMBLY INSTRUCTIONS



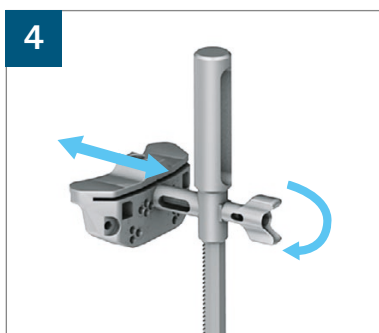
- Press the upper button on the bimalleolar clamp.
- Engage the support in the groove.
- When the neutral position is reached, release the button.



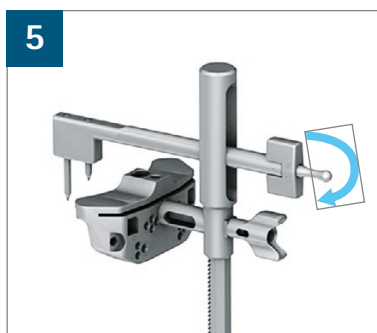
- Turn the wheel of the tibial alignment handle to the open position, "OP-EN" will be displayed.
- Engage the handle onto the bimalleolar support.
- Adjust to the neutral position.



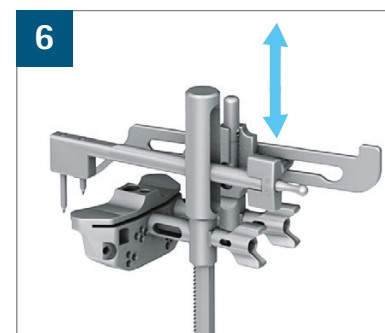
- Push on the handle adjusting wheel to release the locking mechanism.
- Engage the holding rod in the handle.
- Release the wheel when the desired level is reached.
- Turning the wheel will allow a fine adjustment on the height.



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



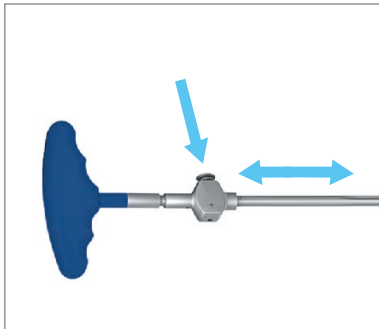
- The proximal fixation is set through the proximal opening of the holding rod.
- Turn the tab into a horizontal position to fix the assembly.



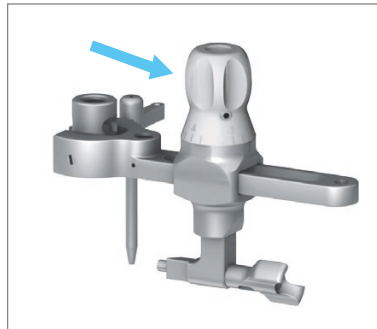
- The connection square of the stylus is engaged in one of the connection squares of the tibial cutting guide.
- The connection is fixed by locking the wheel on the stylus.
- The resection height is adjusted to the desired bone cut level.
- The stylus can be placed over the proximal fixation.

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B | TIBIA INTRA-MEDULLARY ALIGNMENT



- 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.

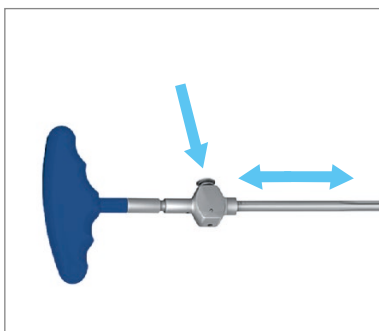


- Choose the IM orientation sleeve corresponding to the desired posterior slope resection of the tibia (default is 0° sleeve; sleeves with 3°, 5° and 7° posterior slope are available).
- Connect the sleeve to the IM alignment system.

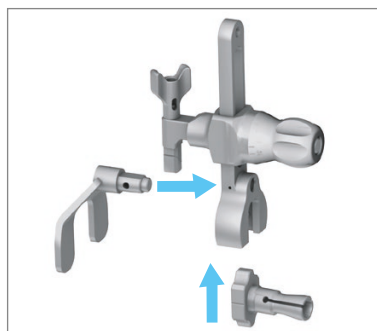


- Mount the assembly into the alignment block.
- Connect the alignment system to the tibia cutting guide in one of its connection squares.
- Fix the connection by locking the wheel.

C | FEMUR INTRA-MEDULLARY ALIGNMENT



- 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.

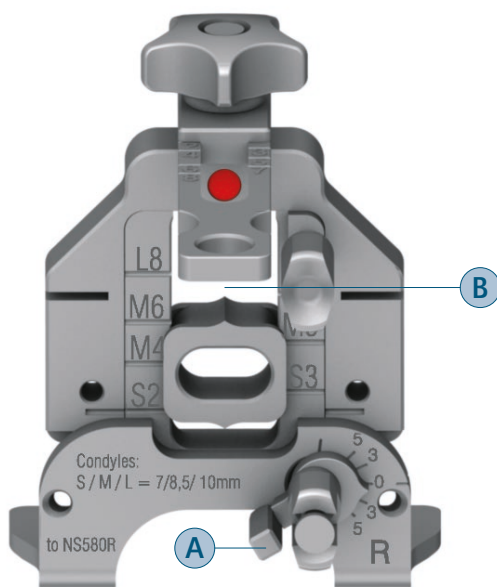
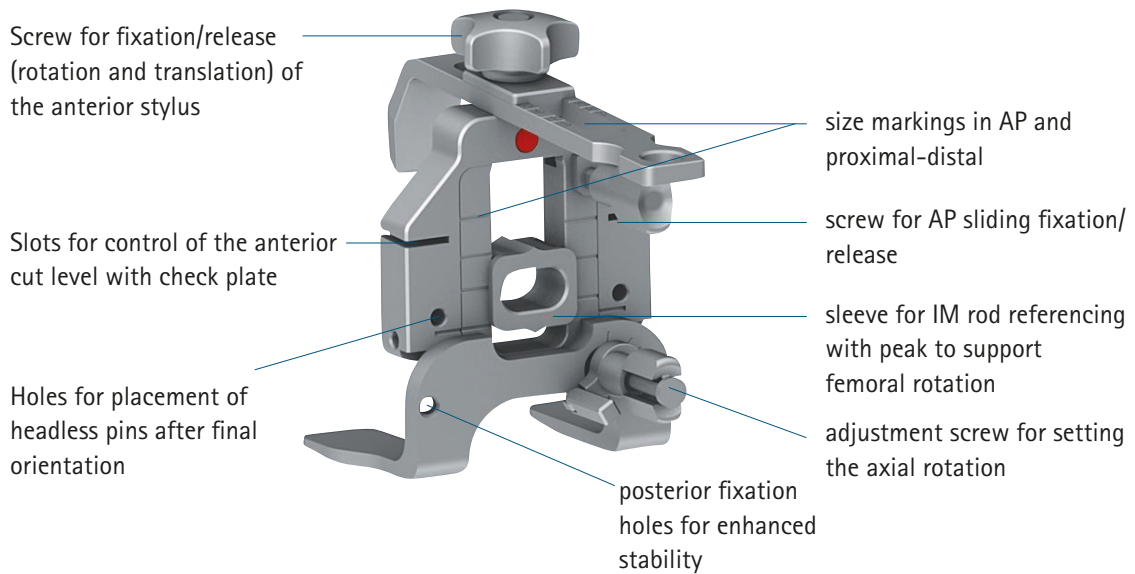


- Choose the IM orientation sleeve corresponding to the desired valgus alignment (standard: 5, 6, or 7°).
- Connect the sleeve to the IM alignment system.
- Connect a distal femur contact plate (small or large).



- 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.

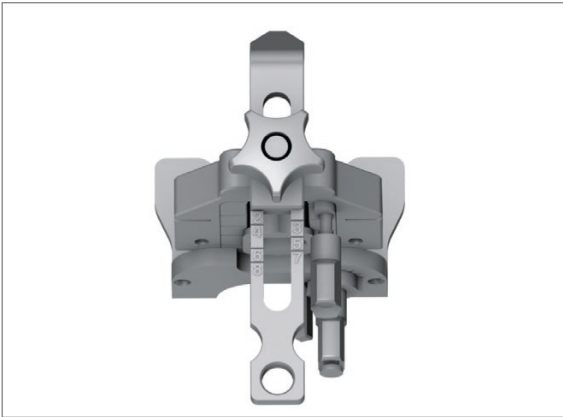
D | A/P AND ROTATION ALIGNMENT BLOCK FOR THE FEMUR



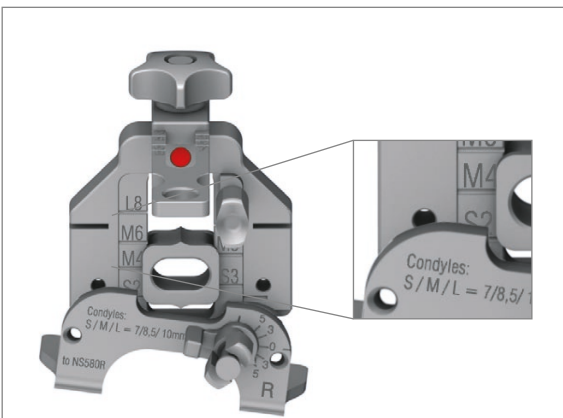
- **Option 1:** the rotation is pre-fixed (wheel A) to a desired value before the block is put in place.
- **Option 2:** the rotation is free and the block is placed in contact with the distal femur and the posterior condyles; the rotation can be tuned by turning the posterior wheel (A), checking the alignment of the AP window (B) with the femur AP plane (Whiteside line).
- **Option 3:** 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. Oversizing 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.

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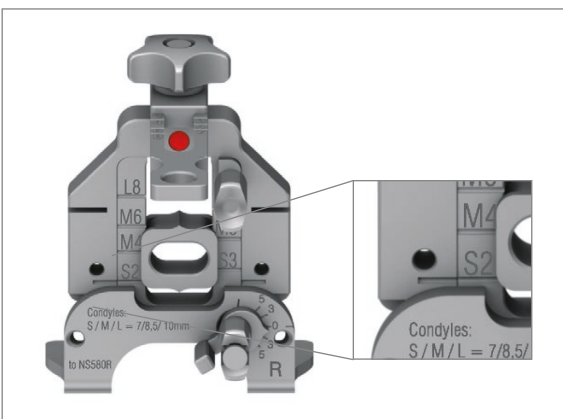
D | A/P AND ROTATION ALIGNMENT BLOCK



- 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.
- In this case, choose the direct upsize or downsize 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 mm; M = size 4, 5, 6 = 8.5 mm and L = 7, 8 = 10 mm. Up- or down-sizing can therefore also have an impact on the extension gap.

E | TIBIA-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.



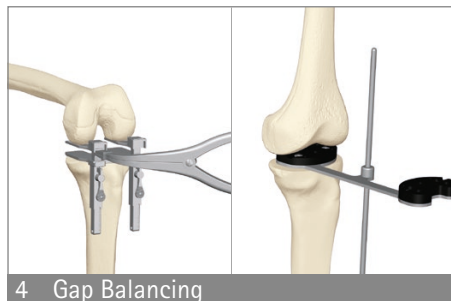
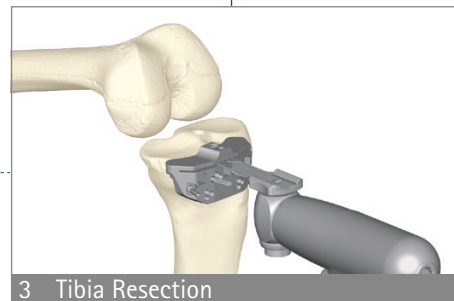
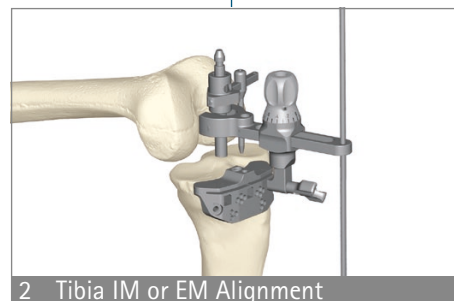
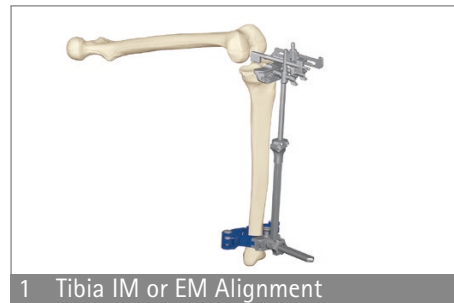
Left knee tibial resection with a less invasive approach

- 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.

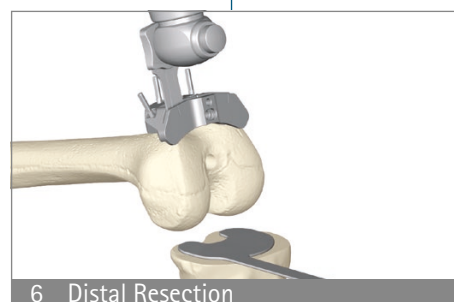
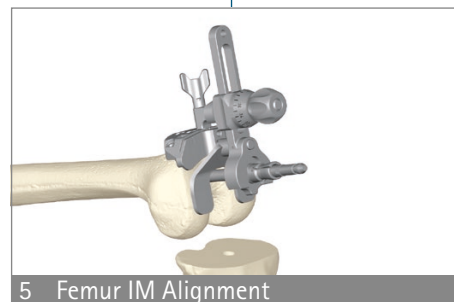


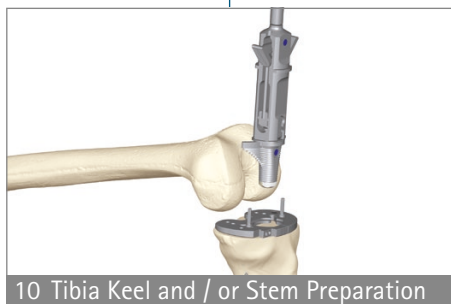
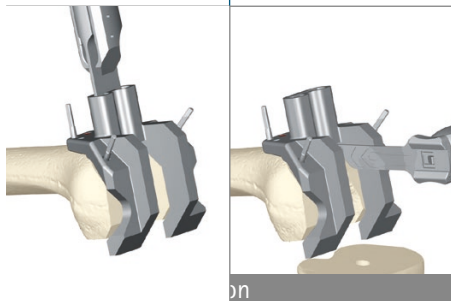
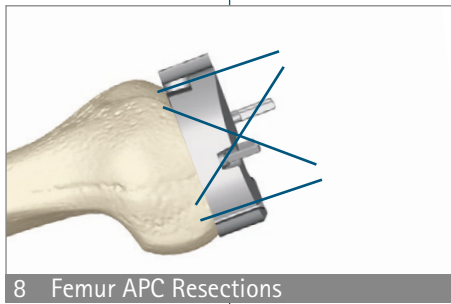
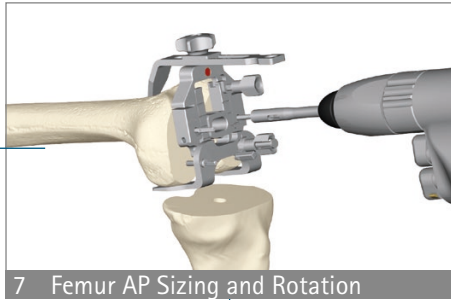
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7 | WORKFLOW SYNOPSIS – TIBIA FIRST

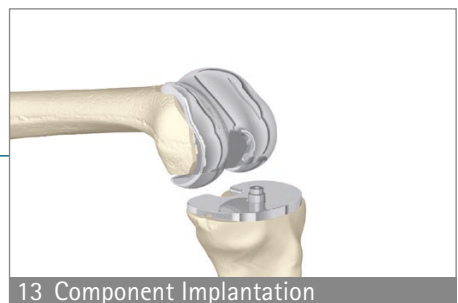
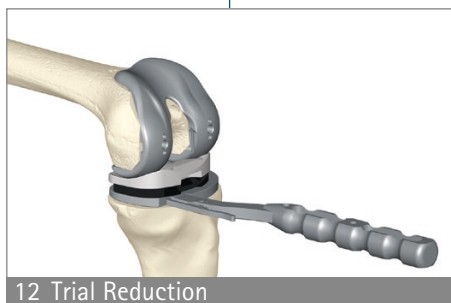
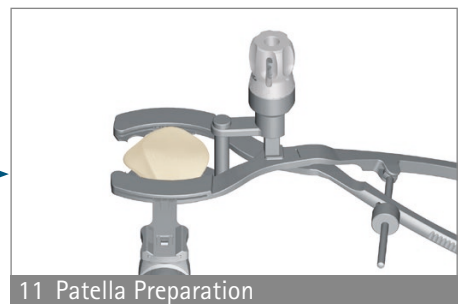


optional



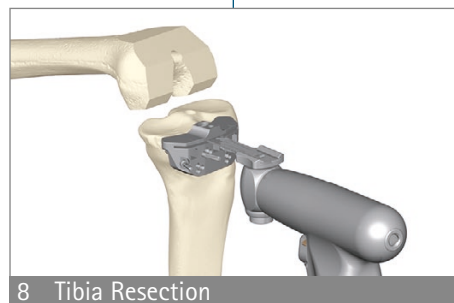
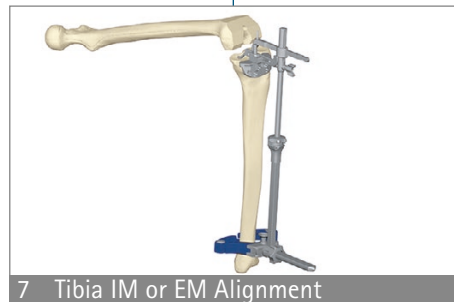
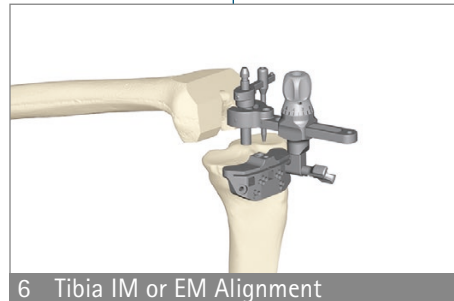
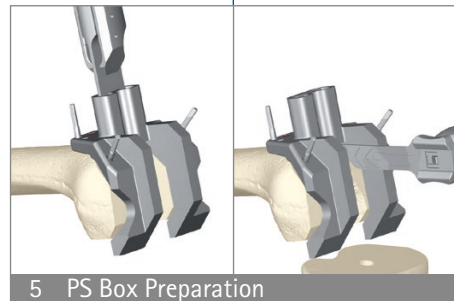
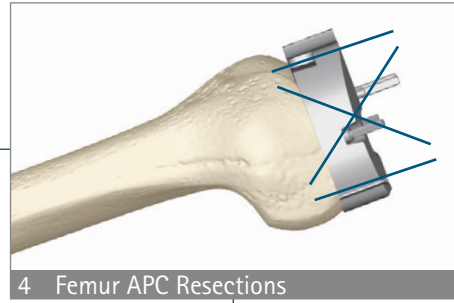
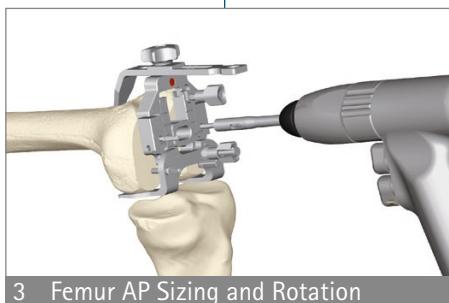
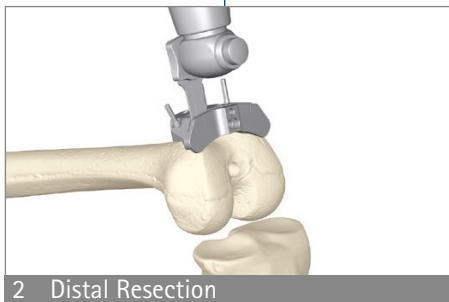
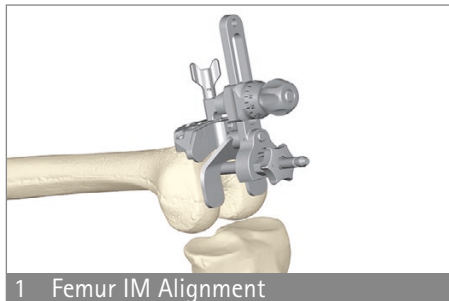


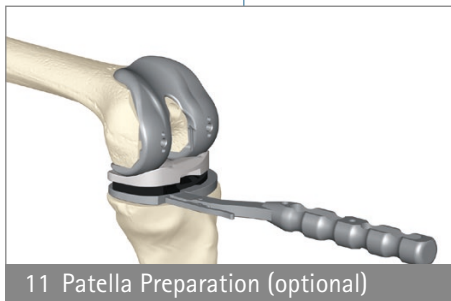
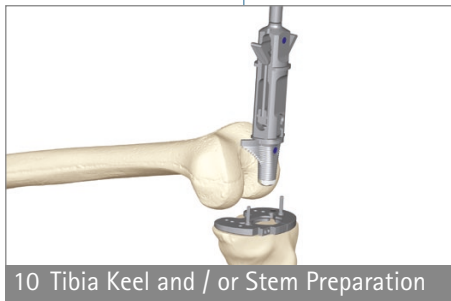
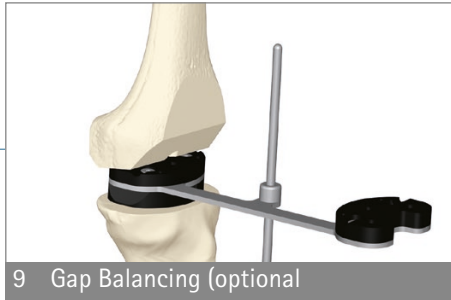
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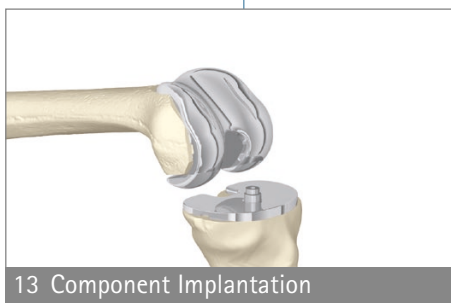
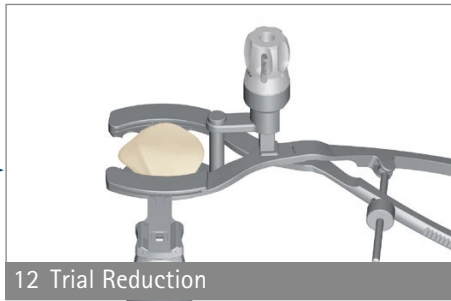
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7 | WORKFLOW SYNOPSIS – FEMUR FIRST





optional



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8 | TIBIA PREPARATION - EXTRA-MEDULLARY 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.
- 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.
- When the rotation has been adjusted to the mid-third of the tibial tuberosity and the second toe axis (or according to the patient's individual anatomy since these landmarks may not be in line with the mechanical axis of the tibia), the second spike can be impacted defining the final tibia rotation.

INSTRUMENTS



Bimalleolar clamp NS345R



Bimalleolar clamp support NS344R



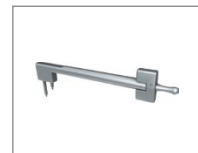
Alignment system handle NS342R



Holding rod for cutting guide NS341R



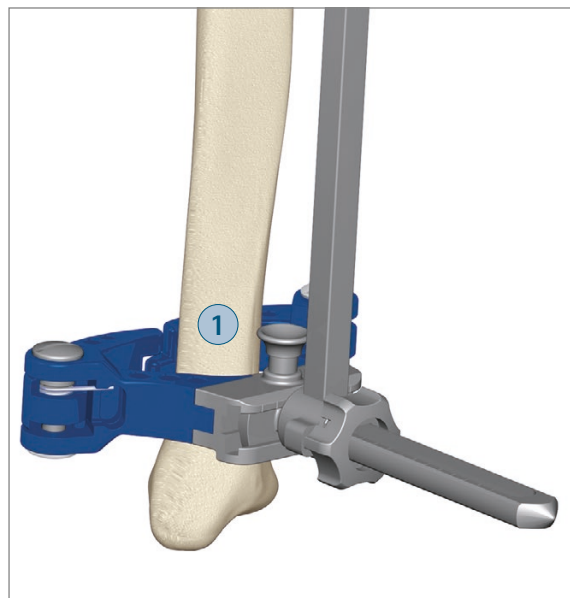
Tibia cutting guide NS334R



Proximal fixation NS343R

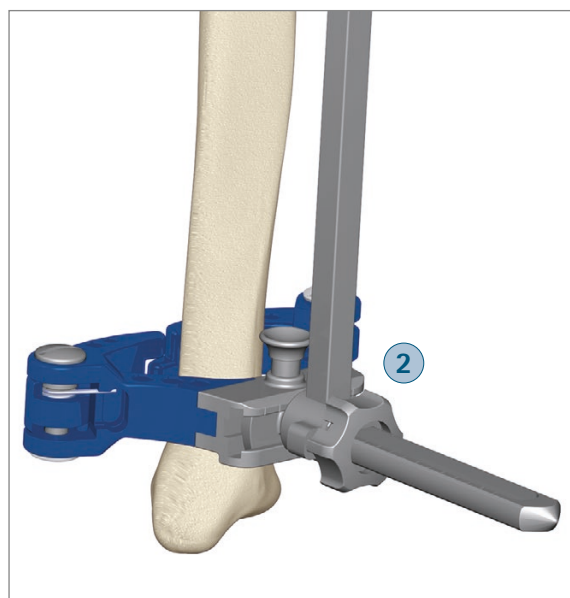
Varus/valgus alignment

Pushing the knob (1) 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

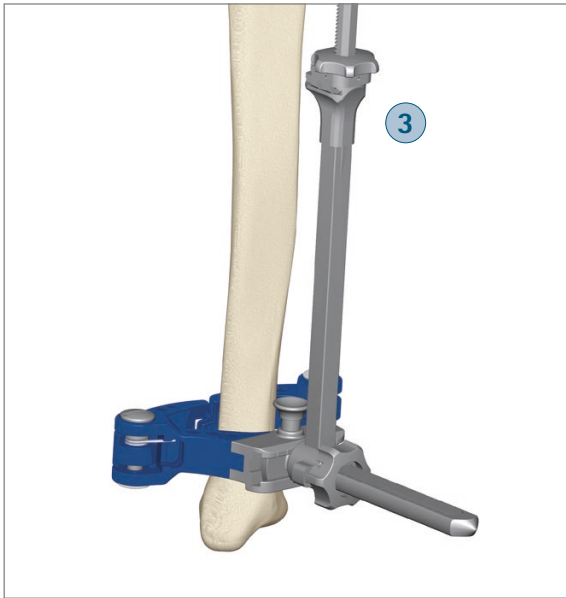
Releasing the fixation wheel (2) at the bottom part of the alignment system (by aligning OP-EN), the alignment system can be shifted anteriorly in order to increase the slope of proximal tibia resection. The distance between the laser marked lines on the scale corresponds to a 1° adjustment for a 40 cm long tibia.



Tibia stylus NS347R

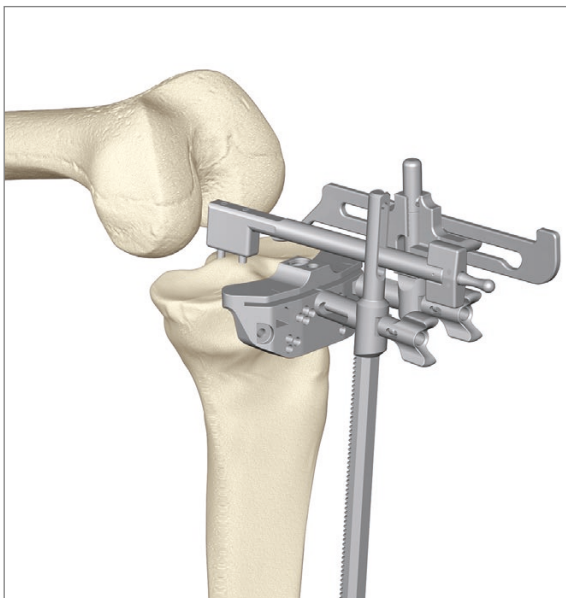
AESFULAP[®] e.motion[®] System

8 | TIBIA PREPARATION



Height adjustment (3)

- The resection height is determined in preoperative planning. The aim is to remove any defect on the tibial joint surface as completely as possible in order to create a bed for the tibia plateau on intact bone for optimal support of the implant.



- The planned value is set on the stylus, which is then mounted into the tibia cutting guide. The extramedullary alignment instrument is then lowered until the stylus comes into contact with the chosen point.
- Referencing the healthy tibia plateau is helpful to determine the level of the joint line. Referencing the deepest point of the worn side of the tibia helps to reduce the cut by resecting only 2 mm. Preoperative planning and surgeon preference are used to determine which reference to use.

INSTRUMENTS



Bimalleolar clamp NS345R



Bimalleolar clamp support NS344R



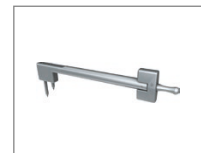
Alignment system handle NS342R



Holding rod for cutting guide NS341R

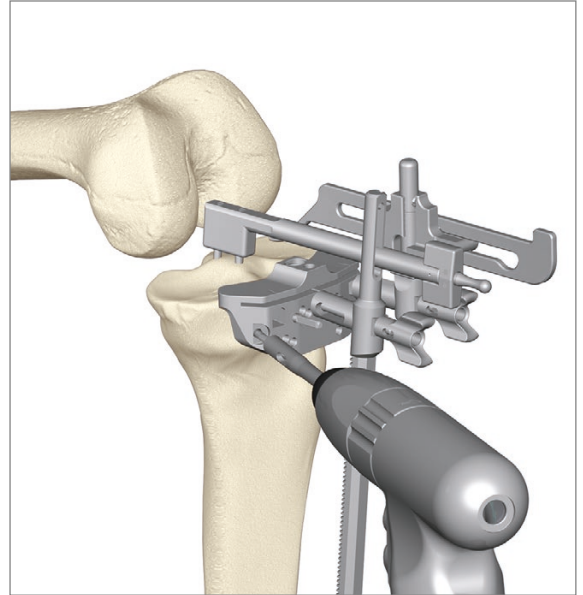


Tibia cutting guide NS334R

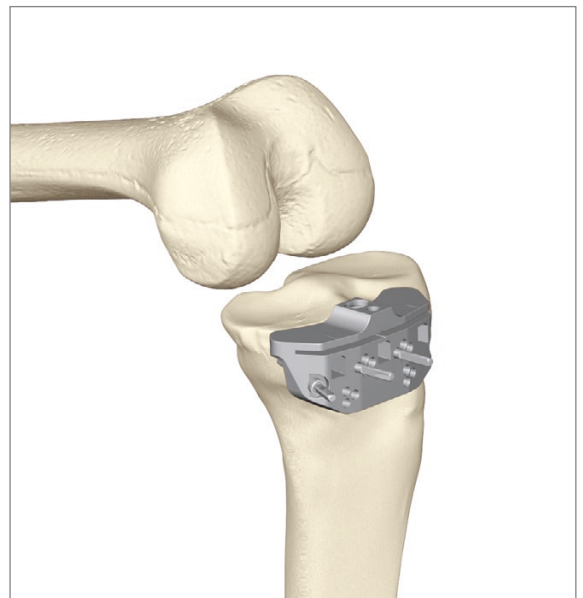


Proximal fixation NS343R

- 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 counter-clockwise. The proximal fixation can be removed by disengaging the spike from the tibial spine.



Tibia stylus NS347R



Headless pins 63 mm
NP583R



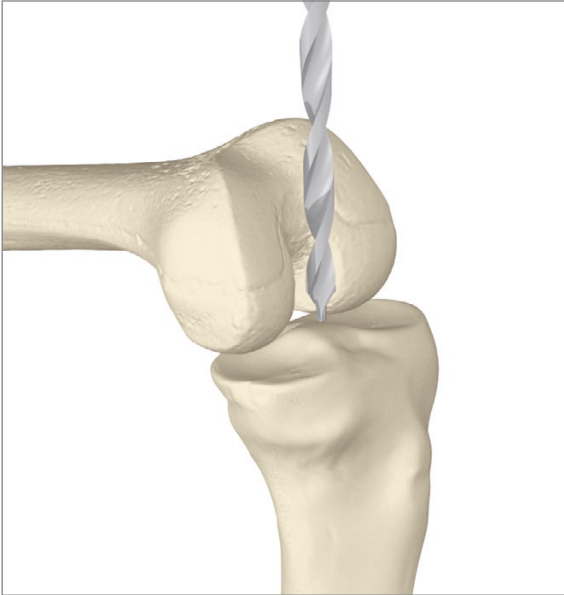
Pin driver NP613R



Acculan drill

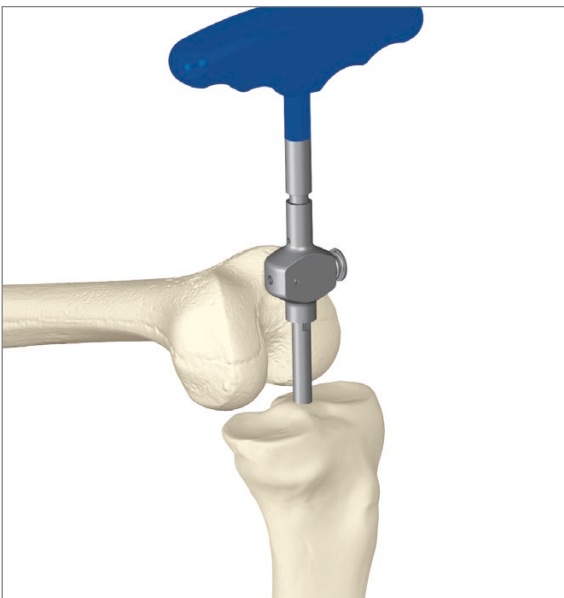
AESCULAP® e.motion® System

8 | TIBIA PREPARATION - INTRA-MEDULLARY ALIGNMENT



8.2 Intramedullary Referencing

- 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.



- The intramedullary rod is inserted into the prepared canal, after the contents are irrigated and suctioned, with the help of 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.

INSTRUMENTS



Drill Ø 9 mm NS330R



T-handle NE198R



IM alignment rod NS331R



IM alignment system NS332R

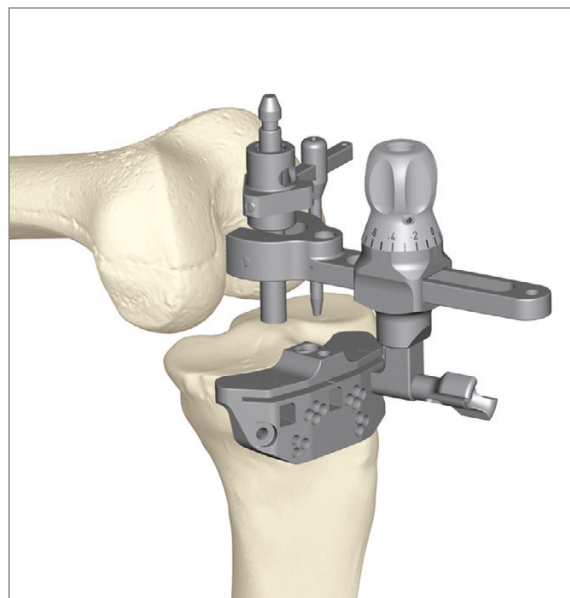


Tibia cutting guide NS334R



Tibia IM stylus for orientation sleeves NS847R

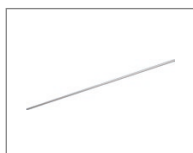
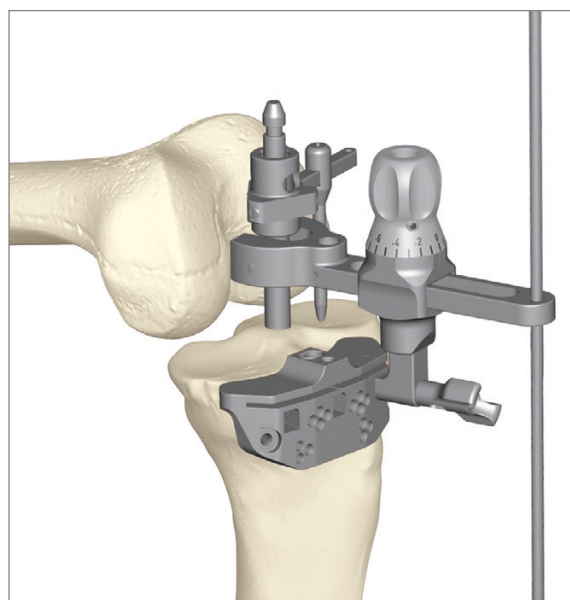
- The stylus is set on the deepest point of the tibia plateau to define the 0-level cut. The height of the cut is then adjusted by turning the tuning wheel to the desired amount of resection in millimeters.



NOTE

The surgeon should realize that the matched implant resection for the tibia is 10 mm.

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



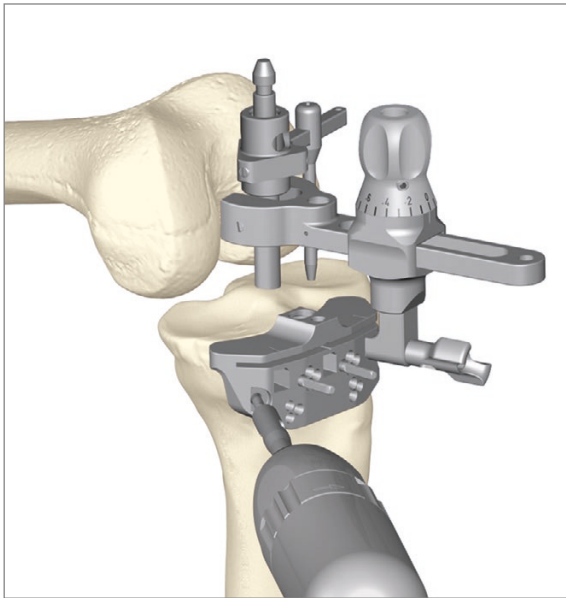
Alignment rod long
NP471R



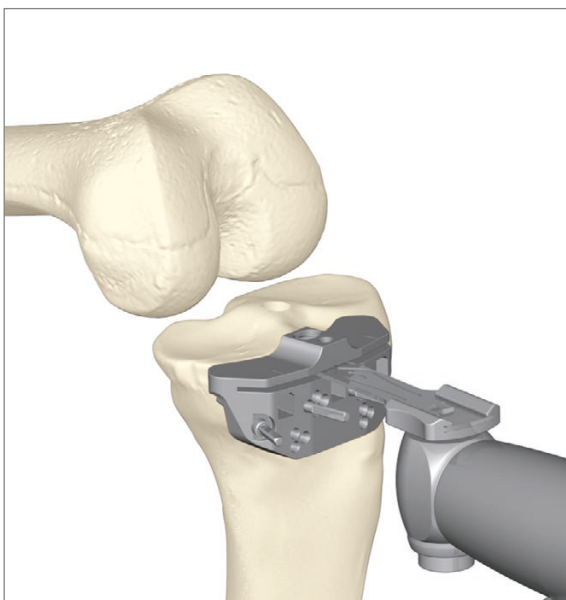
Tibia orientation sleeve
0°, 3°, 5°, 7° NS843R-
NS846R

AESCULAP® e.motion® 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 IM tibia alignment system is removed in one step with the T-handle after unlocking the cutting block from the alignment system by turning the locking wheel in a counterclockwise direction.



8.3 Tibia Resection

- Once the cutting block is positioned and fixed, the proximal tibial resection is performed. (See Note)
- 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 tissue sleeve of the knee joint is paramount. A special attention has to be paid: use of Hohmann retractors, collaterals 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



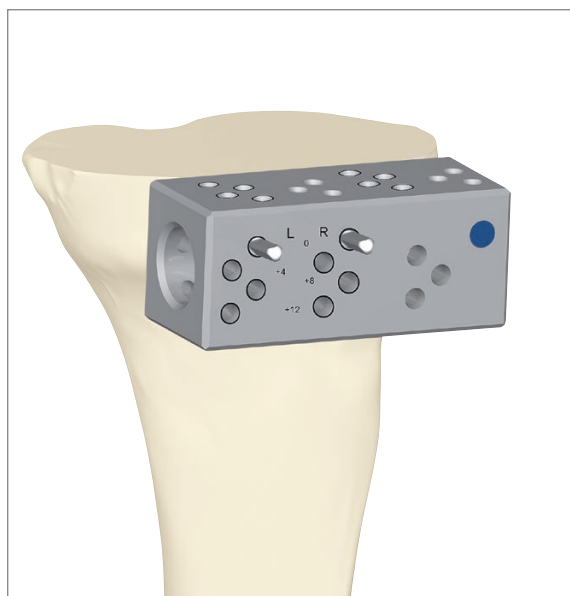
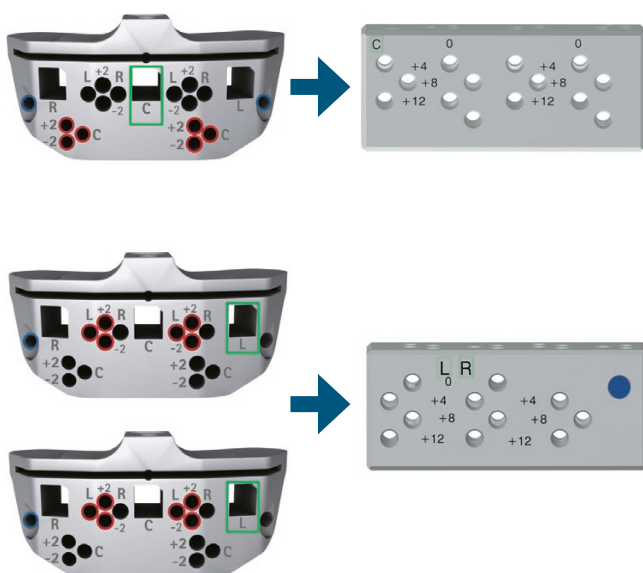
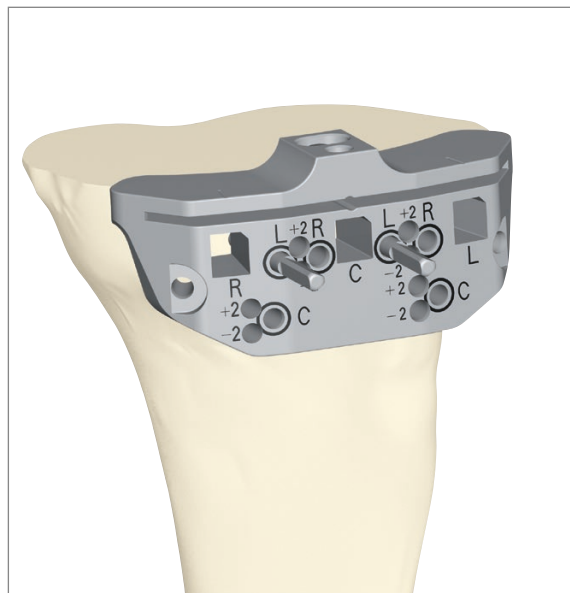
Tibia cutting guide NS334R



Headless pins 63 mm NP583R

8.4 Tibia-Augmentation

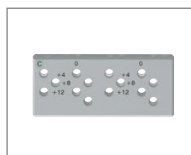
- For bony defect on the tibia plateau, the e.motion® system offers semi tibia augments in heights of 4 mm, 8 mm and 12 mm.
- After the tibia standard resection, the tibia cutting guide is removed. According to the used pin wholes on the tibia cutting block, the move block placed over the two headless 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. 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.



Tibia cutting guide
NS334R



Headless pins 63 mm
NP583R



Tibia move block
NQ1077R



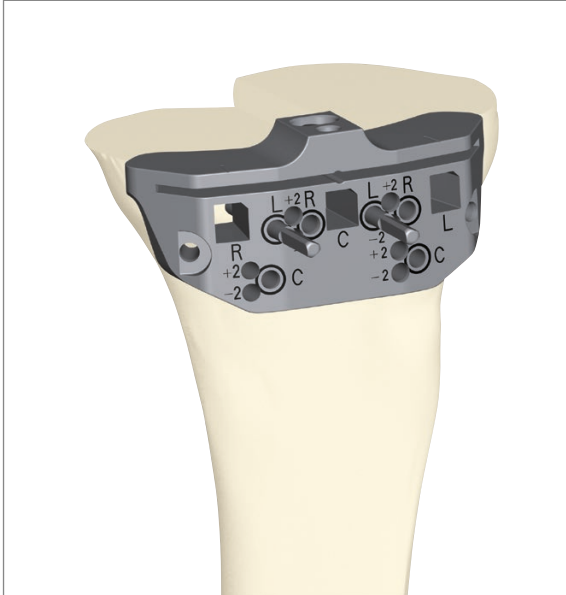
Acculan drill



Pin driver NP613R

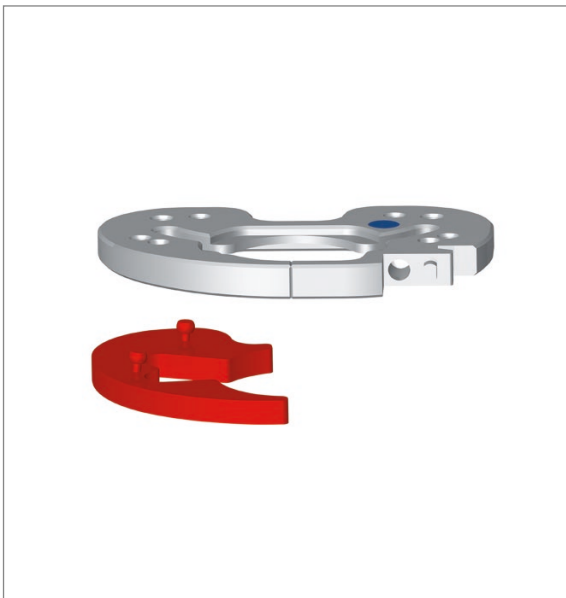
AESFULAP[®] e.motion[®] System

8 | TIBIA PREPARATION



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 cut tibia side. An e.motion[®] UC/PS tibia plateau which offers the possibility to screw hemi spacer has to be used for definitive implantation.



INSTRUMENTS



Tibia cutting guide
NS334R



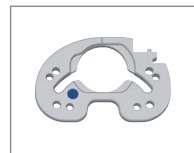
Headless pins 63 mm
NP583R



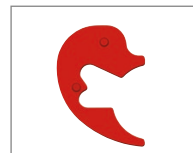
Acculan saw



Screw driver NS410R



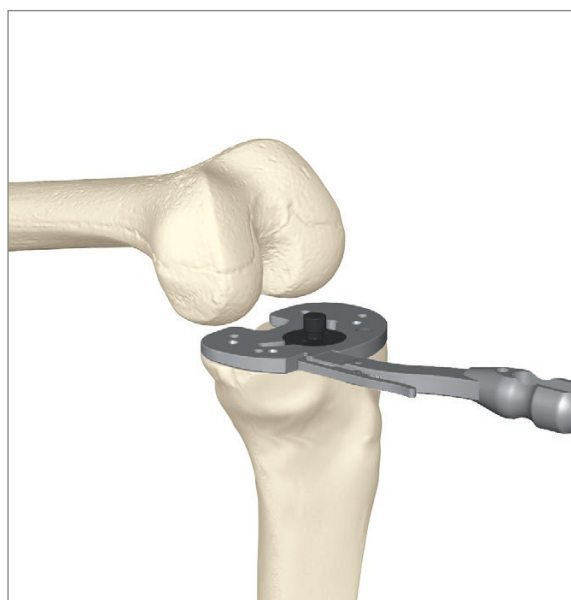
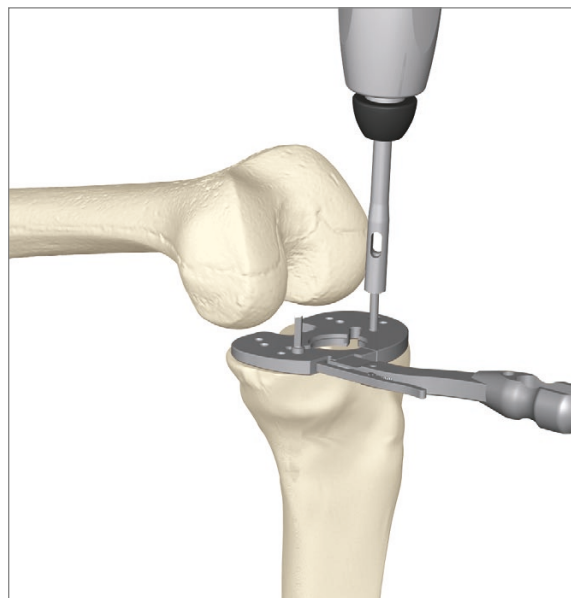
Tibia preparation plateau
NS532R-NS538R



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 consists in building the tibia and femur trial implant with the adequate trial meniscal component. The rotation peg insert of the corresponding 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 drill



Acculan saw



Tibia trial/preparation plateau
NS532R-NS538R



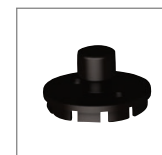
Tibia trial/prep. plateau holder
NQ378R



Headed pins 30 mm
NP585R



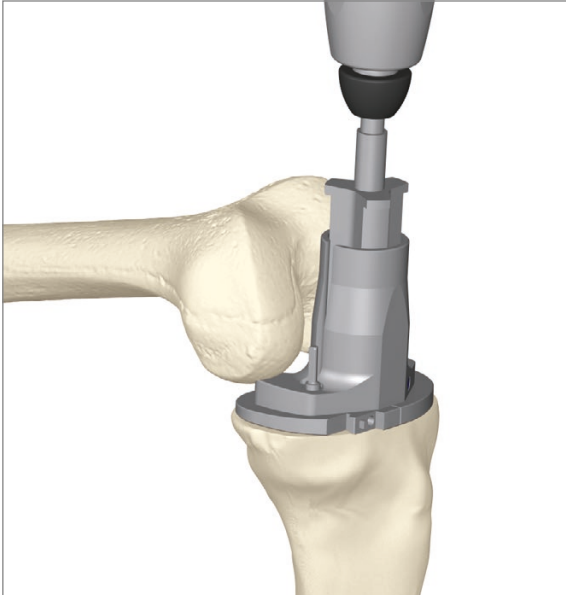
Pin driver NP613R



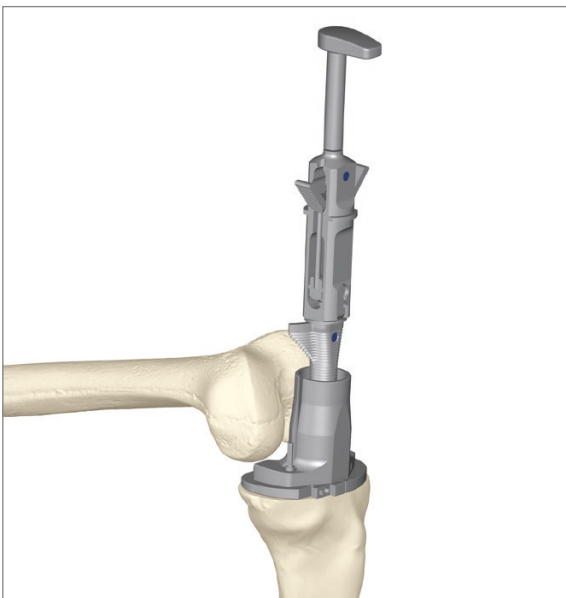
Rotation peg
NS541P-NS543P

AESCULAP® e.motion® System

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 drill is available in 12 mm for size group S (1, 2, 3), 14 mm for size group M (4, 5, 6) and 16 mm for L (7, 8).



- The wing stem preparation is performed by using the winglet chisel corresponding to the chosen size group connected to its handle through the guiding tower down to the stop. If necessary, it is removed using the hammer or if no stem preparation is utilized the handle is removed by pushing the two lever up. The chisel can be kept in place for trial reduction.

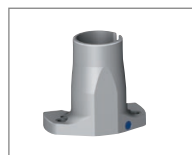
INSTRUMENTS



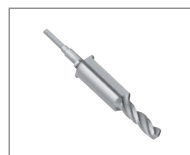
Tibia preparation plateau
NS532R-NS538R



Headed pins 30 mm
NP585R



Guide for winglet chisel
NS527R-NS529R



Drill with stop NS521R-
NS523R



Acculan drill

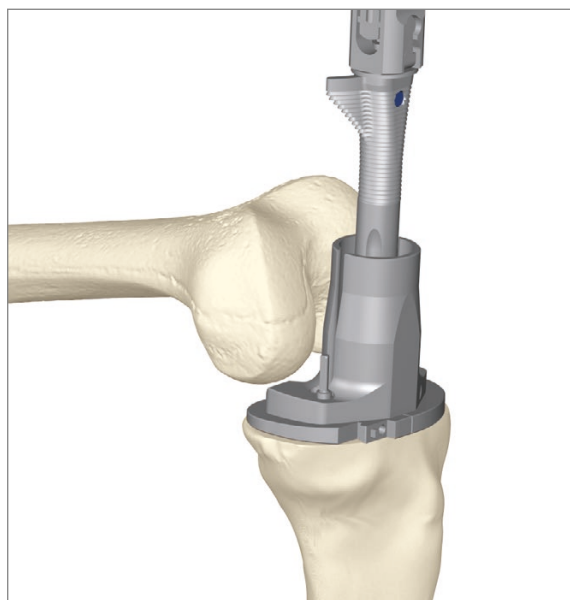
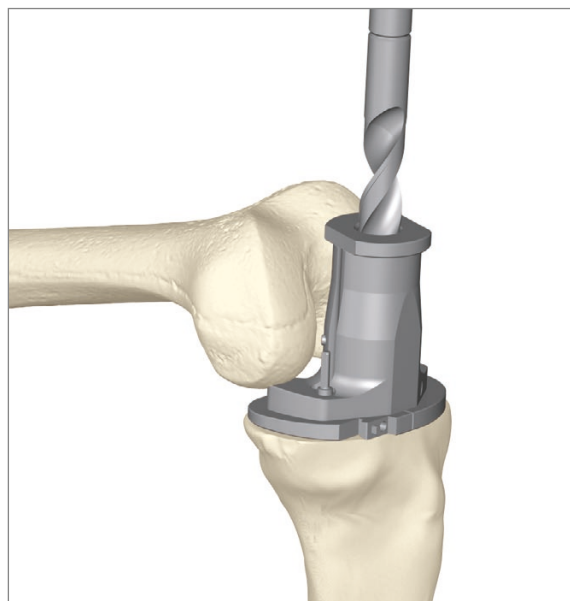
8.6 Tibia Stem Preparation

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. This option is recommended for cemented stems.

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 12 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.

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



Trial obturator
NE105T-NE107T



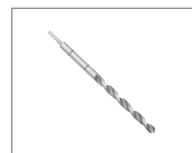
Winglet chisel / trial keel
NS524R-NS526R



Osteodensar holder
NS520R



Tibia drill sleeve for
cemented stem NS547R-
NS549R



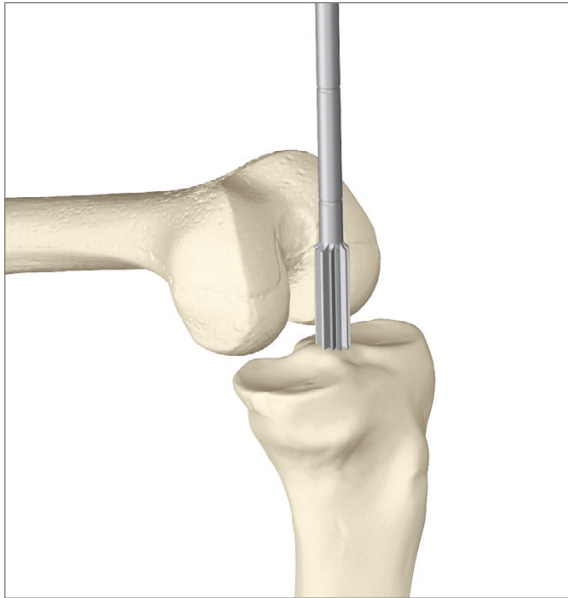
Drill for cemented stem
NS544R-NS546R



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

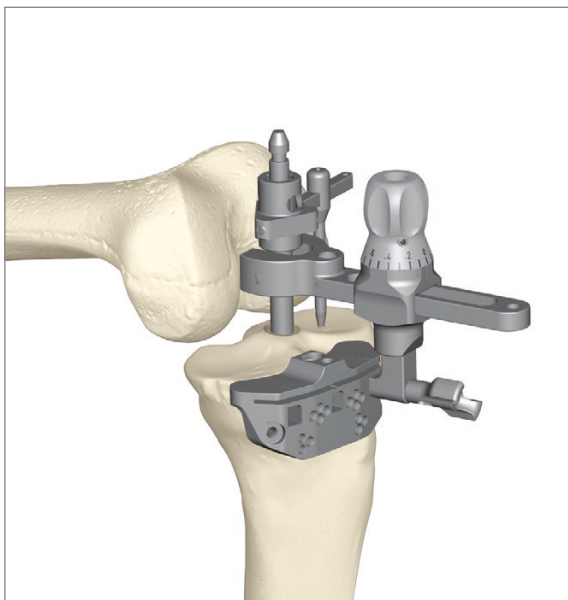
AESCULAP® e.motion® System

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.

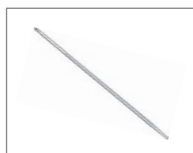


The height of the cut is then adjusted by turning the tuning wheel. The alignment of the cutting block can be checked with the EM alignment rod. The cutting block is fixed with two headless pins in position '0'; the +/-2 mm pinholes are available on the resection blocks to further adjust the resection 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



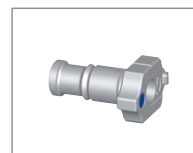
IM alignment system NS332R



Tibia IM stylus for orientation sleeves NS847R



Tibia cutting guide NS334R

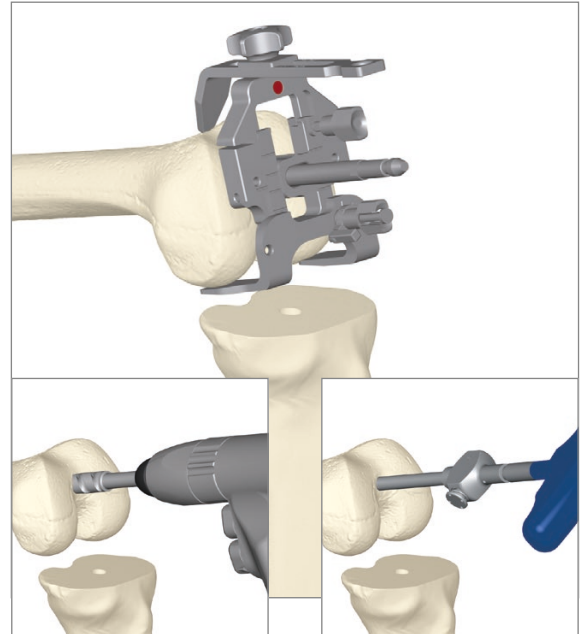


0° orientation sleeve NS843R

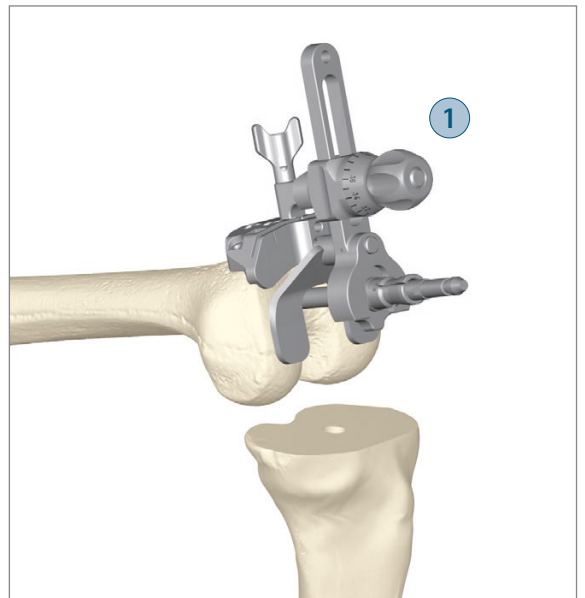
9 | FEMUR PREPARATION

9.1 Femur Intra-medullary Alignment

- The medullary canal of the femur is opened according to the pre-operative 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 size of the femur or 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 intramedullary 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 (1) 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 drill



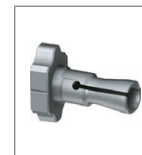
T-handle NE198R



Tibia alignment system NS332R



Distal femur contact plate NS834R,



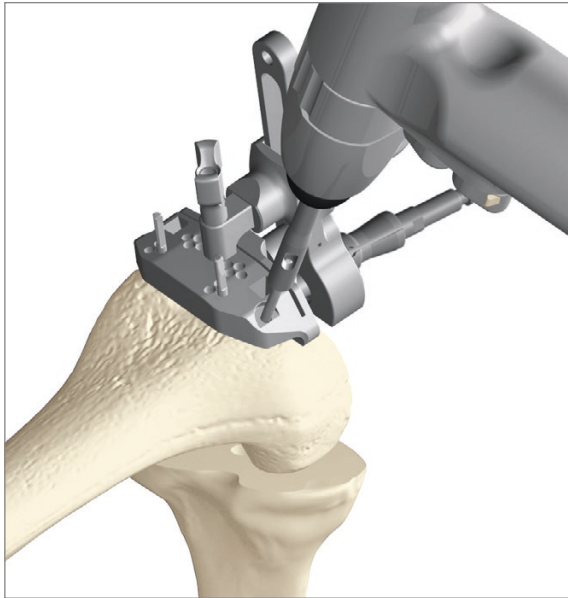
Femur orient. sleeve NS335R-NS337R



Tibia cutt. guide NS334R

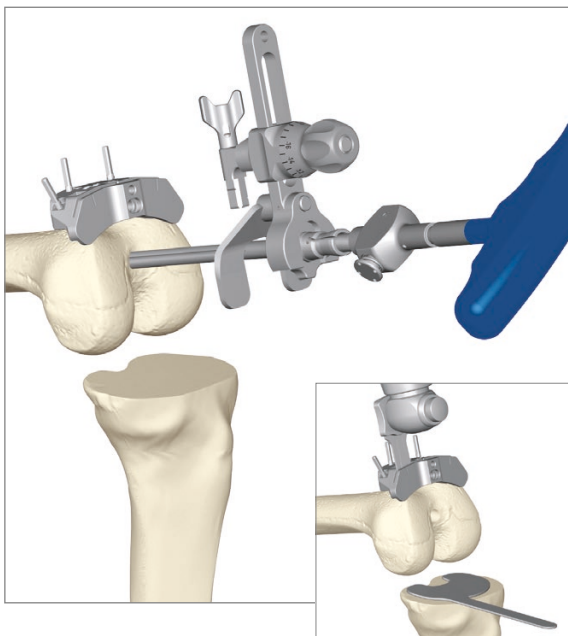
AESFULAP[®] e.motion[®] System

9 | FEMUR PREPARATION



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



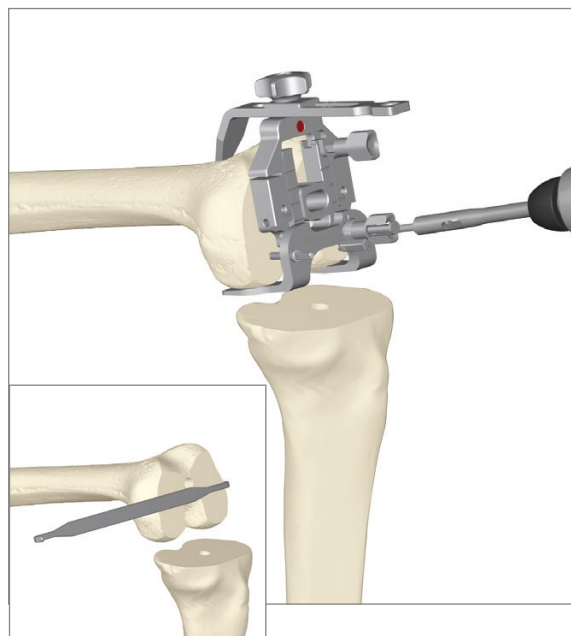
Headl. pins 63 mm
NP583R



Acculan drill

9.3 Final Femur Sizing and Rotation

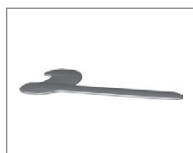
- The ML size of the resected femur should be checked with the ML femoral sizing gauge.
- The femur alignment block is placed flush onto the resected distal surface of the femur. The posterior foot plate must be in contact with the posterior condyles. The femoral alignment block is fixed with two headless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



T-handle NE198R



Tibia protection plate
NQ377R



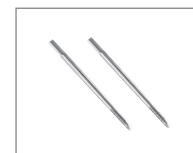
Acculan drill



ML femoral size gauge
NS339R



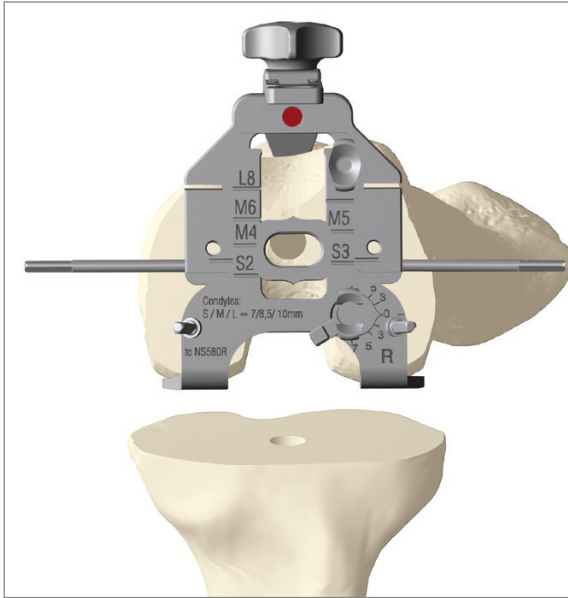
Pin driver NP613R



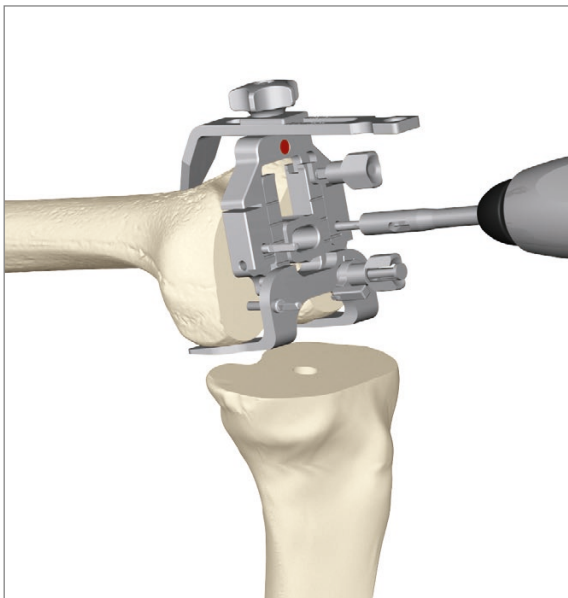
Headless pins 63 mm
NP583R

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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.

NOTE

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

INSTRUMENTS



Femur alignment block
NS580R



Headless pins 63 mm
NP583R



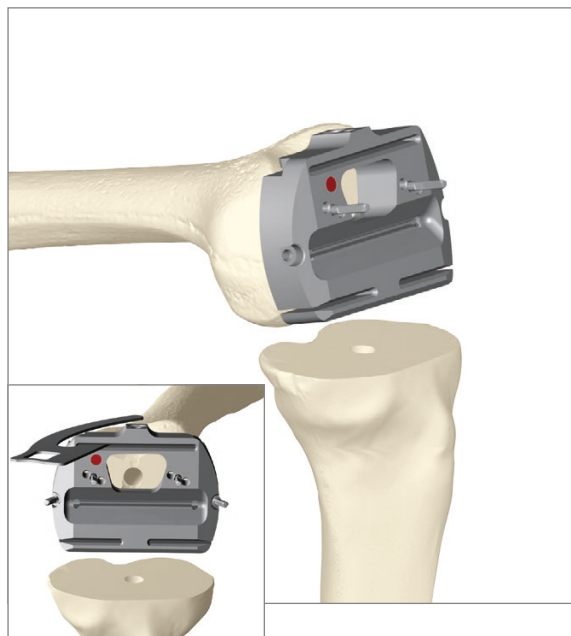
Pin driver NP613R



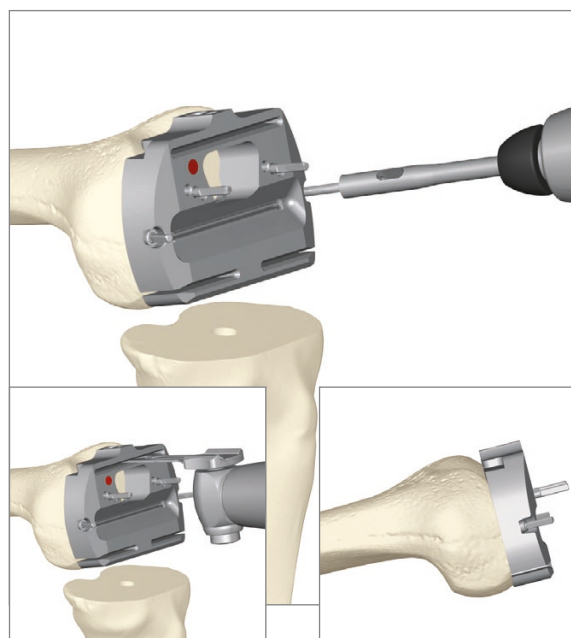
Acculan drill

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 follow: 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 NS321R-NS328R



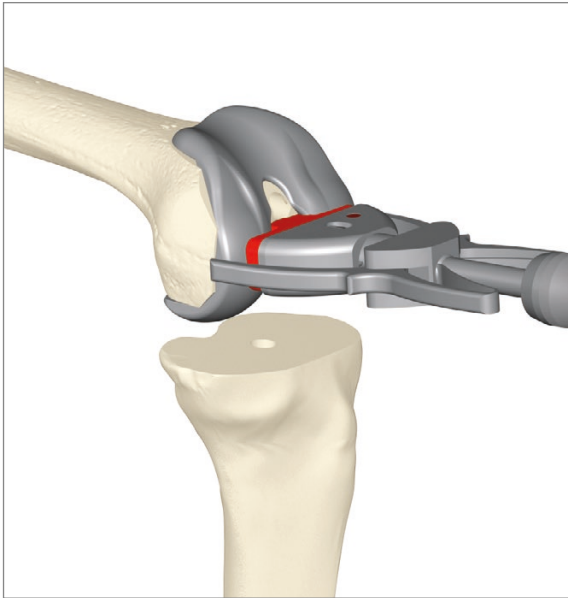
Cutting depth check blade NS850R



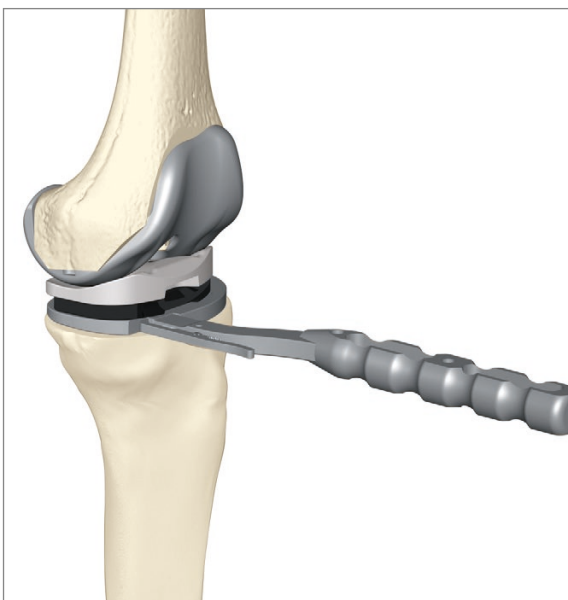
Acculan saw

AESCULAP® e.motion® System

9 | FEMUR PREPARATION

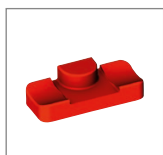


- The quality of the resections and the fit of the prosthesis can be assessed by placing the femur trial implant onto the bone preparation. Using the corresponding holder, make sure to apply a force toward anterior in order to avoid a flexed position.
- For downsizing the femur, a smaller 4-in-1 cutting 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.



- After satisfying position of trial implants, the distal femur pegs are drilled.

INSTRUMENTS



Insert for NS600R,
NS601-NS603



Femur insertion
instrument NS600R



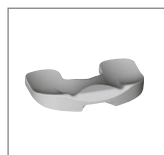
Trial femur NE702K-
NE708K, NE752K-
NE758K, NS981K-
NS986K



Tibia trial/prepa-
ration plateau
NS532R-NS538R



Tibia trial/prepa-
ration plateau holder
NQ378R



Trial gliding surface



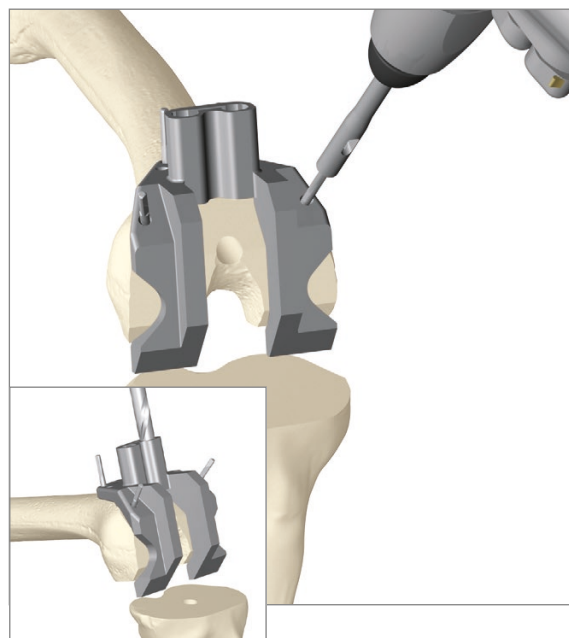
Femur peg drill
NE458R

9.5 PS Box Preparation

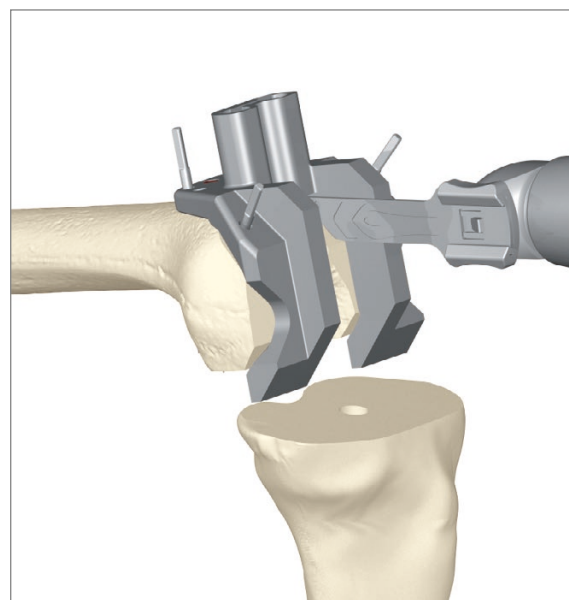
- The box preparation frame of appropriated size is placed onto the prepared femur. The frame is fixed to the bone on the anterior flange with two headed pins. Additional fixation is possible along the proximal trochlea groove.
- To avoid an undercut of the femoral condyles the box roof depth can be properly defined by drilling two holes through the roof guide in the box frame with the 9 mm medullary canal drill.

NOTE

For the PS femur version, narrow implants are not available.



- The medial and lateral inner box wall cuts are performed with a saw blade.



Guide for box preparation NS592R-NS598R



Complementary plate NS675-NS697



Headed pin 50 mm NP586R



Pin adapter NP613R



Acculan drill



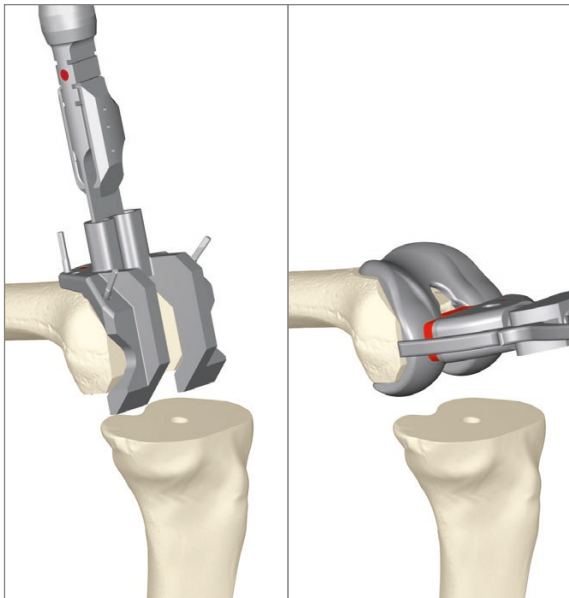
Headless pin 63 mm NP583R



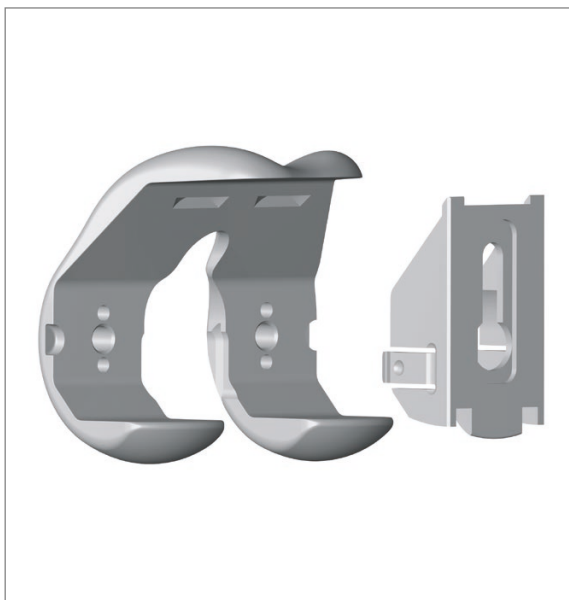
Drill bit Ø 9 mm NE443R

AESCULAP® e.motion® System

9 | FEMUR PREPARATION



- The final preparation of the box roof can be performed using the box chisel through the slot. It can also be achieved with the help of a reciprocating saw (GC769R or GC771R for Acculan 3Ti) or an oscillating saw with a 9 mm width blade (GE231SU for Acculan 3Ti).
- When using the box chisel, the chisel stop has to be placed in the slot that corresponds to the size of the femur. This will avoid violation of the posterior capsule by stopping the chisel at the respective depth.
- After the box preparation, the trial click box can be engaged onto the trial femur and a trial repositioning with the trial femur in place can be performed. If the trial femur is not flush with the trial femur articular geometry, the box cuts need to be reworked assessing the box preparation for residual bone.



NOTE

For the PS Femur version, narrow implants are not available.

INSTRUMENTS



Trial femur NE702K-NE708K, NE752K-NE758K, NS981K-NS986K
40



Headed pin 50 mm
NP586R



Headless pin 63 mm
NP583R



Femur box chisel NS599R



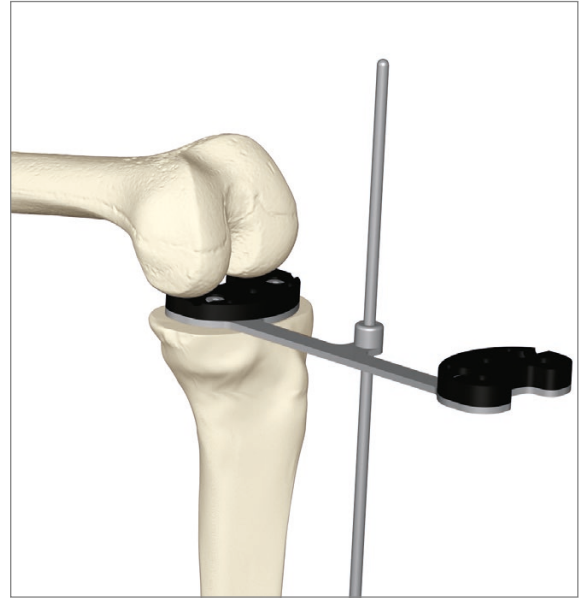
Femur box chisel stop
NS369R

10.1 Tibia First – Measurement with Spacers

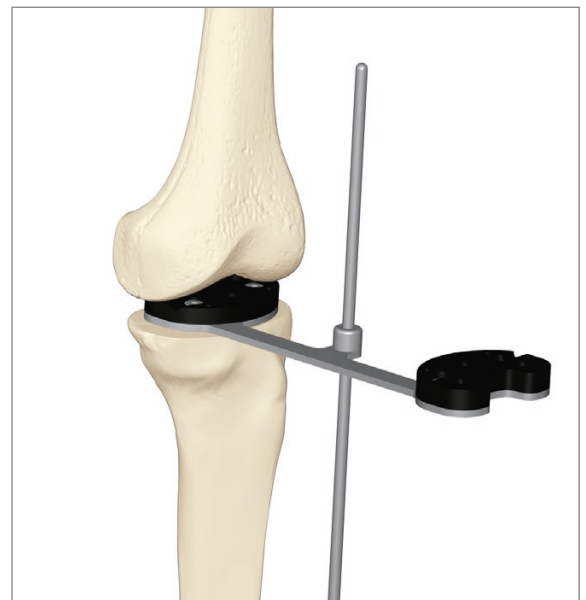
After performing the tibia resection, check the plane of the resection by inserting the thinnest spacer block (10 mm) in the joint. If the resection needs correction then apply the cutting block accordingly and recut the proximal tibia accordingly. The soft tissue gaps can be assessed by applying a varus/valgus 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 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.



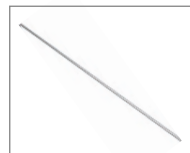
Acculan saw



Trial femur box
NE712R-NE718R



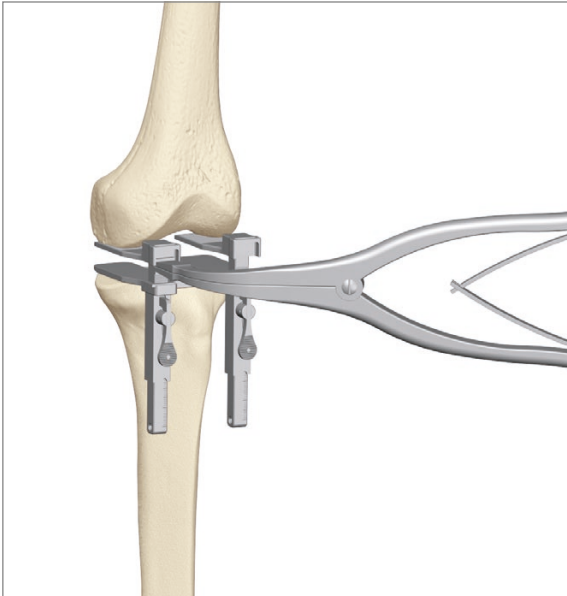
Tibia cut spacer NS852R-
NS854R



Alignment rod long
NP471R

AESCULAP® e.motion® System

10 | GAP BALANCING

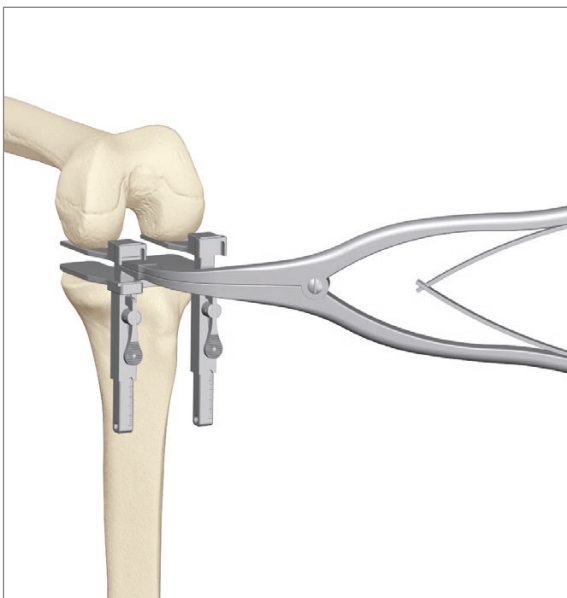


10.2 Optional Tibia First – Measurement with Distractor

- After performing the tibia resection, check the plane of the resection so that it corresponds with 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 height = 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



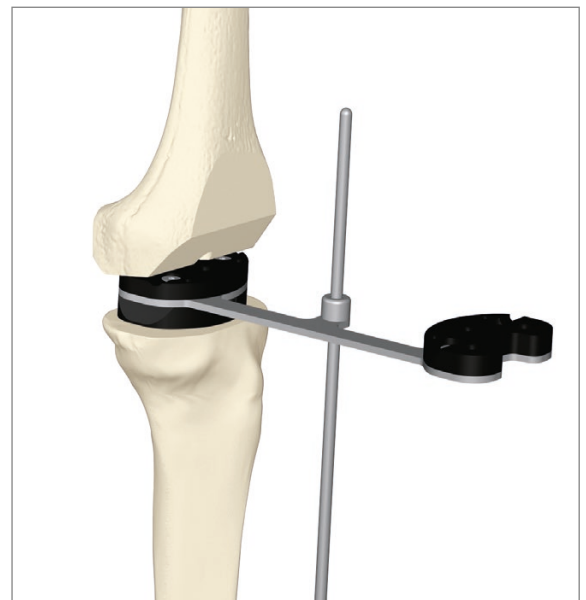
Distraction forceps
NP609R



Femur-tibia distractor
NP604R

10.3 Femur First – Measurement with Spacers

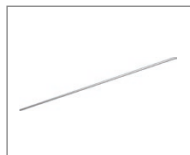
- After completion of the femoral and tibial resections, the trial femur implant is placed on the femur. The height of the resection and flexion/extension gaps can be checked by inserting the spacers like in chapter 10.1.



Tibia cut spacer NS852R-NS854R



Added femur cut spacer NS497-NS499



Alignment rod long NP471R

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10 | GAP BALANCING

		Flexion Gap		
		optimal	tight	wide
Extension Gap	optimal		<ul style="list-style-type: none"> ▪ increase tibia slope ▪ downsize the femur 	<ul style="list-style-type: none"> ▪ posterior capsule release and thicker insert ▪ increase distal cut and thicker insert ▪ increase femur size
	tight	<ul style="list-style-type: none"> ▪ posterior capsule release ▪ increase distal cut 	<ul style="list-style-type: none"> ▪ thinner insert ▪ increase tibia cut 	<ul style="list-style-type: none"> ▪ increase distal cut, release posterior capsule and thicker insert ▪ upsize femur and increase distal cut ▪ upsize femur and release posterior capsule
	wide	<ul style="list-style-type: none"> ▪ decrease distal cut ▪ downsize femur and thicker insert 	<ul style="list-style-type: none"> ▪ downsize femur and thicker insert ▪ downsize femur and decrease distal cut ▪ decrease distal cut 	<ul style="list-style-type: none"> ▪ thicker insert

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 pretend to be an exhaustive and systematic solution matrix. The surgeon has to make his own choices depending on the clinical evaluation, the surgical situation, patient specific issues and his own experience.

Overview femur/tibia compatibility

Size	F2	F3	F4N	F4	F5N	F5	F6N	F6	F7	F8
T1	■									
T2	■	■								
T3	■	■	■	■						
T4		■	■	■	■	■				
T5			■	■	■	■	■	■		
T6					■	■	■	■	■	
T7							■	■	■	■
T8									■	■

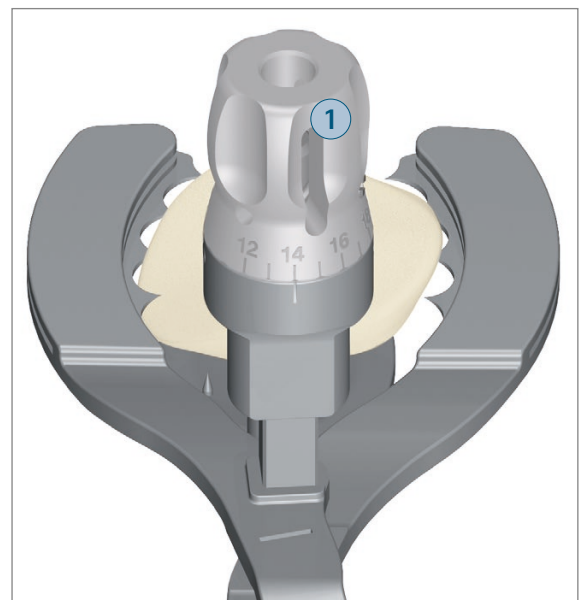
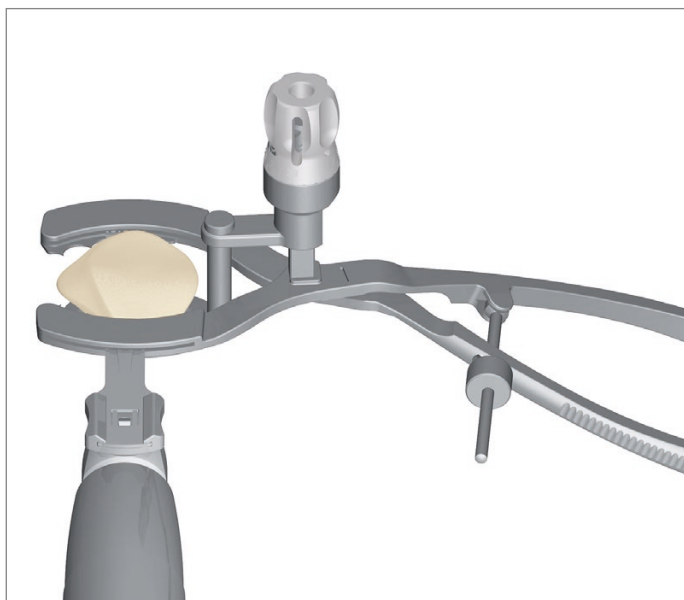
Tibia > Femur = no limitation

Femur > Tibia = maximal one femur size larger is allowed

■ Standard-Combination

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 the 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 (1) 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



A Caliper AA847R



B Patella resection clamp NS840R



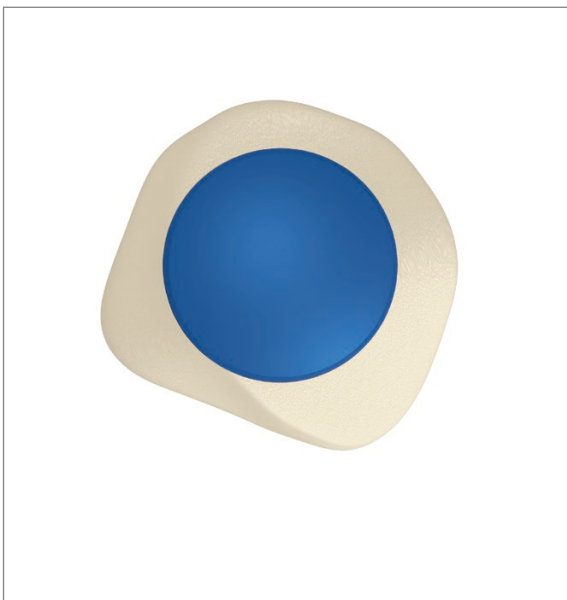
C Acculan saw

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11 | PATELLA PREPARATION



- 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 drillguide 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.



INSTRUMENTS



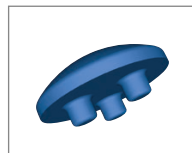
Patella drill/impaction clamp NS841R



Acculan drill

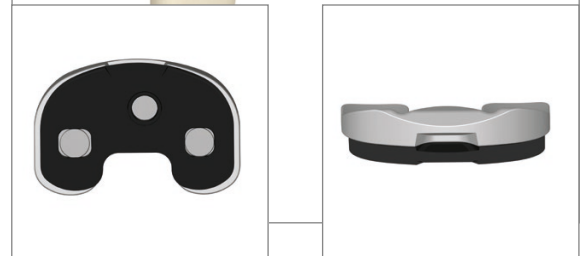
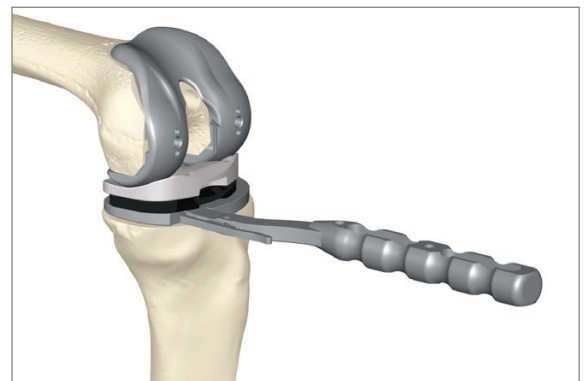
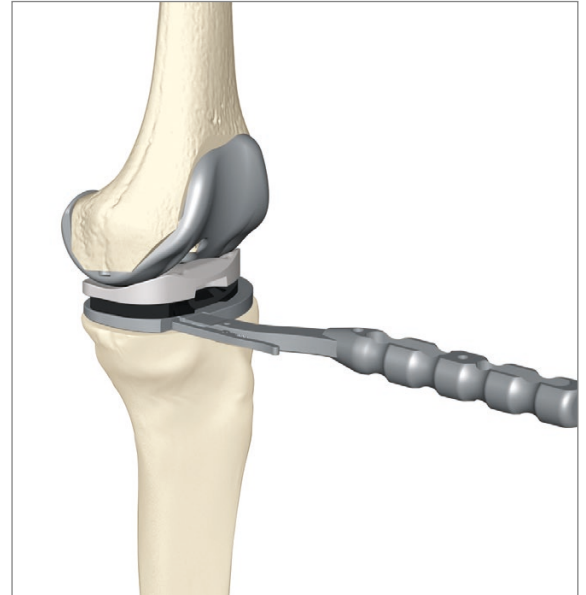


Drill with stop Ø 6 mm NQ449R



Trial patella NQ281-NQ285

- The trial femoral and tibial implants are placed onto the prepared bony surfaces.
- The polyethylene trial corresponding to the gap measurements with the spacer or the distractor is placed between both trial implants. The modular trials range in thicknesses from 10 to 20 mm (for e.motion® UC, FP and size 2+3 PS) and up to 24 mm (for size 4 - 8 e.motion® PS).
- The same e.motion® trials are used for the trial reduction of the right and left knee. The main and upper part of the trials design corresponds to the final design together with the complementary plates the desired height of the trials are obtained. Through the complementary plate the medialized rotation center can be simulated. The R and L on the bottom side after connecting the complementary plate to the main trial part indicates for what joint side the connection is appropriated.
- 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 gliding surface is tested.
- The range of motion is assessed. Intra-operative limited extension and flexion and marked hyperextension must be avoided.

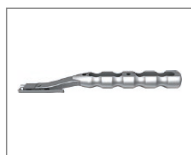


NOTE

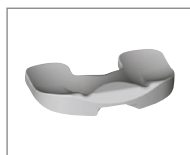
In case tibia augments have been prepared, they need to be added to the tibia plateau (see page 26).



Tibia trial/preparation plateau NS532R-NS538R



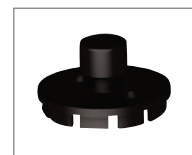
Tibia trial/prep. plateau holder NQ378R



Trial gliding surface



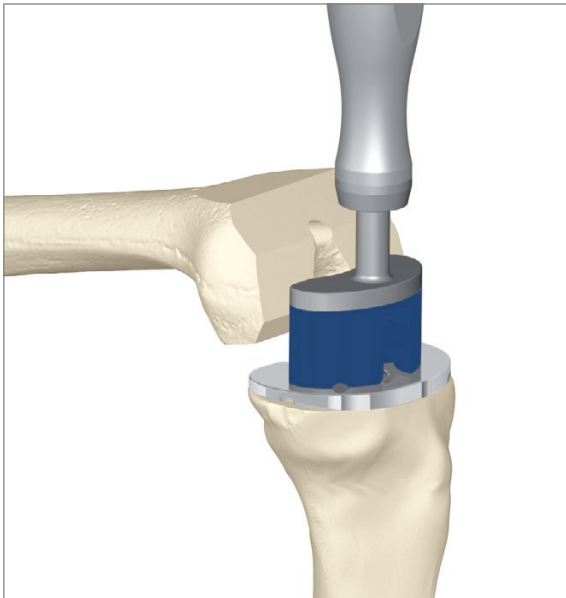
Trial spacer NS675-NS697



Trial rotation peg NS541P-NS543P

AESCULAP® e.motion® System

13 | COMPONENT IMPLANTATION



The following implant sequence is recommended:

- Tibia implant
- Femur implant
- Meniscal component
- Patella implant
- The final tibia implant is brought precisely into the predefined position. The final positioning is achieved with the help of the tibia impactor. In case of the implantation of e.motion® UC or PS the rotation peg corresponding to the height of 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.

Option: The rotation peg can also be assembled to the tibia implant after the cement has cured.

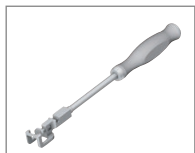
NOTE

In case of use of an FP version, the meniscal component has to be placed over the fixation hug before the impactation of the final femur implant.

IF an opturator is used, it should be fixed with the key NP731R (10 and 12 mm) or NP732R (14 and 16 mm).



INSTRUMENTS



Counter torque for stem fixation NS570R



Tibia plateau impactor NS425



Tibia implant

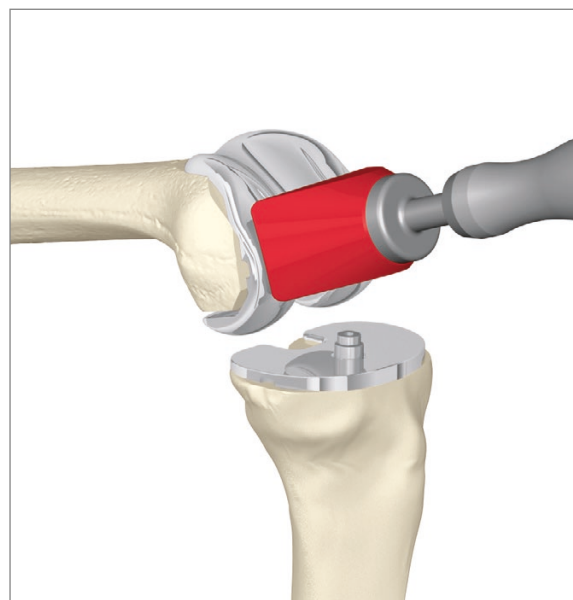
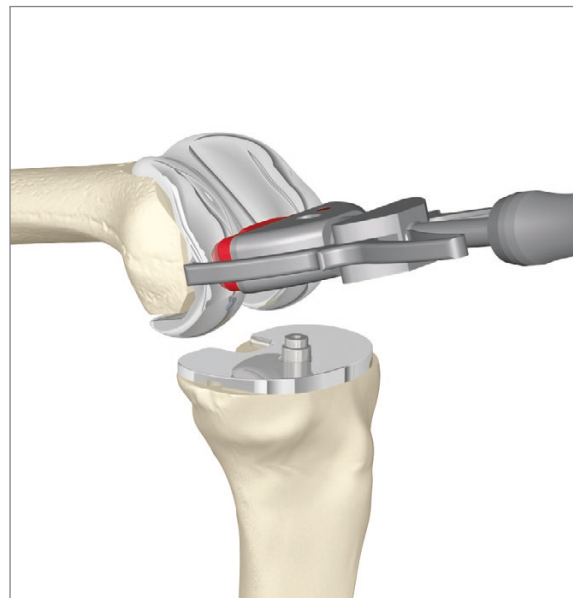


Torque wrench NE160R

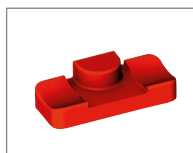


Adapter for torque wrench NQ658R

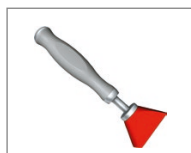
- Using the femur holder and the insert of the corresponding size group, the final femur implant is brought into alignment and implanted. Care must be taken to assure the holder is properly seated and attached to the femoral implant so that it does not dislodge during cementing. A special attention has to be placed 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.



Implant holding/insertion instrument NS600R



Femur insert to NS600R, NS601-NS603



Femur impactor NS424



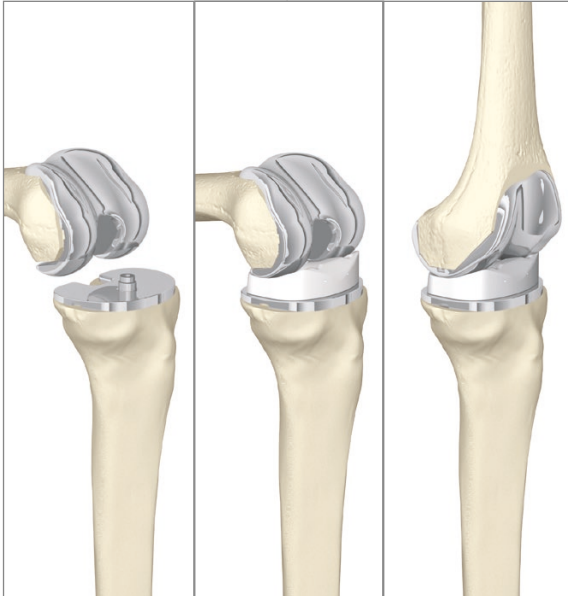
Femur implant



Trial rotation peg NS540P

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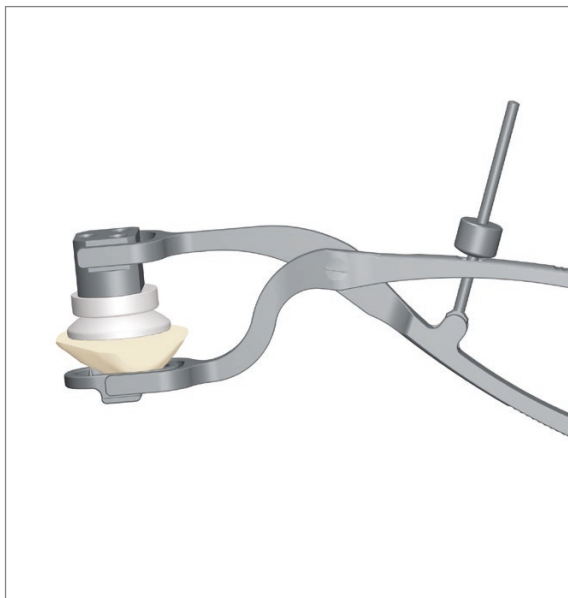
13 | COMPONENT IMPLANTATION



- The meniscal component is placed over the rotation peg (UC and PS) or fixation hug (FP).

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 polyethylene insert. Therefore the trial rotation peg (NS540P) is screwed into the final tibia implant.



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

INSTRUMENTS



Gliding surface



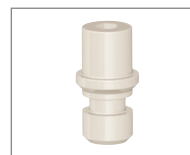
Patella drill/impaction clamp NS841R



Inlay for NS841R, NS842



Patella implant



Trial rotation peg NS540P

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.

15 | CLOSURE

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.



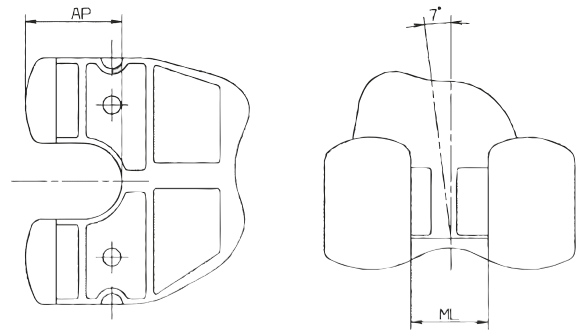
AESFULAP[®] e.motion[®] System

16 | IMPLANT DIMENSIONS

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

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

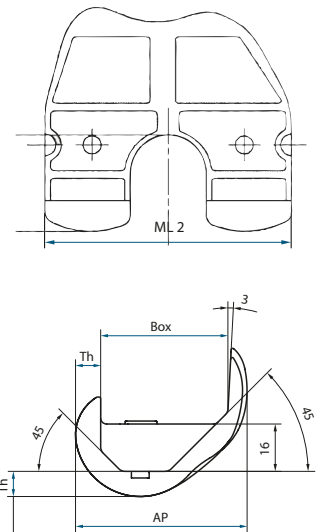


FEMORAL COMPONENT

The table gives an overview on the most important dimensions of the e.motion[®] femoral implants

Measurements in mm

Size	ML2	AP	Box	Th	Trochlear Depth
F2	56	50	37	7	4
F3	60	54	40	7	4,5
F4	64	58	43	8,5	4,5
F4 N	60	58	43	8,5	4,5
F5	68	62	46	8,5	5
F5 N	64	62	46	8,5	5
F6	72	66	49	8,5	5
F6 N	68	66	49	8,5	5
F7	76	70	52	10	5,5
F8	80	74	55	10	6

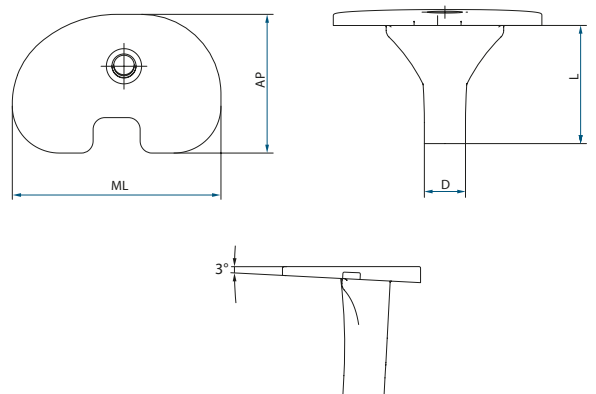


TIBIAL COMPONENT

The table gives an overview on the most important dimensions of the e.motion[®] tibial implants

Measurements in mm

Size	ML	AP	AP/ML	L	D
T2	63	41	0,65	40	12
T3	67	44	0,66	40	12
T4	71	47	0,66	45	14
T5	75	50	0,67	45	14
T6	79	53	0,67	45	14
T7	83	56	0,67	50	16
T8	87	59	0,68	50	16

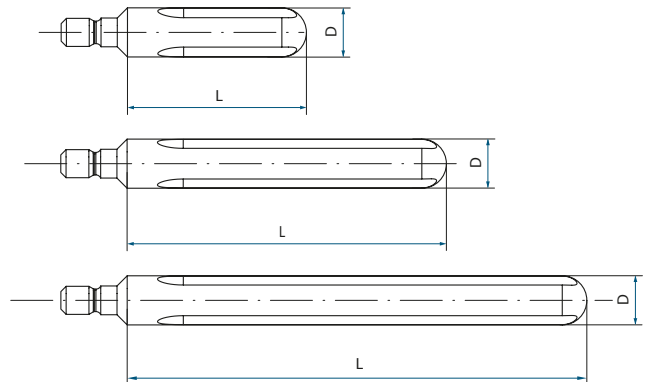


TIBIA EXTENSION STEM

The table gives an overview on the most important dimensions of the e.motion® tibia extension stems

Measurements in mm

Size	L	D
Short	52	10, 12, 14, 16
Middle	92	10, 12, 14, 16
Long	132	10, 12, 14, 16

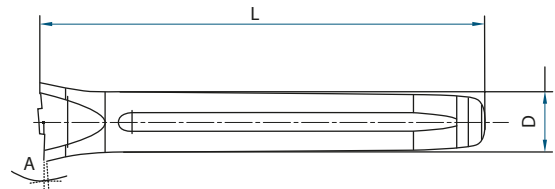


FEMUR EXTENSION STEM

The table gives an overview on the most important dimensions of the e.motion® femur extension stems

Measurements in mm

Valgus Angle	Size	L	D
5°	Short	77	14, 16, 18, 20
	Middle	117	14, 16, 18, 20
	Long	157	14, 16, 18, 20
7°	Short	77	14, 16, 18, 20
	Middle	117	14, 16, 18, 20
	Long	157	14, 16, 18, 20

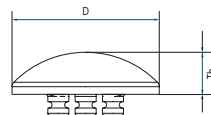


PATELLA COMPONENT

The table gives an overview on the most important dimensions of the e.motion® patella implants

Measurements in mm

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



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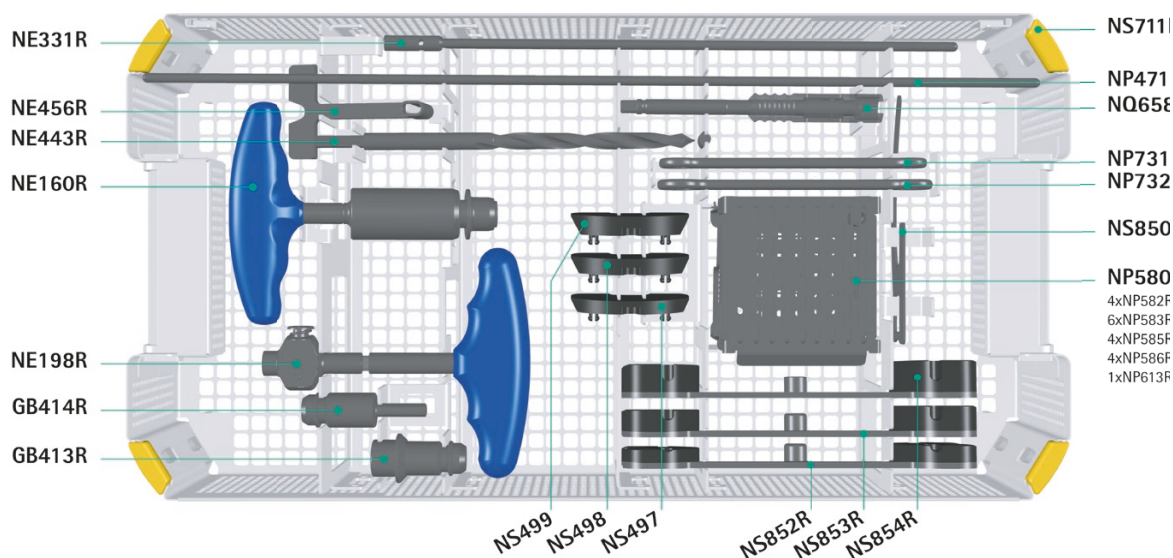
17 | INSTRUMENTS



Item No.	Description	
NS700	IQ e.motion® Instrumentation Basic	
NS701	IQ e.motion® Set General Instruments	
NS702	IQ e.motion® Set Tibia Instruments	
NS703	IQ e.motion® Set Femoral Preparation	
NS705	IQ e.motion® Set Tibia Preparation and UC Trial Meniscal Components	
NS706	IQ e.motion® Set Femur Trial Implants	
NS704	IQ e.motion® Set FP Trial Meniscal Components	
NS707	IQ e.motion® Additional Instruments PS	
NS708	IQ e.motion® Set Tibia Extension Stems	
NS709	IQ Set Patella Preparation	
NP138	IQ Set Navigation Instruments	
NS730	IQ e.motion® Set PS Trial Meniscal Components	
NS908	IQ e.motion® FP/UC Femur Trial Implants incl. Narrow Sizes (like NS706 but incl. Gr. 4, 5, 6 – Narrow)	
NS910	IQ e.motion® Set Tibia-Augments	
X-ray Templates		
NE398	FP/UC/PS/UC Pro Femur – FP/UC/PS Tibia – Revision – e.motion® Stems	1,10:1
NE399	FP/UC/PS/UC Pro Femur – FP/UC/PS Tibia – Revision – e.motion® Stems	1,15:1

NS701 | GENERAL INSTRUMENTS

Qty.	Item No.	Description	Qty.	Item No.	Description
1	NS716R	Tray general instruments	1	NE331R	Target rod with sleeve
1	NS497	Complementary spacer 7,0 mm	1	NE456R	Check plate for cutting guides
1	NS498	Complementary spacer 8,5 mm	1	NE443R	IM-Drill, Ø 9 x 200 mm
1	NS499	Complementary spacer 10,0 mm	1	NE198R	T-Handle, navigiert
4	NP582R	Headless Pins 3,2 x 38 mm	1	NS852R	Spacer 10+12 mm
6	NP583R	Headless Pins 3,2 x 63 mm	1	NS853R	Spacer 14+16 mm
4	NP585R	Headed Pins 3,2 x 30 mm	1	NS854R	Spacer 18+20 mm
4	NP586R	Headed Pins 3,2 x 50 mm	1	NE160R	Torque wrench 10 Nm with T-handle
1	NP613R	Pin Driver	1	NQ658R	Torque wrench adapter SW 3,5
1	GB413R	Acculan II hexagonal Chuck	1	NP731R	Stem tightening key Ø 10+12 mm
1	GB414R	Chuck adapter	1	NP732R	Stem tightening key Ø 14+16 mm
1	NS850R	Cutting depth control plate	1	TF061	Graphic Template for NS701
1	NP471R	Target rod, long			

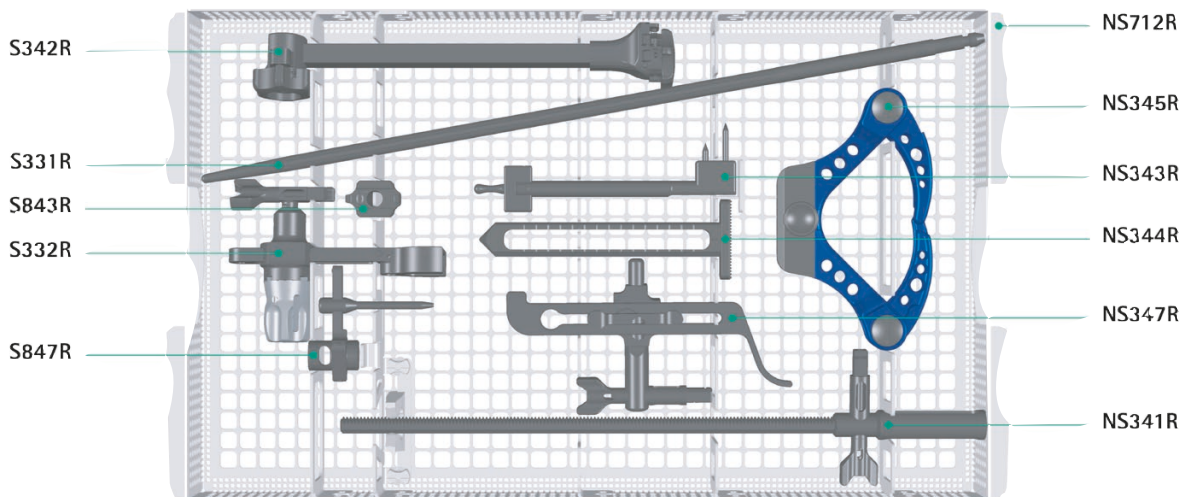


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NS702 | TIBIA INSTRUMENTS

Qty.	Item No.	Description
1	NS712R	Tray tibia instruments
1	NS341R	Holding rod for tibial cutting guide
1	NS342R	Tibia alignment system handle
1	NS343R	Tibia alignment proximal fixation
1	NS344R	Tibia alignment bimalleolar clamp support
1	NS345R	Tibia alignment bimalleolar clamp

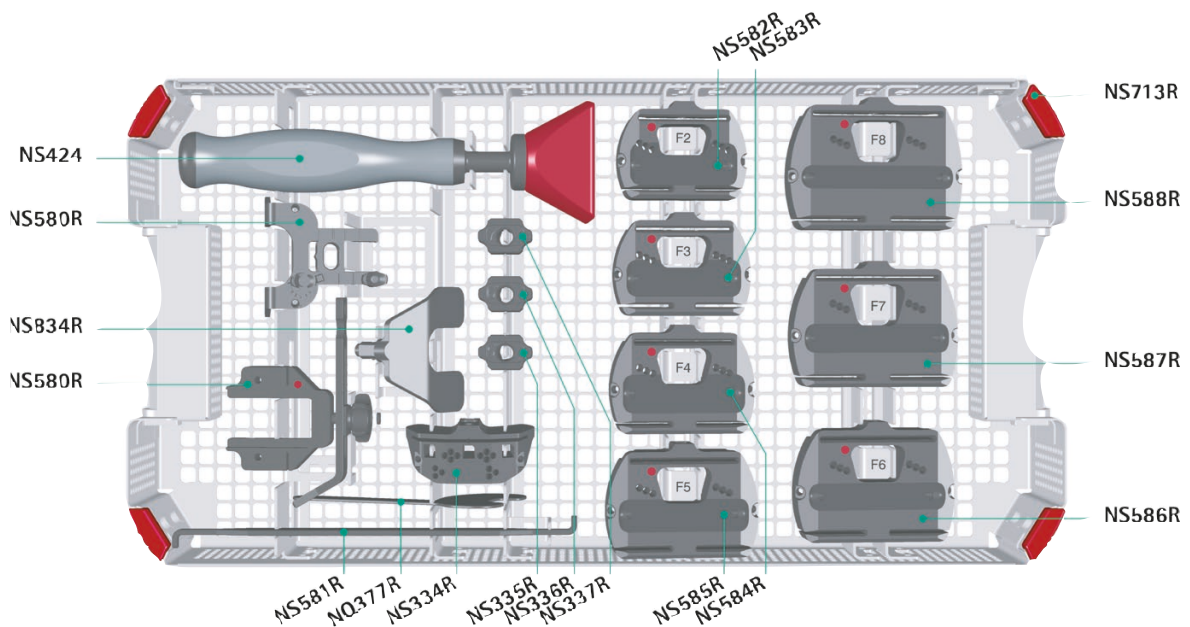
Qty.	Item No.	Description
1	NS347R	Tibia stylus
1	NS843R	Tibia IM orientation sleeve 0°
1	NS847R	Tibia IM stylus for orientation sleeve
1	NS331R	IM alignment rod Ø 8 mm
1	NS332R	IM alignment system
1	TF062	Graphic Template for NS702



NS703 | FEMUR PREPARATION

Qty.	Item No.	Description
1	NS713R	Tray femur preparation
1	NS580R	Sizing/alignment instrument
1	NS582R	4-in-1 femur cutting guide F2
1	NS583R	4-in-1 femur cutting guide F3
1	NS584R	4-in-1 femur cutting guide F4
1	NS585R	4-in-1 femur cutting guide F5
1	NS586R	4-in-1 femur cutting guide F6
1	NS587R	4-in-1 femur cutting guide F7
1	NS588R	4-in-1 femur cutting guide F8

Qty.	Item No.	Description
1	NS581R	ML femoral size gauge
1	NQ377R	Protection plate
1	NS424	Impactor
1	NS334R	Tibio-distal cutting guide
1	NS834R	Distal femur contact plate
1	NS335R	Angle insert 5° for adjustment device
1	NS336R	Angle insert 6° for adjustment device
1	NS337R	Angle insert 7° for adjustment device
1	TF063	Graphic template for NS703

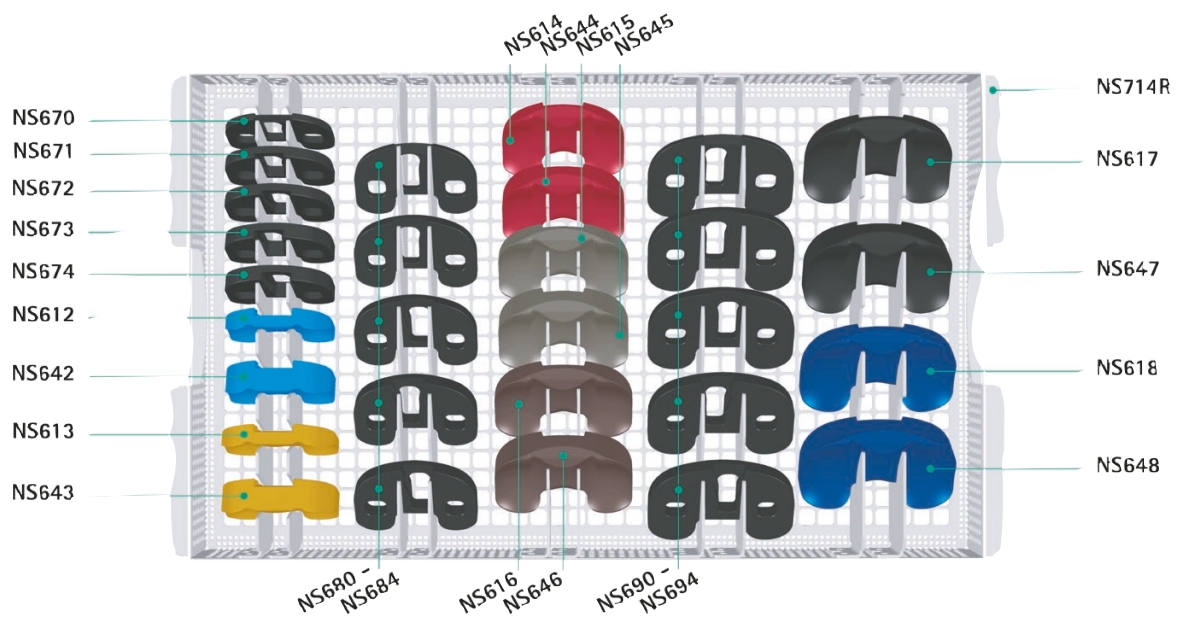


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NS704 | FP TRIAL MENISCAL COMPONENTS

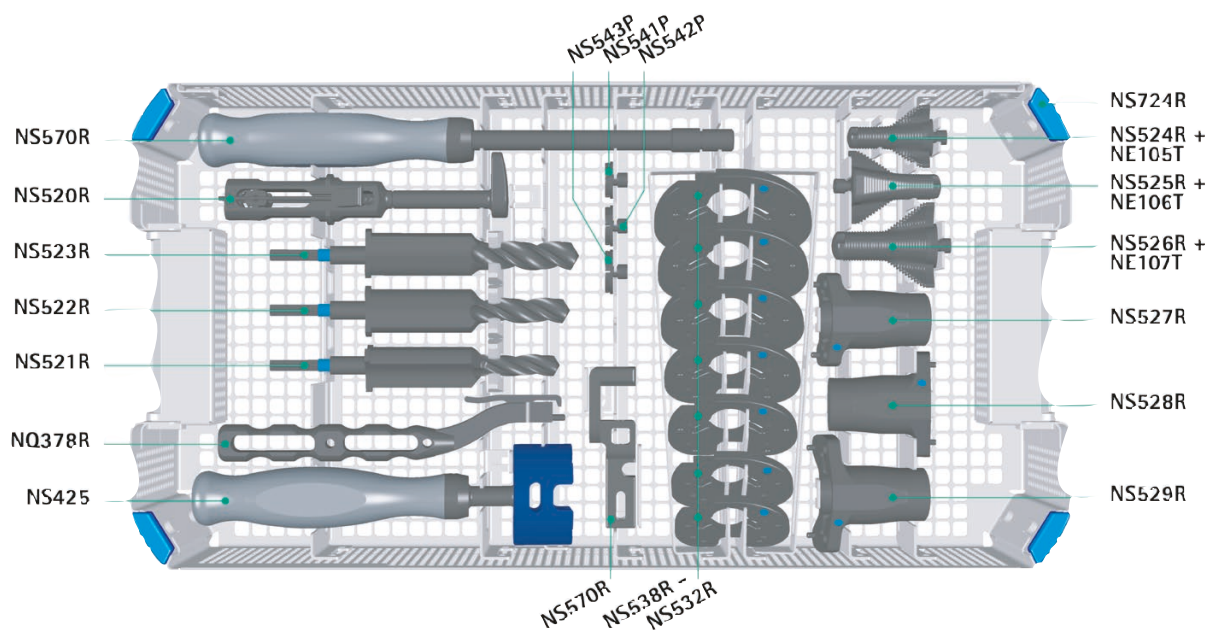
Qty.	Item No.	Description
1	NS714R	Tray FP trial meniscal components
1	NS612	FP trial meniscal comp F2 - 6 mm
1	NS642	FP trial meniscal comp F2 - 12 mm
1	NS613	FP trial meniscal comp F3 - 6 mm
1	NS643	FP trial meniscal comp F3 - 12 mm
1	NS614	FP trial meniscal comp F4 - 6 mm
1	NS644	FP trial meniscal comp F4 - 12 mm
1	NS615	FP trial meniscal comp F5 - 6 mm
1	NS645	FP trial meniscal comp F5 - 12 mm
1	NS616	FP trial meniscal comp F6 - 6 mm
1	NS646	FP trial meniscal comp F6 - 12 mm
1	NS617	FP trial meniscal comp F7 - 6 mm
1	NS647	FP trial meniscal comp F7 - 12 mm
1	NS618	FP trial meniscal comp F8 - 6 mm
1	NS648	FP trial meniscal comp F8 - 12 mm
1	NS670	FP complement plate sz 1 (S) - 4 mm

Qty.	Item No.	Description
1	NS672	FP complement plate sz 1 (S) R - 6 mm
1	NS671	FP complement plate sz 1 (S) L - 6 mm
1	NS674	FP complement plate sz 1 (S) R - 8 mm
1	NS673	FP complement plate sz 1 (S) L - 8 mm
1	NS680	FP complement plate sz 2 (M) - 4 mm
1	NS682	FP complement plate sz 2 (M) R - 6 mm
1	NS681	FP complement plate sz 2 (M) L - 6 mm
1	NS684	FP complement plate sz 2 (M) R - 8 mm
1	NS683	FP complement plate sz 2 (M) L - 8 mm
1	NS690	FP complement plate sz 3 (L) - 4 mm
1	NS692	FP complement plate sz 3 (L) R - 6 mm
1	NS691	FP complement plate sz 3 (L) L - 6 mm
1	NS694	FP complement plate sz 3 (L) R - 8 mm
1	NS693	FP complement plate sz 3 (L) L - 8 mm
1	TF064	Graphic template for NS704



NS705 | TIBIA PREPARATION AND UC TRIAL MENISCAL COMPONENTS

Qty.	Item No.	Description	Qty.	Item No.	Description
1	NS724R	Tray tibia preparation	1	NS535R	Tibia preparation plateau T5
1	NS520R	Impactor/extractor handle	1	NS536R	Tibia preparation plateau T6
1	NS521R	Primary drill Ø 12 mm	1	NS537R	Tibia preparation plateau T7
1	NS522R	Primary drill Ø 14 mm	1	NS538R	Tibia preparation plateau T8
1	NS523R	Primary drill Ø 16 mm	1	NS541P	Rotating peg for prep. plateau T1/T2/T3
1	NS524R	Tibial broach T1/T2/T3	1	NS542P	Rotating peg for prep. plateau T4/T5/T6
1	NS525R	Tibial broach T4/T5/T6	1	NS543P	Rotating peg for prep. plateau T7/T8
1	NS526R	Tibial broach T7/T8	1	NS570R	Tibia counter torque
1	NS527R	Center. sleeve for tibial broach T1/T2/T3	1	NS425	Impactor
1	NS528R	Center. sleeve for tibial broach T4/T5/T6	1	NQ378R	Holder for preparation plateau
1	NS529R	Center. sleeve for tibial broach T7/T8	1	NE105T	Trial obturator 12 mm
1	NS532R	Tibia preparation plateau T2	1	NE106T	Trial obturator 14 mm
1	NS533R	Tibia preparation plateau T3	1	NE107T	Trial obturator 16 mm
1	NS534R	Tibia preparation plateau T4	1	TF065	Graphic template for NS705

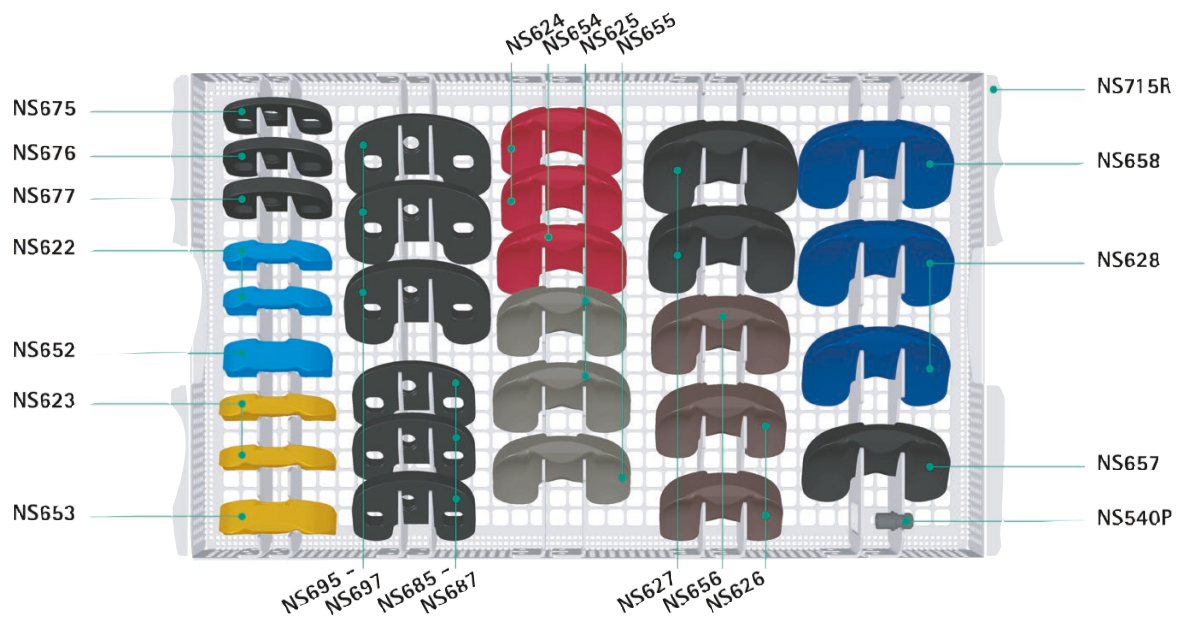


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NS705 | TIBIA PREPARATION AND UC TRIAL MENISCAL COMPONENTS

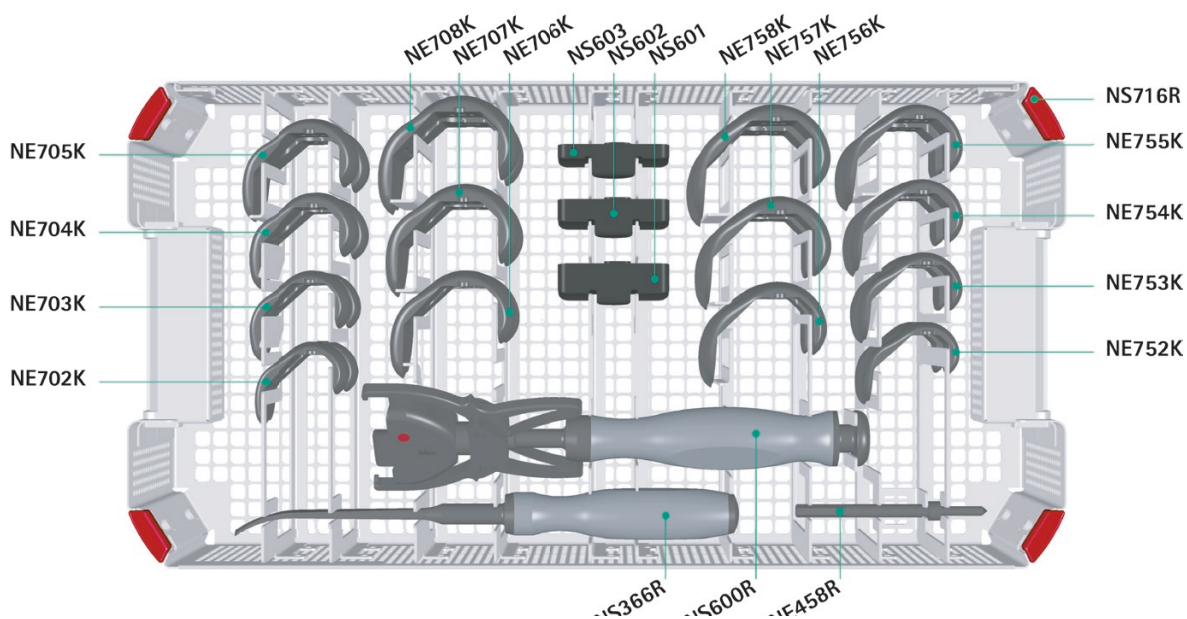
Qty.	Item No.	Description
1	NS715R	Tray UC trial meniscal components
2	NS622	UC trial meniscal comp F2 - 6 mm
1	NS652	UC trial meniscal comp F2 - 12 mm
2	NS623	UC trial meniscal comp F3 - 6 mm
1	NS653	UC trial meniscal comp F3 - 12 mm
2	NS624	UC trial meniscal comp F4 - 6 mm
1	NS654	UC trial meniscal comp F4 - 12 mm
2	NS625	UC trial meniscal comp F5 - 6 mm
1	NS655	UC trial meniscal comp F5 - 12 mm
2	NS626	UC trial meniscal comp F6 - 6 mm
1	NS656	UC trial meniscal comp F6 - 12 mm
2	NS627	UC trial meniscal comp F7 - 6 mm
1	NS657	UC trial meniscal comp F7 - 12 mm

Qty.	Item No.	Description
2	NS628	UC trial meniscal comp F8 - 6 mm
1	NS658	UC trial meniscal comp F8 - 12 mm
1	NS675	PS/UC complement plate sz 1 (S) - 4 mm
1	NS676	PS/UC complement plate sz 1 (S) - 6 mm
1	NS677	PS/UC complement plate sz 1 (S) - 8 mm
1	NS685	PS/UC complement plate sz 2 (M) - 4 mm
1	NS686	PS/UC complement plate sz 2 (M) - 6 mm
1	NS687	PS/UC complement plate sz 2 (M) - 8 mm
1	NS695	PS/UC complement plate sz 3 (L) - 4 mm
1	NS696	PS/UC complement plate sz 3 (L) - 6 mm
1	NS697	PS/UC complement plate sz 3 (L) - 8 mm
1	NS540P	Trial plug UC/PS



NS706 | FEMUR TRIAL IMPLANTS W/O NARROW FEMUR TRIALS

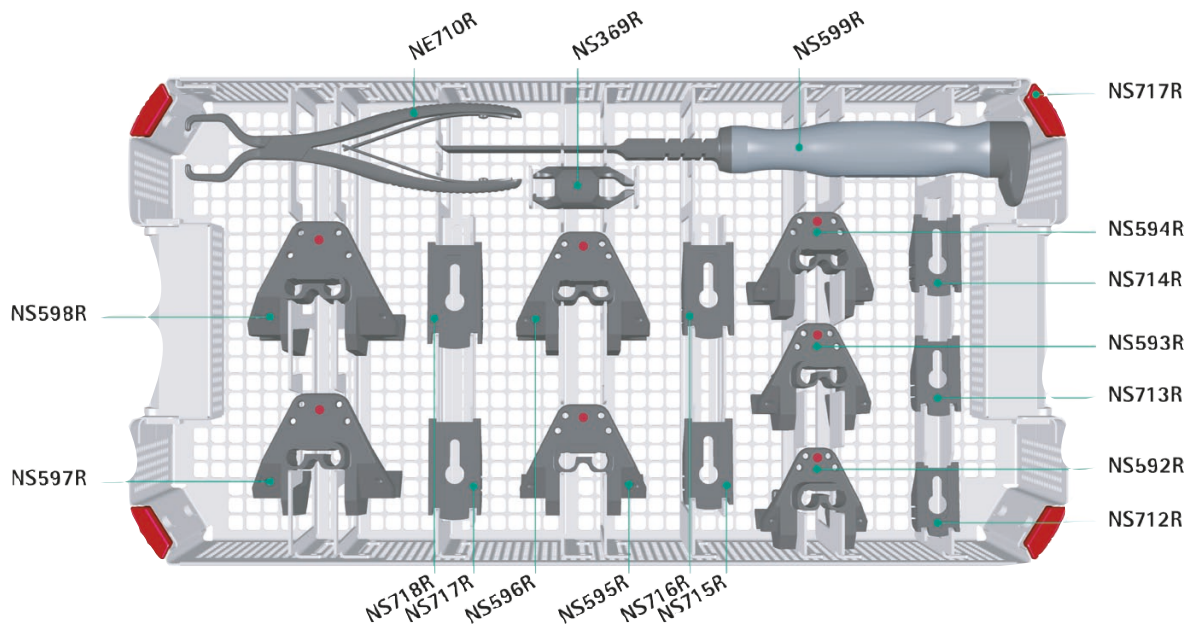
Qty.	Item No.	Description	Qty.	Item No.	Description
1	NS716R	Tray trial components femur	1	NE705K	Femoral trial implant F5 L
1	NS600R	Implant holding/insertion instrument	1	NE755K	Femoral trial implant F5 R
1	NS601	Insert for femur F2/F3 for NS600R	1	NE706K	Femoral trial implant F6 L
1	NS602	Insert for femur F4/F5/F6 for NS600R	1	NE756K	Femoral trial implant F6 R
1	NS603	Insert for femur F7/F8 for NS600R	1	NE707K	Femoral trial implant F7 L
1	NE702K	Femoral trial implant F2 L	1	NE757K	Femoral trial implant F7 R
1	NE752K	Femoral trial implant F2 R	1	NE708K	Femoral trial implant F8 L
1	NE703K	Femoral trial implant F3 L	1	NE758K	Femoral trial implant F8 R
1	NE753K	Femoral trial implant F3 R	1	NS366R	Chisel for posterior condyles
1	NE704K	Femoral trial implant F4 L	1	NE458R	Drill Ø 5 x 25
1	NE754K	Femoral trial implant F4 R	1	TF066	Graphic template for NS706



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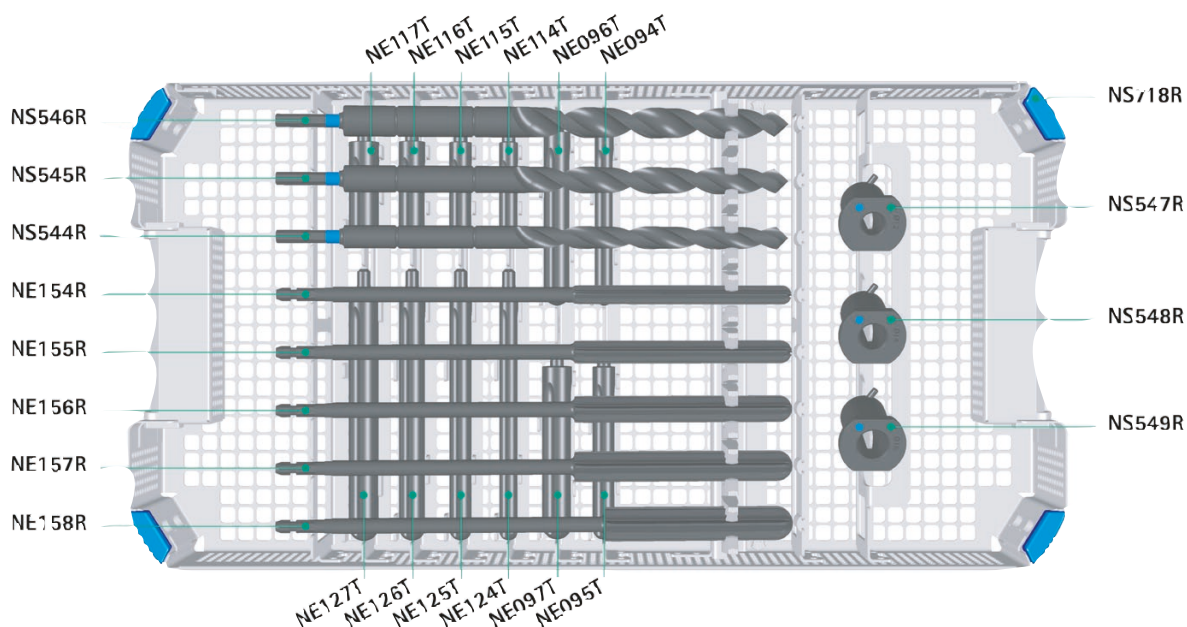
NS707 | ADDITIONAL INSTRUMENTS PS

Qty.	Item No.	Description	Qty.	Item No.	Description
1	NS717R	Tray femur box preparation	1	NE713R	Click box F3
1	NS592R	Box preparation guide F2	1	NE714R	Click box F4
1	NS593R	Box preparation guide F3	1	NE715R	Click box F5
1	NS594R	Box preparation guide F4	1	NE716R	Click box F6
1	NS595R	Box preparation guide F5	1	NE717R	Click box F7
1	NS596R	Box preparation guide F6	1	NE718R	Click box F8
1	NS597R	Box preparation guide F7	1	NE710R	Click box holder
1	NS598R	Box preparation guide F8	1	NS369R	Stop for box preparation chisel
1	NS599R	Box preparation chisel	1	TF067	Graphic template for NS707
1	NE712R	Click box F2			



NS708 | TIBIA EXTENSION STEMS

Qty.	Item No.	Description	Qty.	Item No.	Description
1	NS718R	Tray tibia extension stems	1	NE116T	Trial extension stem Ø 14, 52 mm (S)
1	NS544R	Drill D 12 mm for extension stem 52/92	1	NE096T	Trial extension stem Ø 14, 92 mm (M)
1	NS545R	Drill D 14 mm for extension stem 52/92	1	NE126T	Trial extension stem Ø 14, 132 mm (L)
1	NS546R	Drill D 16 mm for extension stem 52/92	1	NE117T	Trial extension stem Ø 16, 52 mm (S)
1	NS547R	Tibia drill sleeve D 12 mm	1	NE097T	Trial extension stem Ø 16, 92 mm (M)
1	NS548R	Tibia drill sleeve D 14 mm	1	NE127T	Trial extension stem Ø 16, 132 mm (L)
1	NS549R	Tibia drill sleeve D 16 mm	1	NE154R	Reamer Ø 10 mm
1	NE114T	Trial extension stem Ø 10, 52 mm (S)	1	NE155R	Reamer Ø 12 mm
1	NE094T	Trial extension stem Ø 10, 92 mm (M)	1	NE156R	Reamer Ø 14 mm
1	NE124T	Trial extension stem Ø 10, 132 mm (L)	1	NE157R	Reamer Ø 16 mm
1	NE115T	Trial extension stem Ø 12, 52 mm (S)	1	NE158R	Reamer Ø 18 mm
1	NE095T	Trial extension stem Ø 12, 92 mm (M)	1	TF068	Graphic template for NS708
1	NE125T	Trial extension stem Ø 12, 132 mm (L)			

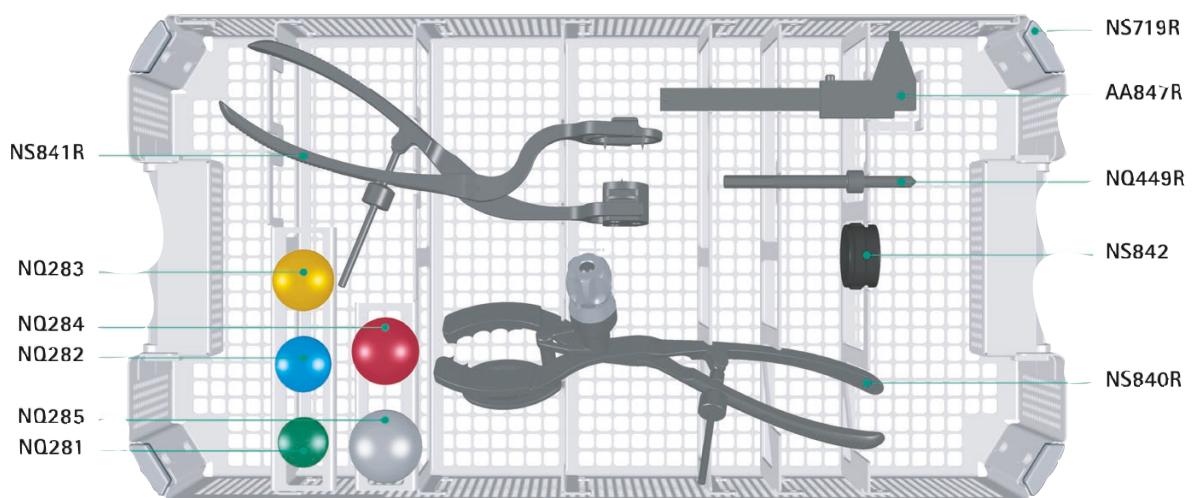


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NS709 | PATELLA PREPARATION

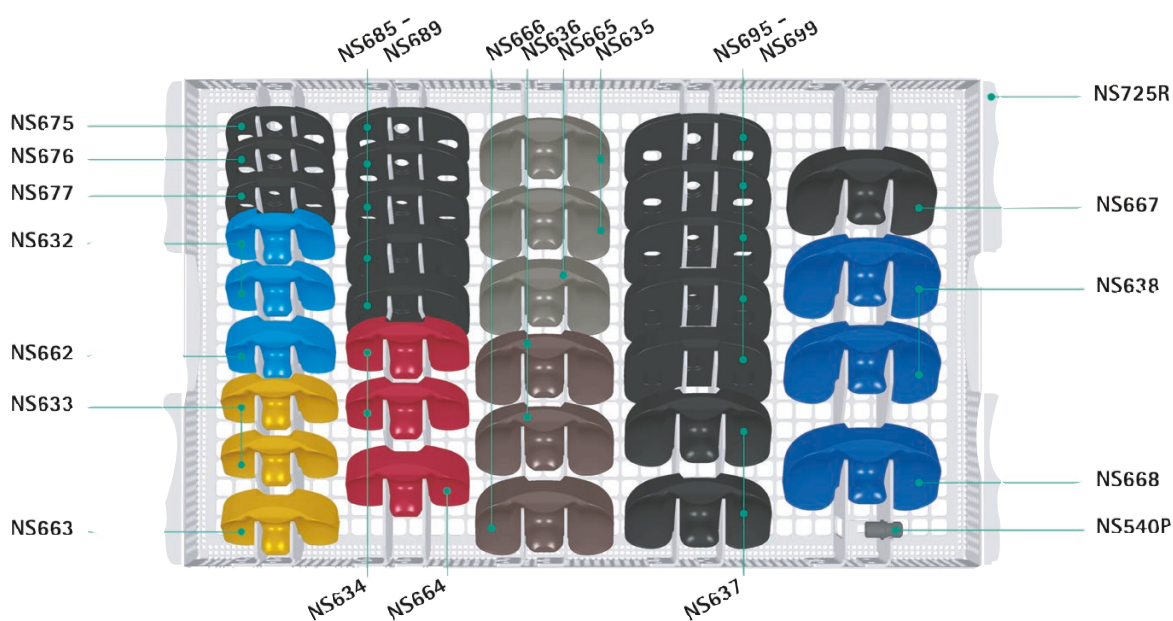
Qty.	Item No.	Description
1	NS719R	Tray patella preparation
1	NS840R	Patella resection clamp
1	NS841R	Patella drilling and impacting clamp
1	NS842	Insert for NS841R
1	AA847R	Caliper
1	NQ281	Trial patella 3 pegs P1 Ø 26 x 7 mm

Qty.	Item No.	Description
1	NQ282	Trial patella 3 pegs P2 Ø 29 x 8 mm
1	NQ283	Trial patella 3 pegs P3 Ø 32 x 9 mm
1	NQ284	Trial patella 3 pegs P4 Ø 35 x 10 mm
1	NQ285	Trial patella 3 pegs P5 Ø 38 x 11 mm
1	NQ449R	Drill with stop Ø 6 x 28 mm
1	TF069	Graphic template for NS709



NS730 | PS TRIAL MENISCAL COMPONENTS

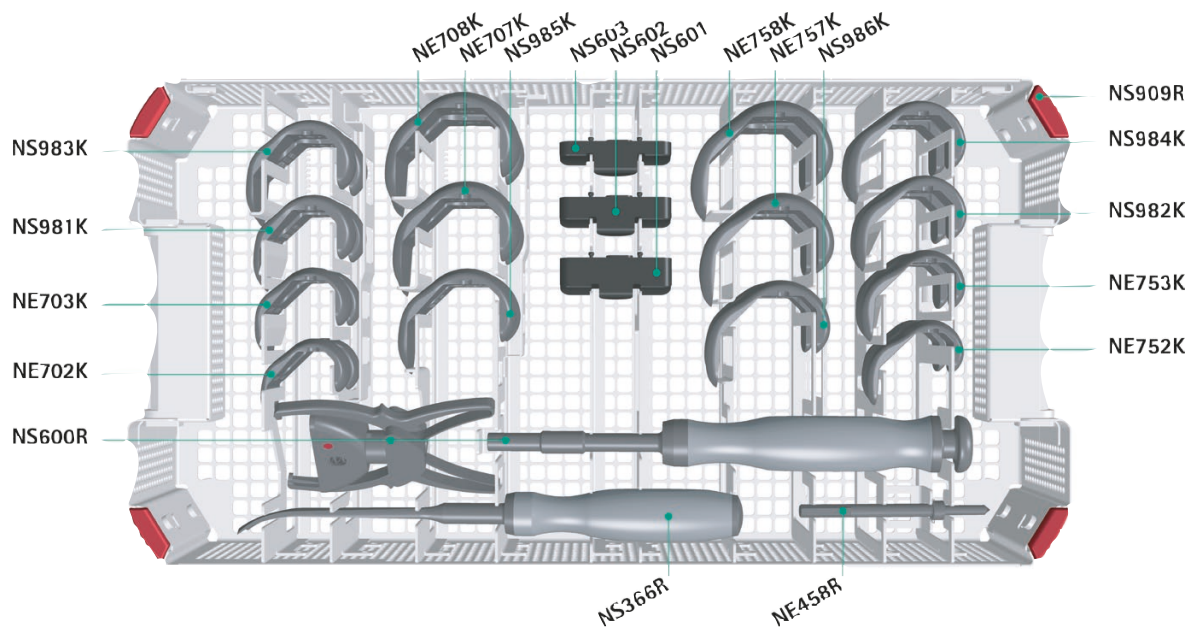
Qty.	Item No.	Description	Qty.	Item No.	Description
1	NS678R	General Tray for insert NS725R	1	NS675	PS/UC complement plate sz 1 (S) - 4 mm
1	NS725R	Tray PS trial meniscal components	1	NS676	PS/UC complement plate sz 1 (S) - 6 mm
2	NS632	PS trial meniscal comp F2 - 6 mm	1	NS677	PS/UC complement plate sz 1 (S) - 8 mm
1	NS662	PS trial meniscal comp F2 - 12 mm	1	NS685	PS/UC complement plate sz 2 (M) - 4 mm
2	NS633	PS trial meniscal comp F3 - 6 mm	1	NS686	PS/UC complement plate sz 2 (M) - 6 mm
1	NS663	PS trial meniscal comp F3 - 12 mm	1	NS687	PS/UC complement plate sz 2 (M) - 8 mm
2	NS634	PS trial meniscal comp F4 - 6 mm	1	NS688	PS complement plate sz 2 (M) - 10 mm
1	NS664	PS trial meniscal comp F4 - 12 mm	1	NS689	PS complement plate sz 2 (M) - 12 mm
2	NS635	PS trial meniscal comp F5 - 6 mm	1	NS695	PS/UC complement plate sz 3 (L) - 4 mm
1	NS665	PS trial meniscal comp F5 - 12 mm	1	NS696	PS/UC complement plate sz 3 (L) - 6 mm
2	NS636	PS trial meniscal comp F6 - 6 mm	1	NS697	PS/UC complement plate sz 3 (L) - 8 mm
1	NS666	PS trial meniscal comp F6 - 12 mm	1	NS698	PS complement plate sz 3 (L) - 10 mm
2	NS637	PS trial meniscal comp F7 - 6 mm	1	NS699	PS complement plate sz 3 (L) - 12 mm
1	NS667	PS trial meniscal comp F7 - 12 mm	1	NS540P	UC/PS Trial rotation peg
2	NS638	PS trial meniscal comp F8 - 6 mm	1	TF071	Graphic template for NS730
1	NS668	PS trial meniscal comp F8 - 12 mm			



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NS908 | FEMUR TRIAL IMPLANTS W/ NARROW FEMUR TRIALS

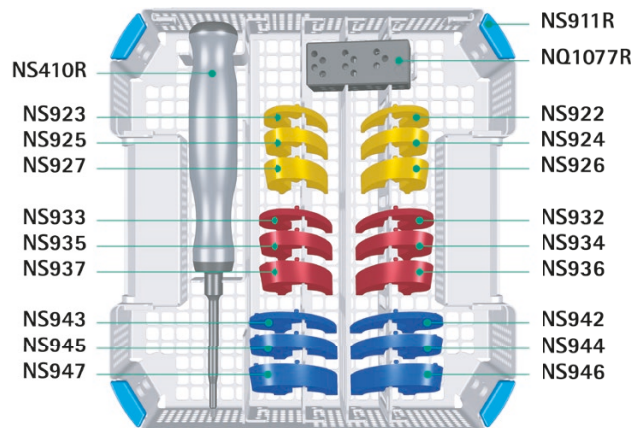
Qty.	Item No.	Description	Qty.	Item No.	Description
1	NS909R	Tray trial components femur	1	NS983K	Femoral trial implant F5N L
1	NS600R	Implant holding/insertion instrument	1	NS984K	Femoral trial implant F5N R
1	NS601	Insert for femur F2/F3 for NS600R	1	NS985K	Femoral trial implant F6N L
1	NS602	Insert for femur F4/F5/F6 for NS600R	1	NS986K	Femoral trial implant F6N R
1	NS603	Insert for femur F7/F8 for NS600R	1	NE707K	Femoral trial implant F7 L
1	NE702K	Femoral trial implant F2 L	1	NE757K	Femoral trial implant F7 R
1	NE752K	Femoral trial implant F2 R	1	NE708K	Femoral trial implant F8 L
1	NE703K	Femoral trial implant F3 L	1	NE758K	Femoral trial implant F8 R
1	NE753K	Femoral trial implant F3 R	1	NS366R	Chisel for posterior condyles
1	NS981K	Femoral trial implant F4N L	1	NE458R	Drill Ø 5 x 25
1	NS982K	Femoral trial implant F4N R	1	TF241	Graphic template for NS908



NS910 | TIBIA-AUGMENTS

Qty.	Item No.	Description
1	NS922	Trial Tibia-Augment T2-T3 RM-LL 4 mm
1	NS923	Trial Tibia-Augment T2-T3 RL-LM 4 mm
1	NS924	Trial Tibia-Augment T2-T3 RM-LL 8 mm
1	NS925	Trial Tibia-Augment T2-T3 RL-LM 8 mm
1	NS926	Trial Tibia-Augment T2-T3 RM-LL 12 mm
1	NS927	Trial Tibia-Augment T2-T3 RL-LM 12 mm
1	NS932	Trial Tibia-Augment T4-T6 RM-LL 4 mm
1	NS933	Trial Tibia-Augment T4-T6 RL-LM 4 mm
1	NS934	Trial Tibia-Augment T4-T6 RM-LL 8 mm
1	NS935	Trial Tibia-Augment T4-T6 RL-LM 8 mm
1	NS936	Trial Tibia-Augment T4-T6 RM-LL 12 mm
1	NS937	Trial Tibia-Augment T4-T6 RL-LM 12 mm

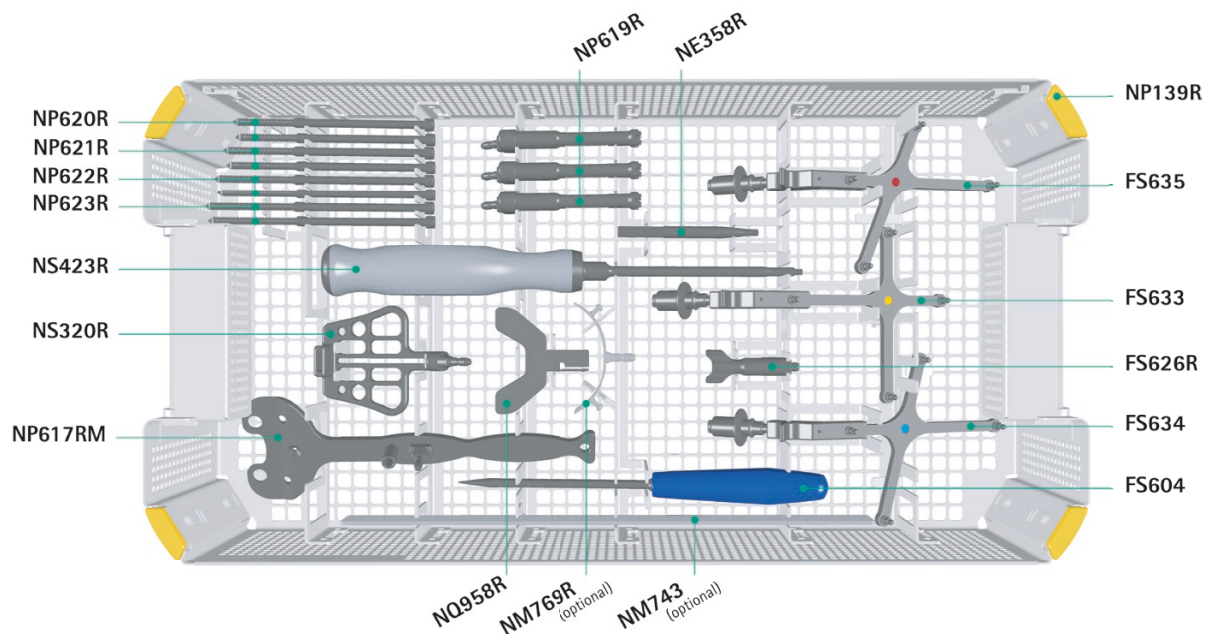
Qty.	Item No.	Description
1	NS942	Trial Tibia-Augment T7-T8 RM-LL 4 mm
1	NS943	Trial Tibia-Augment T7-T8 RL-LM 4 mm
1	NS944	Trial Tibia-Augment T7-T8 RM-LL 8 mm
1	NS945	Trial Tibia-Augment T7-T8 RL-LM 8 mm
1	NS946	Trial Tibia-Augment T7-T8 RM-LL 12 mm
1	NS947	Trial Tibia-Augment T7-T8 RL-LM 12 mm
1	NS410R	IQ Screw Driver SW 3,0
1	NQ1077R	IQ Move Block 4-8-12 mm
1	NS911R	Tray Tibia Augments
1	JA415R	Lid
1	TF211	Graphic template for NS910



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NP138 | NAVIGATION INSTRUMENTS - TRAY 1

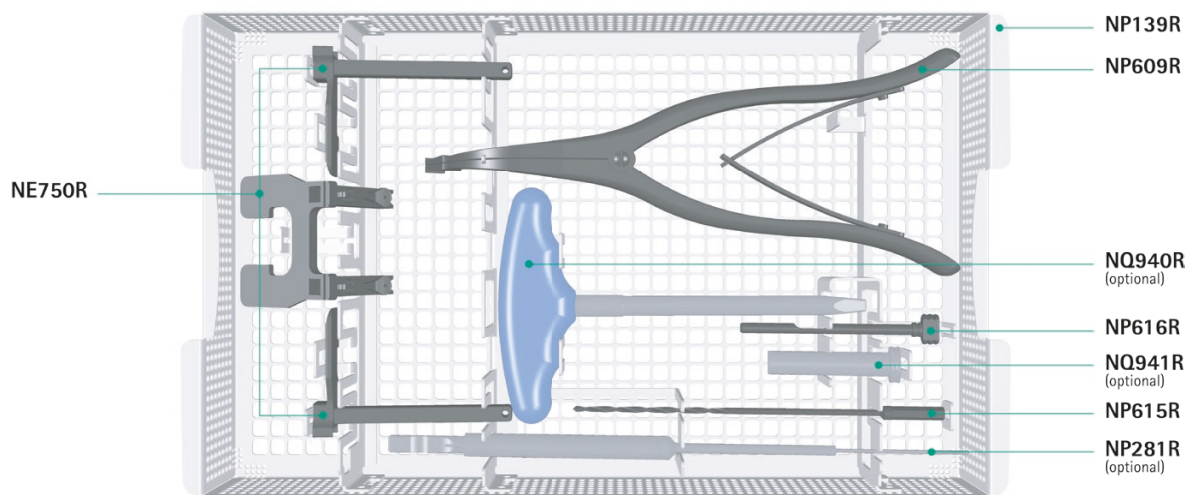
Qty.	Item No.	Description	Qty.	Item No.	Description
1	NP139R	Tray navigation instruments	2	NP620R	Bicortical screws, 30 mm
1	NP617RM	Tibial cut control plate	2	NP621R	Bicortical screws, 35 mm
1	FS604	Straight pointer	2	NP622R	Bicortical screws, 40 mm
1	FS633	Passive transmitter yellow	2	NP623R	Bicortical screws, 45 mm
1	FS634	Passive transmitter blue	1	FS626R	Modular Rigid-Body-Adapter
1	FS635	Passive transmitter red	1	NS320R	Navigated femur alignment block
1	NM769R	Footplate *	1	NQ958R	Footplate for alignment block
1	NM743	Elastic holding strap *	1	NS423R	Screw driver SW 3,5
3	NP619R	Screw sleeve with adapter	1	TF149	Graphic template for NP139R
1	NE358R	Screw driver with hex connection 3.5 mm	1	JA455R	Lid



* Optional: Has to be ordered separately!

NP138 | NAVIGATION INSTRUMENTS - TRAY 2

Qty.	Item No.	Description
1	NP615R	Drill Ø 3,2 mm
1	NP616R	Insertion aid, Ø 3,2 mm
1	NP281R	Screw length measuring device *
1	NQ941R	Soft-tissue protector for transmitter screw *
1	NQ940R	Handle for soft tissue protetor
1	NE750R	Distractor
1	NP609R	Spreader Foreceps



* Optional: Has to be ordered separately!

AESFULAP[®] e.motion[®] System

18 | OPTIONAL INSTRUMENTS



NP604R Femur-tibia gap measuring gauge



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



NS845R Tibia IM orientation sleeve 5°



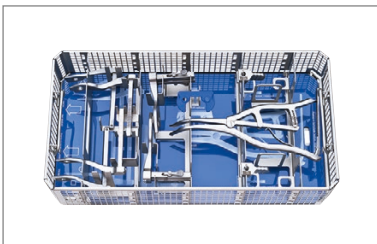
NP609R Gap distractor for NP604R



NS578R Femur orientation sleeve 8°



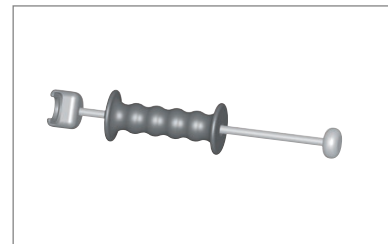
NS846R Tibia IM orientation sleeve 7°



NM640 Force controlled spreader set



NS579R Femur orientation sleeve 9°



NP684R Slap Hammer



NE150R Leg positioner for TKA
NE153R Fixation Frame


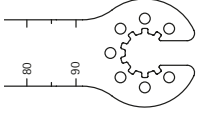
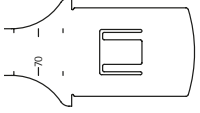
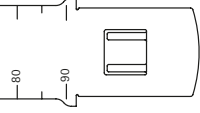
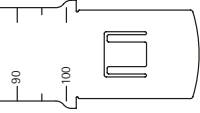
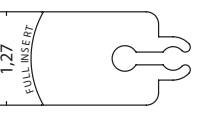
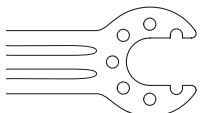



NS844R Tibia-IM-orientation sleeve 3°



NS863R EM-Tibia-Alignment system w/ pin fixation

19 | SAW BLADES

System	Item No.	Width	Thickness	Saw blades 
Aesculap® Comfort macro-Line Acculan Length 90 mm	GE266SU	13 mm	1,27 mm	
	GE271SU	19 mm	1,27 mm	
	GE276SU	23 mm	1,27 mm	
Aesculap® Acculan 3 Ti Length 75 mm	GE231SU	9 mm	1,27 mm	
Aesculap® Acculan 3 Ti Length 90 mm	GE236SU	13 mm	1,27 mm	
	GE241SU	19 mm	1,27 mm	
	GE246SU	23 mm	1,27 mm	
Aesculap® Acculan 3 Ti Length 100 mm	GE249SU	19 mm	1,27 mm	
Stryker System 2000, 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 Battery Power Line Length 90 mm	GE323SU	13 mm	1,27 mm	
Zimmer Universal Length 90 mm	GE326SU	25 mm	1,27 mm	
Conmed Linvatec/Hall Power Pro Mpower Mpower 2 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: 017599.

Saw blades for reciprocating saws 75/10/1,0/1,2 mm	Saw blade for reciprocating saws 75/12/1,0/1,2 mm
 GC769R	 GC771R



Postero-distal Femur Augments

Types:	F2	F3	F4	F5	F6	F7	F8
4 x 4 mm	NB302K	NB303K	NB304K	NB305K	NB306K	NB307K	NB308K
4 x 8 mm	NB312K	NB313K	NB314K	NB315K	NB316K	NB317K	NB318K
4 x 12 mm	--	--	NB340K	NB341K	NB342K	NB343K	NB344K
8 x 4 mm	NB322K	NB323K	NB324K	NB325K	NB326K	NB327K	NB328K
8 x 8 mm	NB332K	NB333K	NB334K	NB335K	NB336K	NB337K	NB338K
8 x 12 mm	--	--	NB350K	NB351K	NB352K	NB353K	NB354K
12 x 4 mm	--	--	NB359K	NB360K	NB361K	NB362K	NB363K
12 x 8 mm	--	--	NB364K	NB365K	NB366K	NB367K	NB368K
12 x 12 mm	--	--	NB394K	NB395K	NB396K	NB397K	NB398K



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 PS cemented

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 cemented

Types:	F2	F3	F4	F5	F6	F7	F8
Left	NB702K	NB703K	NB704K	NB705K	NB706K	NB707K	NB708K
Right	NB752K	NB753K	NB754K	NB755K	NB756K	NB757K	NB758K



Distal Femur Augments

Types:	F2	F3	F4	F5	F6	F7	F8
4 mm	NB282K	NB283K	NB284K	NB285K	NB286K	NB287K	NB288K
8 mm	NB292K	NB293K	NB294K	NB295K	NB296K	NB297K	NB298K
12 mm	--	--	NB274K	NB275K	NB276K	NB277K	NB278K



Tibia FP Monobloc cemented

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NO522K	NO523K	NO524K	NO525K	NO526K	NO527K	NO528K
Right	NO622K	NO623K	NO624K	NO625K	NO626K	NO627K	NO628K



Tibia FP Modular cemented

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB522K	NB523K	NB524K	NB525K	NB526K	NB527K	NB528K
Right	NB622K	NB623K	NB624K	NB625K	NB626K	NB627K	NB628K



Tibia UC/PS Modular cemented

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB732K	NB733K	NB734K	NB735K	NB736K	NB737K	NB738K
Right	NB782K	NB783K	NB784K	NB785K	NB786K	NB787K	NB788K



Tibia-Obturator

Type:	Ø 12	Ø 14	Ø 16
T1/T2/T3	NB105K	--	--
T4/T5/T6	--	NB106K	--
T7/T8	--	--	NB107K



PEEK Plug

Type:	Ø 14
	NN260P



Tibia FP Modular cementless

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB592K	NB593K	NB594K	NB595K	NB596K	NB597K	NB598K
Right	NB692K	NB693K	NB694K	NB695K	NB696K	NB697K	NB698K



Tibia UC/PS Modular cementless

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB742K	NB743K	NB744K	NB745K	NB746K	NB747K	NB748K
Right	NB792K	NB793K	NB794K	NB795K	NB796K	NB797K	NB798K



Tibia-Augments Medial

4 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB402K	NB403K	NB404K	NB405K	NB406K	NB407K	NB408K

8 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB422K	NB423K	NB424K	NB425K	NB426K	NB427K	NB428K
Right	NB432K	NB433K	NB434K	NB435K	NB436K	NB437K	NB438K

12 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB462K	NB463K	NB464K	NB465K	NB466K	NB467K	NB468K
Right	NB472K	NB473K	NB474K	NB475K	NB476K	NB477K	NB478K



Tibia-Augments Lateral

4 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB412K	NB413K	NB414K	NB415K	NB416K	NB417K	NB418K

8 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB442K	NB443K	NB444K	NB445K	NB446K	NB447K	NB448K
Right	NB452K	NB453K	NB454K	NB455K	NB456K	NB457K	NB458K

12 mm							
Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB482K	NB483K	NB484K	NB485K	NB486K	NB487K	NB488K
Right	NB492K	NB493K	NB494K	NB495K	NB496K	NB497K	NB498K

AS e.motion® Implant Matrix – Femoral Parts – Standard



Femur FP/UC cemented

Types:	F2	F3	F4	F4N	F5	5N4	F6	F6N	F7	F8
Left	N0502Z	N0503Z	N0504Z	N0817Z	N0505Z	N0818Z	N0506Z	N0819Z	N0507Z	N0508Z
Right	N0602Z	N0603Z	N0604Z	N0917Z	N0605Z	N0918Z	N0606Z	N0919Z	N0607Z	N0608Z



Distal Femur-Augments

Types:	F2	F3	F4	F5	F6	F7	F8
4 mm	NB282Z	NB283Z	NB284Z	NB285Z	NB286Z	NB287Z	NB288Z
8 mm	NB292Z	NB293Z	NB294Z	NB295Z	NB296Z	NB297Z	NB298Z
12 mm	12 mm Femur Augments not available in AS						



Postero-distal Femur-Augments

Types:	F2	F3	F4	F5	F6	F7	F8
4 x 4 mm	NB302Z	NB303Z	NB304Z	NB305Z	NB306Z	NB307Z	NB308Z
4 x 8 mm	NB312Z	NB313Z	NB314Z	NB315Z	NB316Z	NB317Z	NB318Z
4 x 12 mm	12 mm Femur-Augmente in AS nicht verfügbar						
8 x 4 mm	NB322Z	NB323Z	NB324Z	NB325Z	NB326Z	NB327Z	NB328Z
8 x 8 mm	NB332Z	NB333Z	NB334Z	NB335Z	NB336Z	NB337Z	NB338Z
8 x 12 mm	12 mm Femur-Augmente in AS nicht verfügbar						
12 x 4 mm	12 mm Femur-Augmente in AS nicht verfügbar						
12 x 8 mm	12 mm Femur-Augmente in AS nicht verfügbar						
12 x 12 mm	12 mm Femur-Augmente in AS nicht verfügbar						



Patella 3-Peg

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



Femur PS cemented

Types:	F2	F3	F4	F5	F6	F7	F8
Left	NB702Z	NB703Z	NB704Z	NB705Z	NB706Z	NB707Z	NB708Z
Right	NB752Z	NB753Z	NB754Z	NB755Z	NB756Z	NB757Z	NB758Z

AS e.motion® Implant Matrix – Tibial Parts – Standard



Tibia FP Modular cemented

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB522Z	NB523Z	NB524Z	NB525Z	NB526Z	NB527Z	NB528Z
Right	NB622Z	NB623Z	NB624Z	NB625Z	NB626Z	NB627Z	NB628Z



Tibia-Obturator

Type:	Ø 12	Ø 14	Ø 16
T1/T2/T3	NB105Z	--	--
T4/T5/T6	--	NB106Z	--
T7/T8	--	--	NB107Z



Tibia UC/PS Modular cemented

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB732Z	NB733Z	NB734Z	NB735Z	NB736Z	NB737Z	NB738Z
Right	NB782Z	NB783Z	NB784Z	NB785Z	NB786Z	NB787Z	NB788Z

AS e.motion® Implant Matrix – Tibial Parts – Standard



Rotation axis for meniscus components SW 3,5

Types:

Height mm	10	12	14	16	18	20	22	24
UC	NR900Z	NR910Z	NR920Z	NR930Z	NR940Z	NR950Z	--	--
PS	NB900Z	NB910Z	NB920Z	NB930Z	NB940Z	NB950Z	NB960Z	NB980Z



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



Tibia-Augments Medial

4 mm

Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB402Z	NB403Z	NB404Z	NB405Z	NB406Z	NB407Z	NB408Z

8 mm

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB422Z	NB423Z	NB424Z	NB425Z	NB426Z	NB427Z	NB428Z
Right	NB432Z	NB433Z	NB434Z	NB435Z	NB436Z	NB437Z	NB438Z

12 mm

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB462Z	NB463Z	NB464Z	NB465Z	NB466Z	NB467Z	NB468Z
Right	NB472Z	NB473Z	NB474Z	NB475Z	NB476Z	NB477Z	NB478Z



Tibia-Augments Lateral

4 mm

Types:	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB412Z	NB413Z	NB414Z	NB415Z	NB416Z	NB417Z	NB418Z

8 mm

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB442Z	NB443Z	NB444Z	NB445Z	NB446Z	NB447Z	NB448Z
Right	NB452Z	NB453Z	NB454Z	NB455Z	NB456Z	NB457Z	NB458Z

12 mm

Types:	T2	T3	T4	T5	T6	T7	T8
Left	NB482Z	NB483Z	NB484Z	NB485Z	NB486Z	NB487Z	NB488Z
Right	NB492Z	NB493Z	NB494Z	NB495Z	NB496Z	NB497Z	NB498Z

AS e.motion® Implant Matrix – Meniscus Components – Standard



Meniscus Components FP – Left

Type:	F2	F3	F4	F5	F6	F7	F8
10	NO542	NO543	NO544	NO545	NO546	NO547	NO548
12	NO552	NO553	NO554	NO555	NO556	NO557	NO558
14	NO562	NO563	NO564	NO565	NO566	NO567	NO568
16	NO572	NO573	NO574	NO575	NO576	NO577	NO578
18	--	--	--	--	--	--	--
20	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--



Meniscus Components UC – Left

F2	F3	F4	F5	F6	F7	F8
NR802	NR803	NR804	NR805	NR806	NR807	NR808
NR812	NR813	NR814	NR815	NR816	NR817	NR818
NR822	NR823	NR824	NR825	NR826	NR827	NR828
NR832	NR833	NR834	NR835	NR836	NR837	NR838
NR842	NR843	NR844	NR845	NR846	NR847	NR848
NR852	NR853	NR854	NR855	NR856	NR857	NR858
--	--	--	--	--	--	--
--	--	--	--	--	--	--



Meniscus Components PS – Left

Type:	F2	F3	F4	F5	F6	F7	F8
10	NB802	NB803	NB804	NB805	NB806	NB807	NB808
12	NB812	NB813	NB814	NB815	NB816	NB817	NB818
14	NB822	NB823	NB824	NB825	NB826	NB827	NB828
16	NB832	NB833	NB834	NB835	NB836	NB837	NB838
18	NB842	NB843	NB844	NB845	NB846	NB847	NB848
20	NB852	NB853	NB854	NB855	NB856	NB857	NB858
22	--	--	NB864	NB865	NB866	NB867	NB868
24	--	--	NB874	NB875	NB876	NB877	NB878



Meniscus Components FP – Right

Type:	F2	F3	F4	F5	F6	F7	F8
10	NO642	NO643	NO644	NO645	NO646	NO647	NO648
12	NO652	NO653	NO654	NO655	NO656	NO657	NO658
14	NO662	NO663	NO664	NO665	NO666	NO667	NO668
16	NO672	NO673	NO674	NO675	NO676	NO677	NO678
18	--	--	--	--	--	--	--
20	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--



Meniscus Components UC – Right

F2	F3	F4	F5	F6	F7	F8
NR902	NR903	NR904	NR905	NR906	NR907	NR908
NR912	NR913	NR914	NR915	NR916	NR917	NR918
NR922	NR923	NR924	NR925	NR926	NR927	NR928
NR932	NR933	NR934	NR935	NR936	NR937	NR938
NR942	NR943	NR944	NR945	NR946	NR947	NR948
NR952	NR953	NR954	NR955	NR956	NR957	NR958
--	--	--	--	--	--	--
--	--	--	--	--	--	--



Meniscus Components PS – Right

Type:	F2	F3	F4	F5	F6	F7	F8
10	NB902	NB903	NB904	NB905	NB906	NB907	NB908
12	NB912	NB913	NB914	NB915	NB916	NB917	NB918
14	NB922	NB923	NB924	NB925	NB926	NB927	NB928
16	NB932	NB933	NB934	NB935	NB936	NB937	NB938
18	NB942	NB943	NB944	NB945	NB946	NB947	NB948
20	NB952	NB953	NB954	NB955	NB956	NB957	NB958
22	--	--	NB964	NB965	NB966	NB967	NB968
24	--	--	NB974	NB975	NB976	NB977	NB978

NOTE: All meniscus component include a rotation peg in CoCrMo material.



e.motion® specific stems for PS/UC/FP

Femur extension stems cementless

	5°				7°			
Type:	Ø 14	Ø 16	Ø 18	Ø 20	Ø 14	Ø 16	Ø 18	Ø 20
Short	NB236K	NB237K	NB238K	NB239K	NB256K	NB257K	NB258K	NB259K
Middle	NB241K	NB242K	NB243K	NB244K	NB261K	NB262K	NB263K	NB264K
Long	NB246K	NB247K	NB248K	NB249K	NB266K	NB267K	NB268K	NB269K



Femur extension stems cemented

	5°		7°	
Type:	Ø 14	Ø 16	Ø 14	Ø 16
Short	NB145K	NB144K	NB135K	NB134K
Middle	NB150K	NB149K	NB137K	NB136K
Long	NB155K	NB154K	NB139K	NB138K



Nut for femur extension stem

NB140K



Tibia extension stem cemented

Type:	Ø 12	Ø 14	Ø 16
Short	NB213K	NB214K	NB215K
Middle	NB218K	NB219K	NB220K
Long	NB223K	NB224K	NB225K



Tibia extension stem cementless

Type:	Ø 10	Ø 12	Ø 14	Ø 16
Short	NB114K	NB115K	NB116K	NB117K
Middle	NB094K	NB095K	NB096K	NB097K
Long	NB124K	NB125K	NB126K	NB127K



AS e.motion® specific stems for PS/UC/FP

Femur extension stems cementless

	5°				7°			
Type:	Ø 14	Ø 16	Ø 18	Ø 20	Ø 14	Ø 16	Ø 18	Ø 20
Short	NB236Z	NB237Z	NB238Z	NB239Z	NB256Z	NB257Z	NB258Z	NB259Z
Middle	NB241Z	NB242Z	NB243Z	NB244Z	NB261Z	NB262Z	NB263Z	NB264Z
Long	NB246Z	NB247Z	NB248Z	NB249Z	NB266Z	NB267Z	NB268Z	NB269Z



Femur extension stems cemented

	5°		7°	
Type:	Ø 14	Ø 16	Ø 14	Ø 16
Short	NB145Z	NB144Z	NB135Z	NB134Z
Middle	NB150Z	NB149Z	NB137Z	NB136Z
Long	NB155Z	NB154Z	NB139Z	NB138Z



Nut for femur extension stem

NB140Z



Tibia extension stem cemented

Type:	Ø 12	Ø 14	Ø 16
Short	NB213Z	NB214Z	NB215Z
Middle	NB218Z	NB219Z	NB220Z
Long	NB223Z	NB224Z	NB225Z



Tibia extension stem cementless

Type:	Ø 10	Ø 12	Ø 14	Ø 16
Short	NB114Z	NB115Z	NB116Z	NB117Z
Middle	NB094Z	NB095Z	NB096Z	NB097Z
Long	NB124Z	NB125Z	NB126Z	NB127Z

