Aesculap® e.motion® System

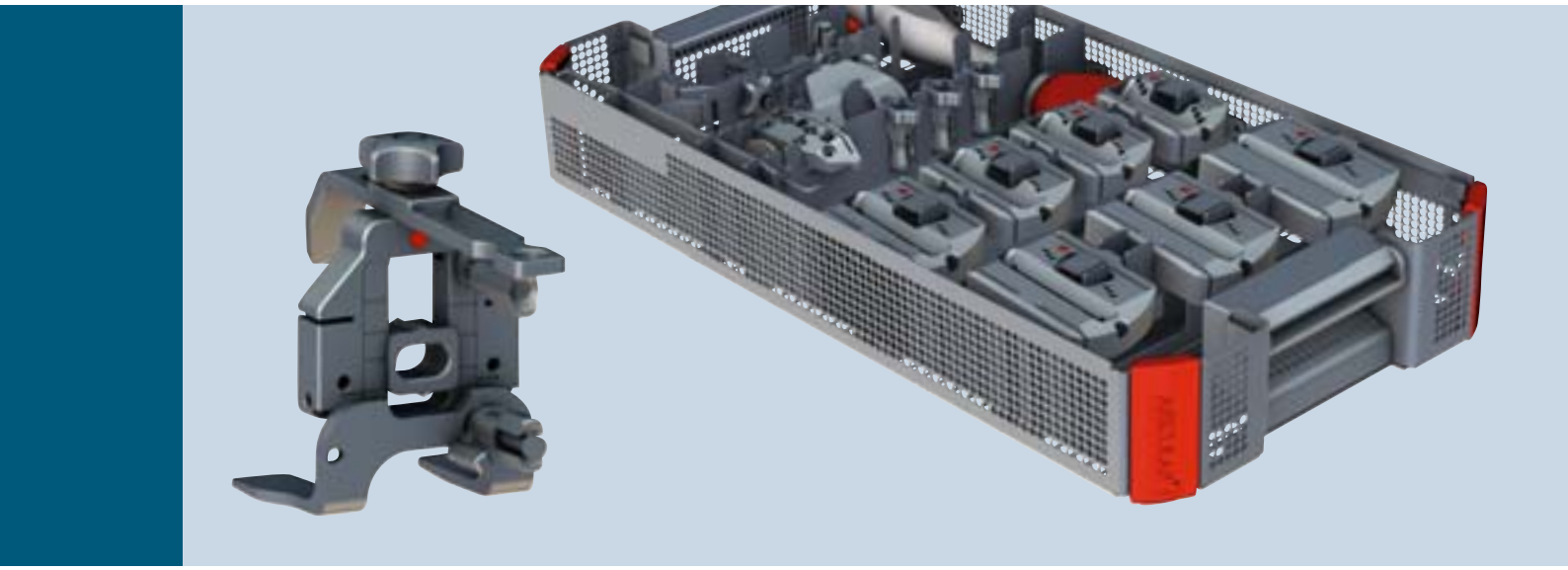
Knee Arthroplasty
Operating Technique with IQ Instruments

Aesculap Orthopaedics

B BRAUN
SHARING EXPERTISE

Aesculap® IQ Instruments

1. The IQ Instruments



The e.motion® IQ 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 e.motion® IQ 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 requires a manual pre cleaning.

2. Content

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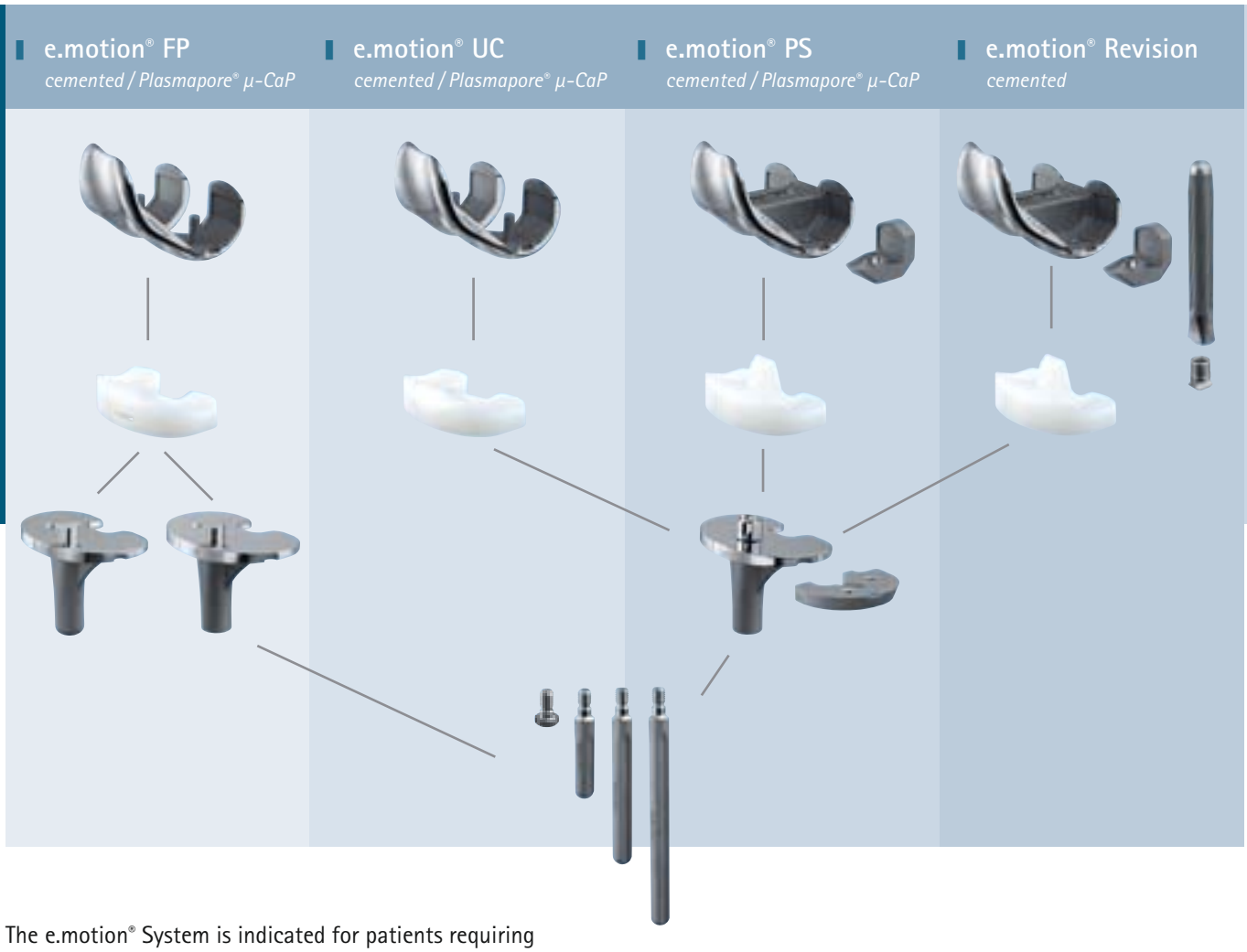
3. Indications/Patient Selection



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 chose 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 coating AS.

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

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 intramedullary 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 (1.1 and 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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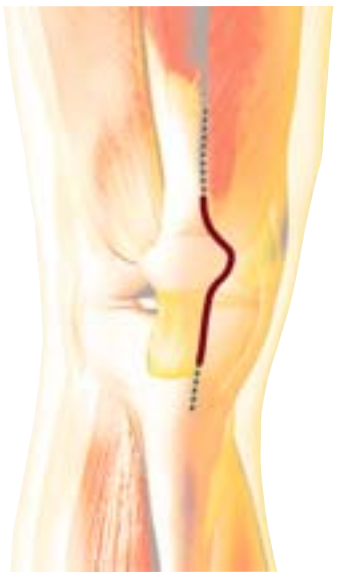
5. Approach



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

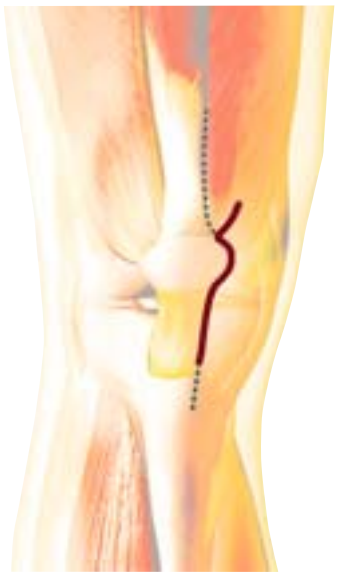
The initial skin incision is a straight midline or slightly oblique parapatellar skin incision starting 2 to 4 cm proximal to the superior pole of the patella and extending distally to the medial aspect of the tibial tubercule. The surgeon should decide on a patient basis how long of an incision is necessary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

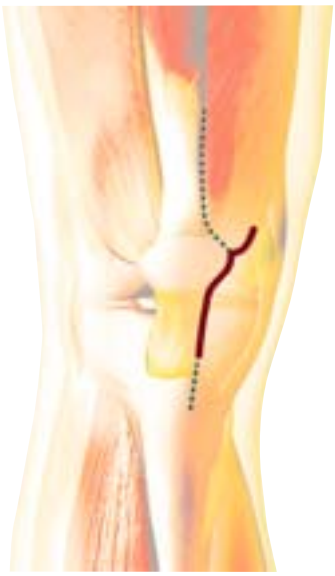
The length range of the incision is generally between 8 and 14 cm symmetrically distributed above and below the joint line. Extension of the skin incision may be necessary during the procedure depending on the patient anatomy, the soft tissues and the skin tension.

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

5.1 Medial parapatellar Arthrotomy

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





5.2 Mid-vastus Arthrotomy

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

5.3 Sub-vastus Arthrotomy

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

5.4 Final exposure

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

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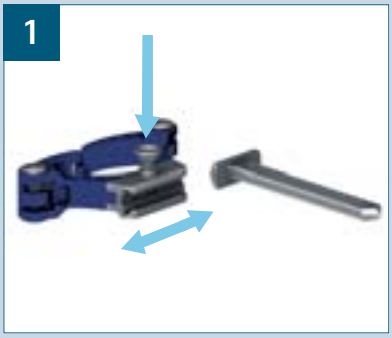
6. Assembly Instructions and Instrument Handling

A – Tibia Extra-Medullary Alignment – Assembly Instructions

1

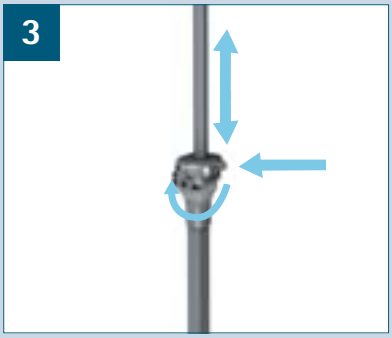


- press the upper button on the bimalleolar clamp
- engage the support in the groove
- when the neutral position is reached, release the button

2

- 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

3



- 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

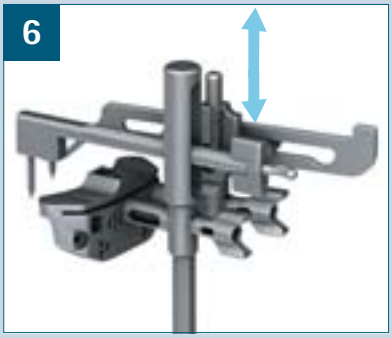
4

- engage the holding rod in one of the connection squares of the tibial cutting guide
- lock the assembly by turning the frontal wheel

5

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

6



- 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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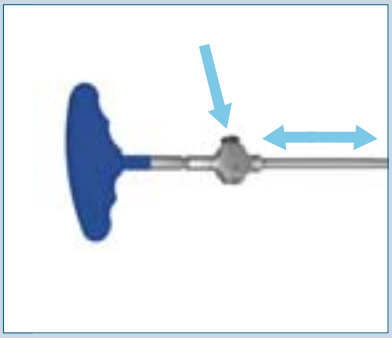
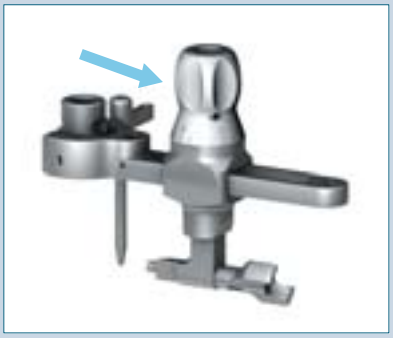
B – Tibia Intra-Medullary Alignment



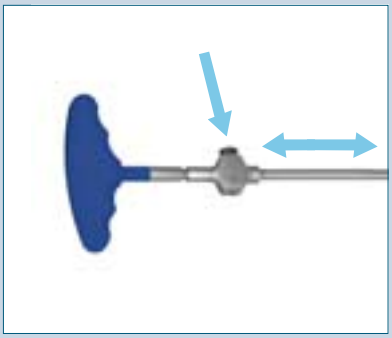
- push on the button of the T-handle to release the locking mechanism
- couple the T-handle to the IM rod
- release the button to lock the assembly



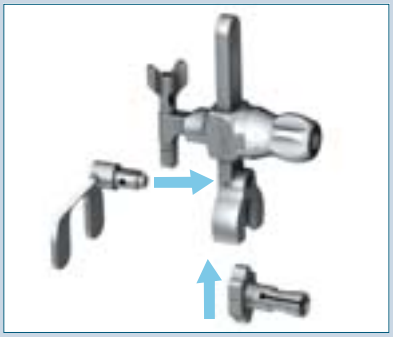
- choose the IM orientation sleeve corresponding to the desired posterior slope resection of the tibia (default is 0° sleeve; sleeves with 3°, 5° and 7° posterior slope are available)
- connect the sleeve to the IM alignment system

- 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



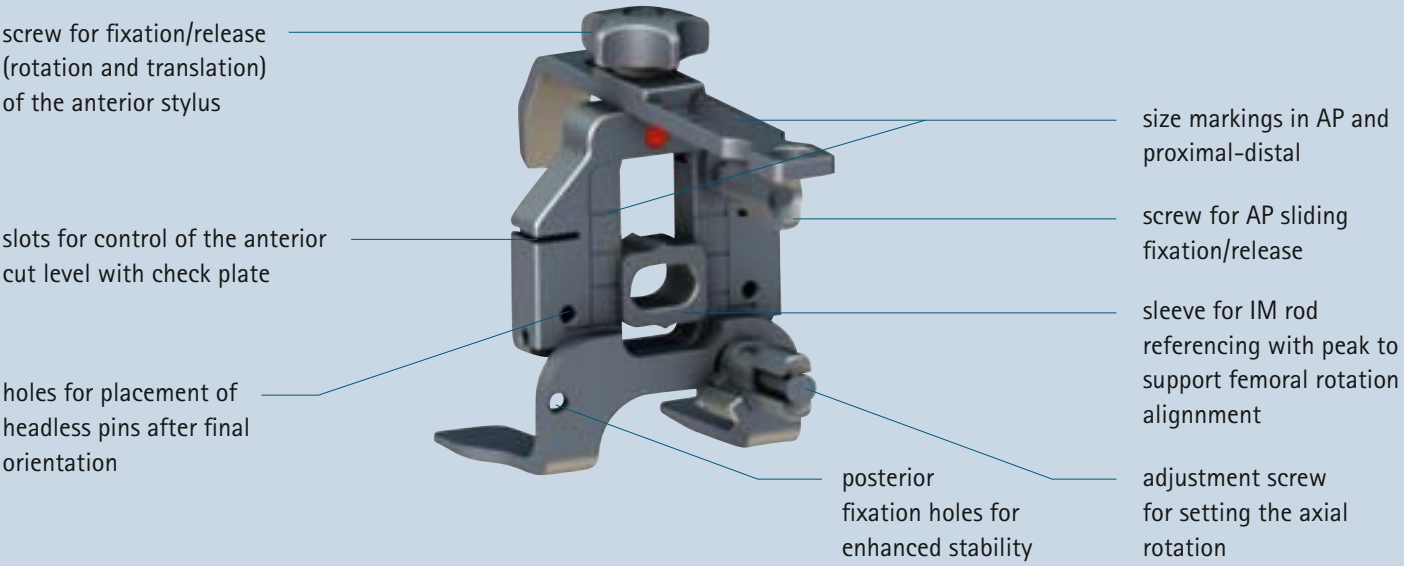
- push on the button of the T-handle to release the locking mechanism
- couple the T-handle to the IM rod
- release the button to lock the assembly



- 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



- **Option 1:** the rotation is pre-fixed 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, checking the alignment of the AP window with the femur AP plane (Whiteside line).
- Due to the fixed distance between the pin placement holes and the anterior cortex stylus, the placed pins can be used for any femoral size chosen by the surgeon. 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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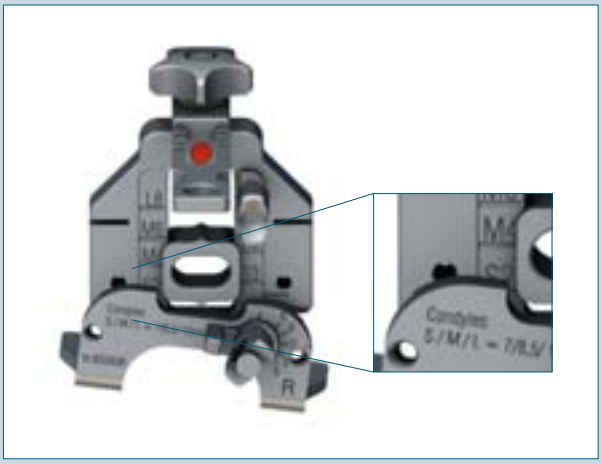
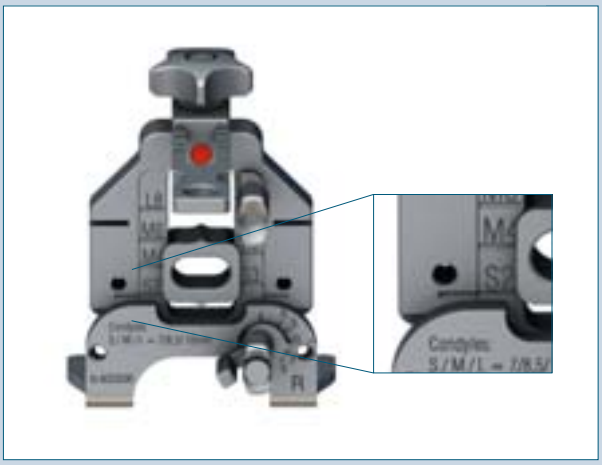
D – A/P and Rotation Alignment Block

- 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 = 7.5 mm; M = size 4, 5, 6 = 8.5 mm and L = 7, 8 = 10 mm. Up- or downsizing can therefore also have an impact on the extension gap.

E – Tibial-Distal Cutting Block

Distal resection or tibial resection with a standard approach

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

Right knee tibial resection with a less invasive approach

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

Left knee tibial resection with a less invasive approach

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

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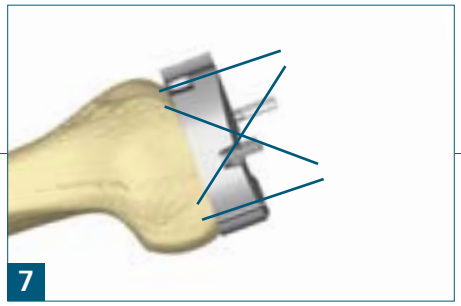
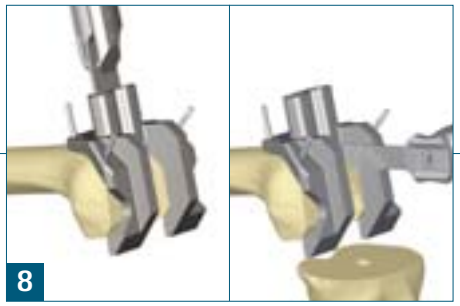
7. Workflow Synopsis

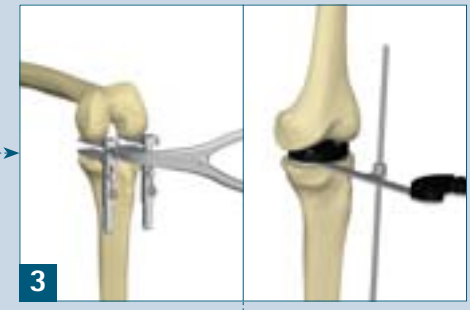
optional

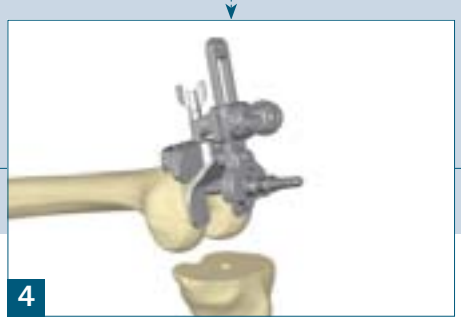
Tibia First

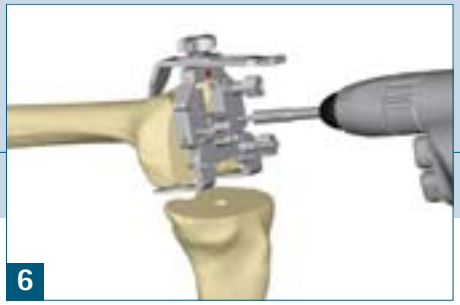
1. Tibia IM or EM Alignment
2. Tibia Resection
3. Gap Balancing (optional)
4. Femur IM Alignment
5. Distal Resection
6. Femur AP Sizing and Rotation
7. Femur APC Resections
8. PS Box Preparation
9. Tibia Keel and/or Stem Preparation
10. Patella Preparation (optional)
11. Trial Reduction
12. Component Implantation











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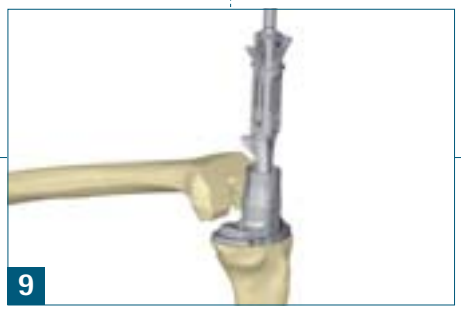

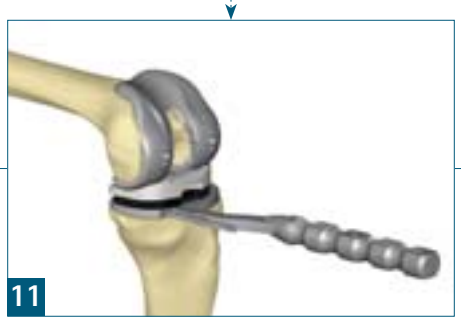

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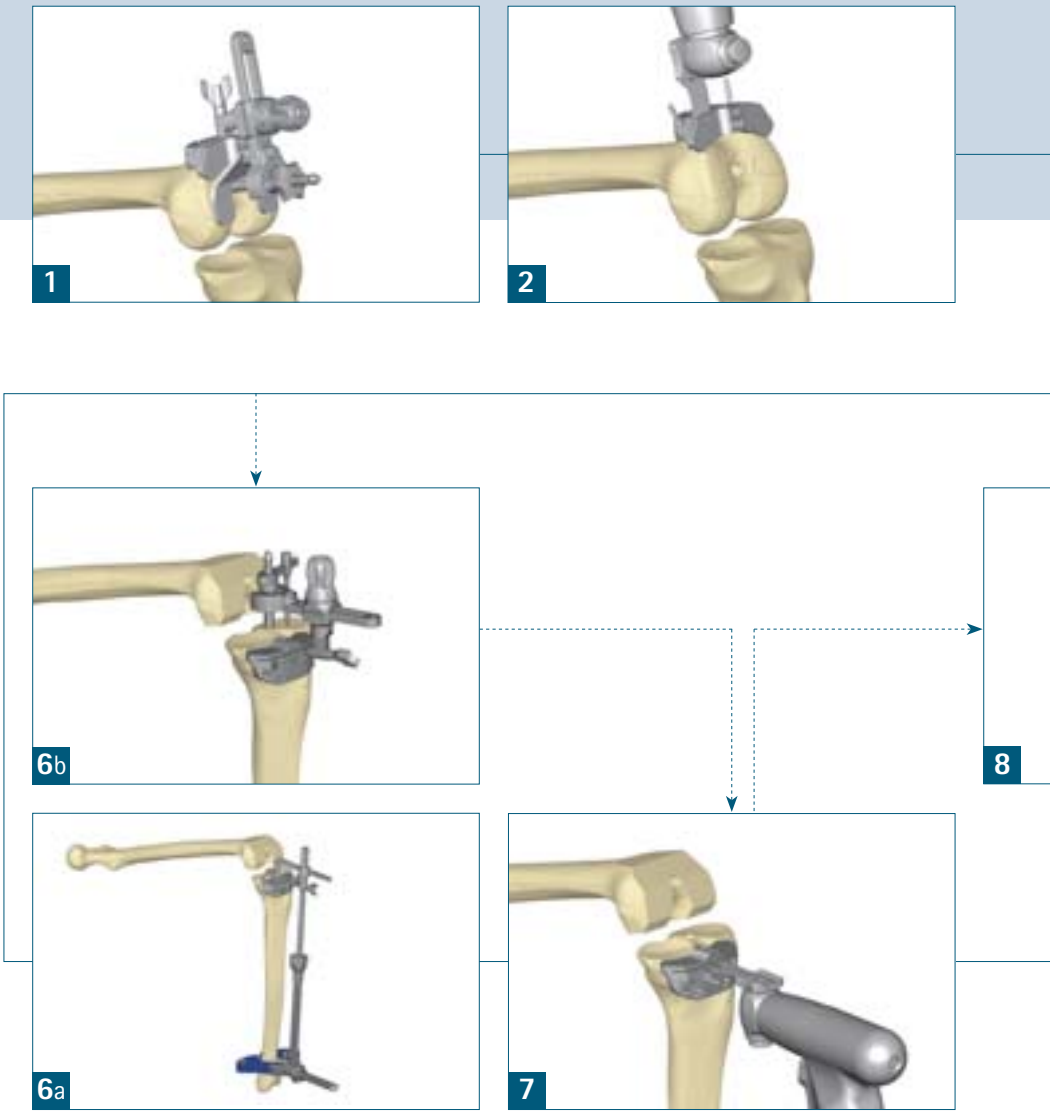
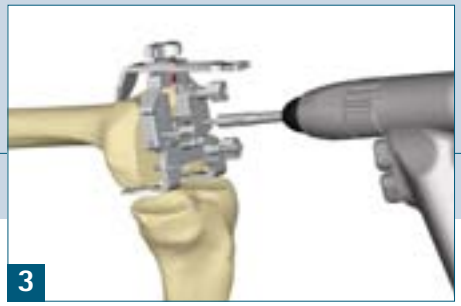
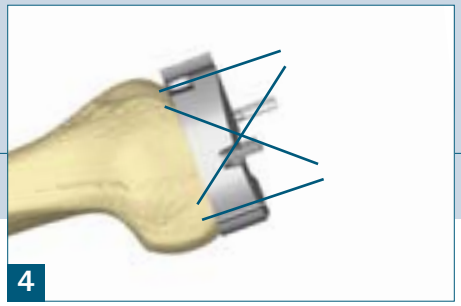
7. Workflow Synopsis

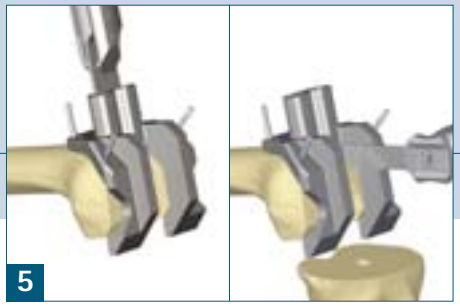
Femur First

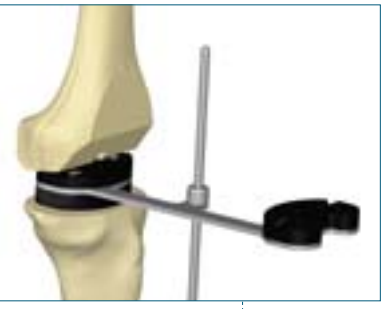
1. Femur IM Alignment
2. Distal Resection
3. Femur AP Sizing and Rotation
4. Femur APC Resections
5. PS Box Preparation
6. Tibia IM or EM Alignment
7. Tibia Resection
8. Gap Balancing (optional)
9. Tibia Keel and/or Stem Preparation
10. Patella Preparation (optional)
11. Trial Reduction
12. Component Implantation











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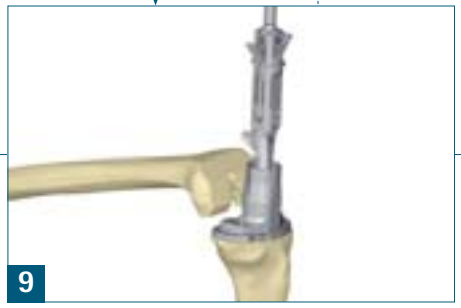

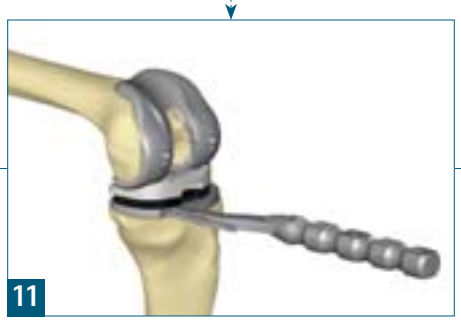

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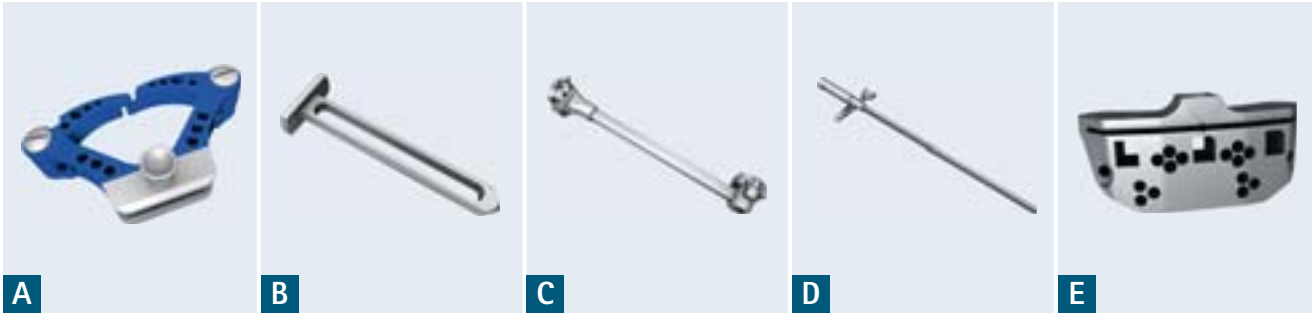
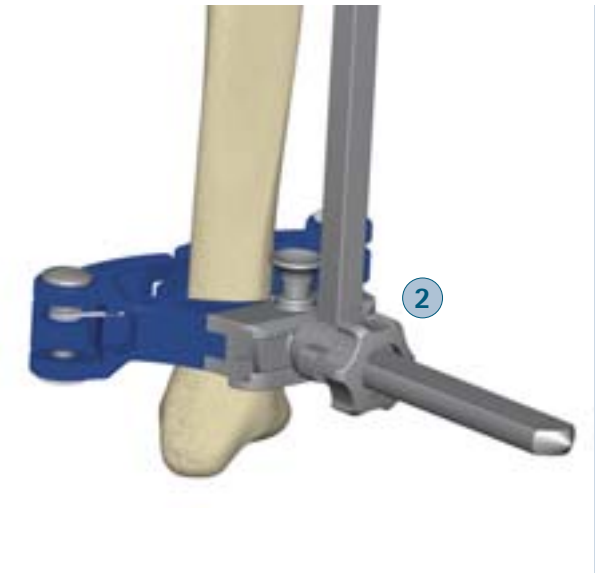
8. Tibia Preparation

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 patients 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.



A: Bimalleolar clamp NS345R, B: Bimalleolar clamp support NS344R, C: Alignment system handle NS342R,
D: Holding rod for cutting guide NS341R, E: Tibia cutting guide NS334R

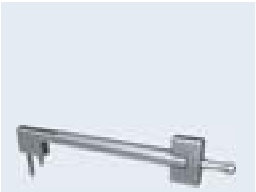


Varus-valgus alignment

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.


F


G

F: Proximal fixation NS343R, G: Tibia stylus NS347R

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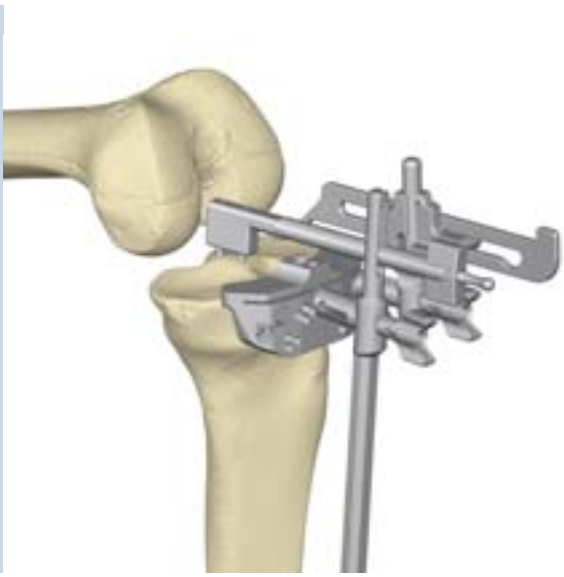
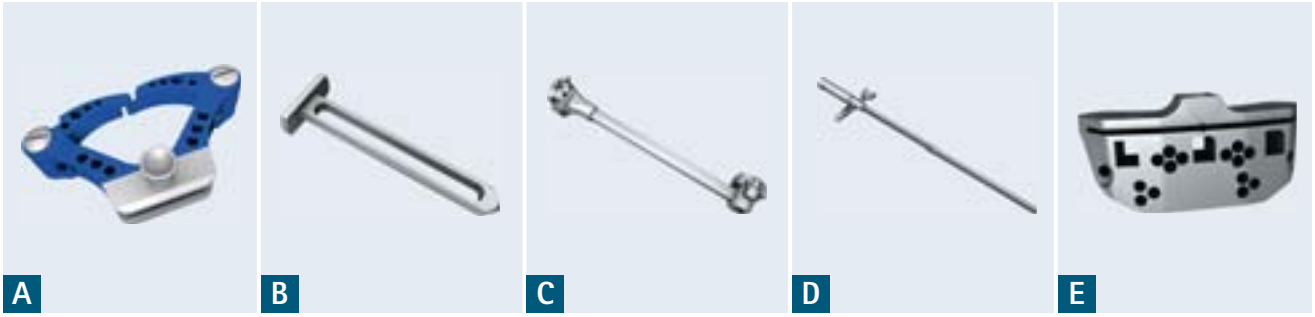
8. Tibia Preparation



Height adjustment (3)

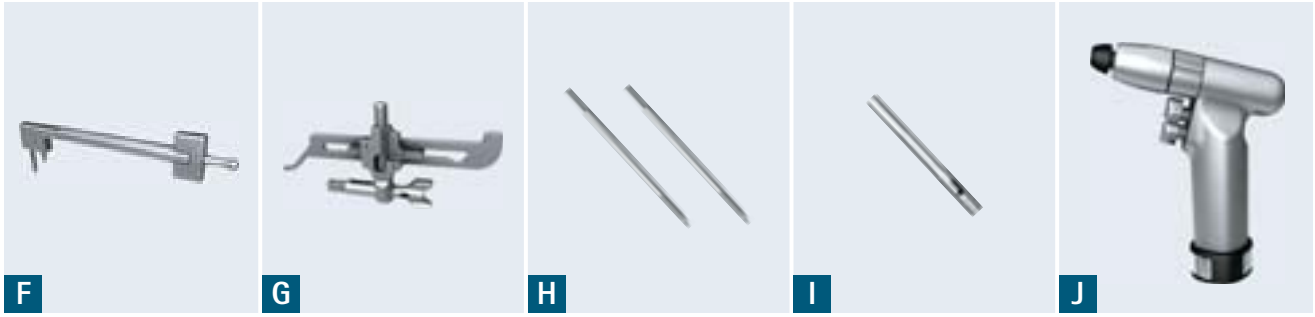
- The resection height is determined in preoperative planning. The aim is to remove any defect on the tibial joint surface as completely as possible in order to create a bed for the tibia plateau on intact bone for support of the implant.
- The planned value is set on the stylus, which is then mounted 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.



A: Bimalleolar clamp NS345R, B: Bimalleolar clamp support NS344R, C: Alignment system handle NS342R,
D: Holding rod for cutting guide NS341R, E: Tibia cutting guide NS334R

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

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



F: Proximal fixation NS343R, G: Tibia stylus NS347R, H: Headless pins 63 mm NP583R, I: Pin driver NP613R, J: Acculan® drill

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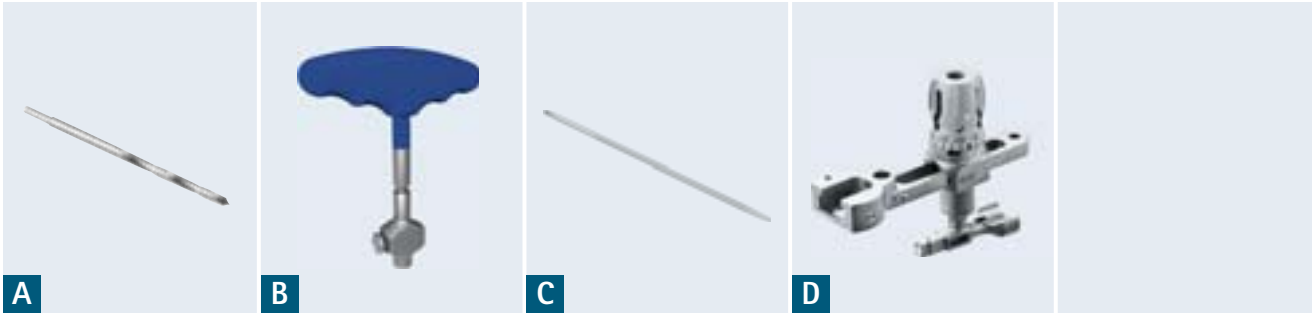
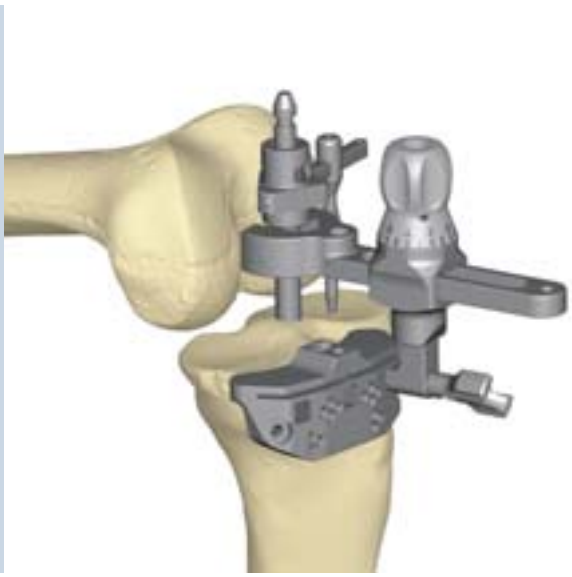
8. Tibia Preparation

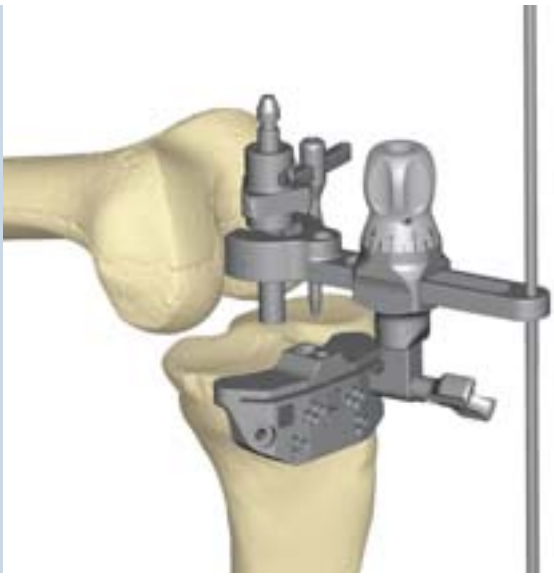
8.2 Intramedullary Referencing

- 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.



A: Drill Ø 9 mm NE443R, B: T-handle NE198R, C: IM alignment rod NS331R, D: IM alignment system NS332R





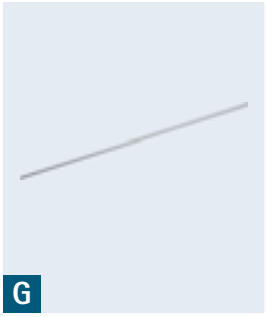
- The stylus is set on the deepest point of the tibia plateau to define the 0-level cut. The height of the cut is then adjusted by turning the tuning wheel to the desired amount of resection in millimeters.

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.

E

F



G

E: Tibia cutting guide NS334R, F: Tibia IM stylus for orientation sleeves NS847R, G: Alignment rod long NP471R

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8. Tibia Preparation

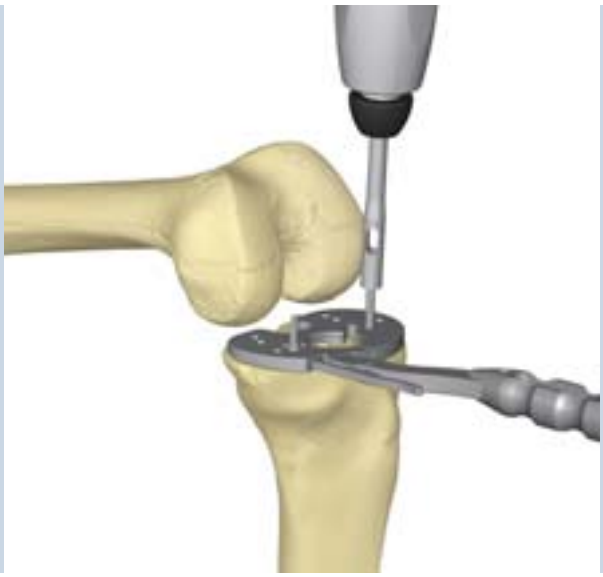
- The cutting block is fixed with two headless pins in position '0'. The +/-2 mm pinholes are available on the resection blocks to further adjust the resection level if needed. In order to avoid movements during the resection, additional pins are set in convergent holes.
- The IM tibia alignment system 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.

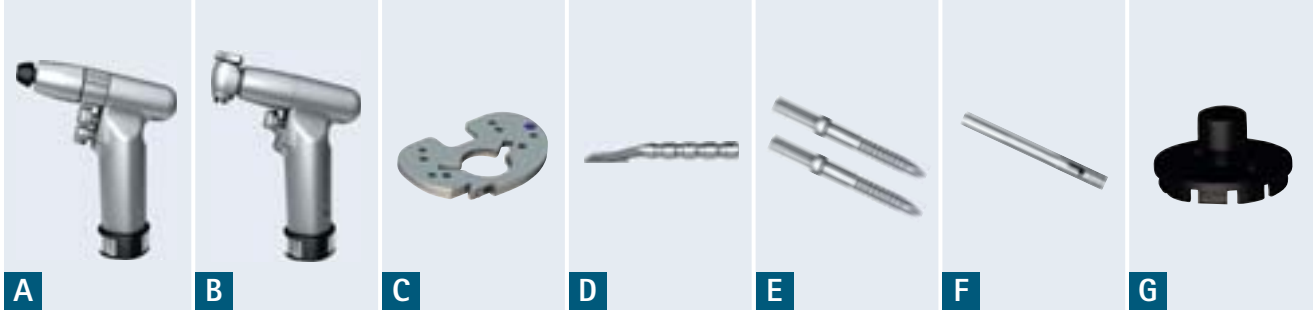
NOTE: The protection of the surrounding soft tissue sleeve of the knee joint is paramount. A special attention has to be paid: use of Hohmann retractors, collaterals retractors, PCL retractor is recommended in order to protect them during the resection.

A: IM alignment rod NS331R, B: IM alignment system NS332R, C: Tibia IM stylus for orientation sleeves NS847R, D: Tibia cutting guide NS334R, E: Headless pins 63 mm NP583R



8.4 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 baseplate while avoiding ML and AP overhang.
- 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 baseplate.



A: Acculan® drill, B: Acculan® saw, C: Tibia trial/preparation plateau NS532R-NS538R, D: Tibia trial/prep. plateau holder NQ378R, E: Headed pins 30 mm NP585R, F: Pin driver NP613R, G: Rotation peg NS541P-NS543P

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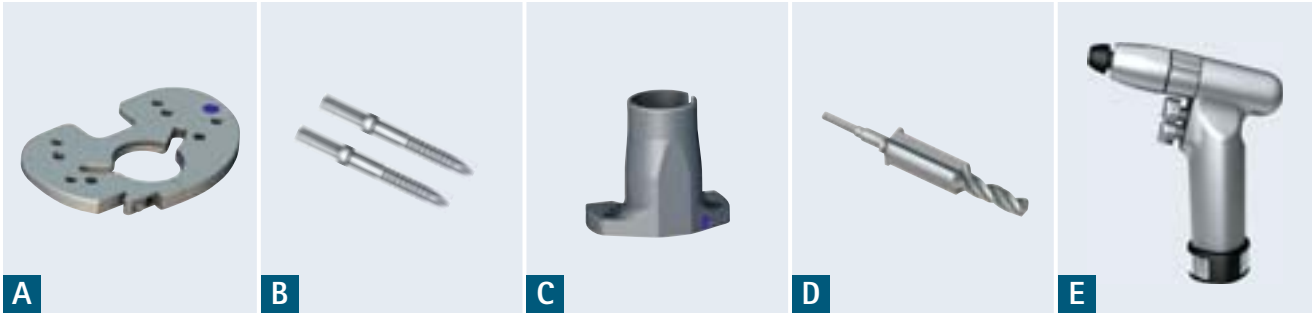
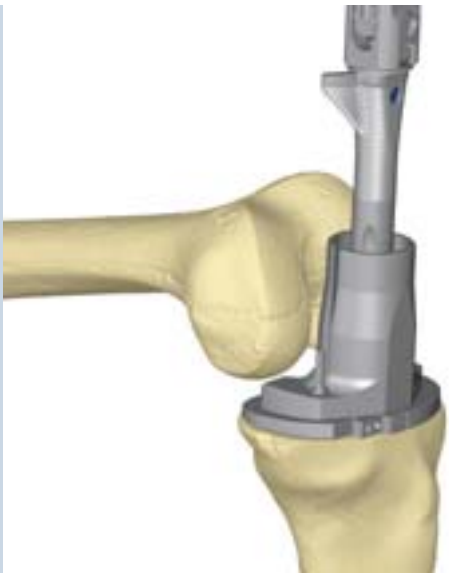
8. Tibia Preparation

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



A: Tibia trial/preparation plateau NS532R-NS538R, B: Headed pins 30 mm NP585R, C: Guide for winglet chisel NS527R-NS529R, D: Drill with stop NS521R-NS523R, E: Acculan® drill



8.5 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

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.

A: Trial obturator NE106T, B: Winglet chisel/Trial keel NS524R-NS526R, C: Osteodenser holder NS520R, D: Tibia drill sleeve for cemented stem NS547R-NS549R, E: Drill for cemented stem NS544R-NS546R, NS380R, F: Trial stem cemented NE094T-NE097T, NE114T-NE117T, NE124T-NE127T

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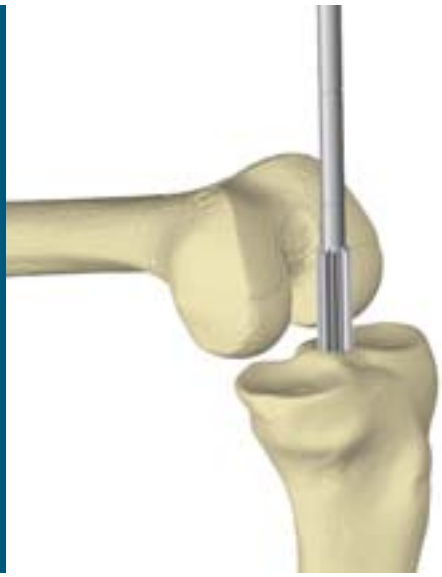
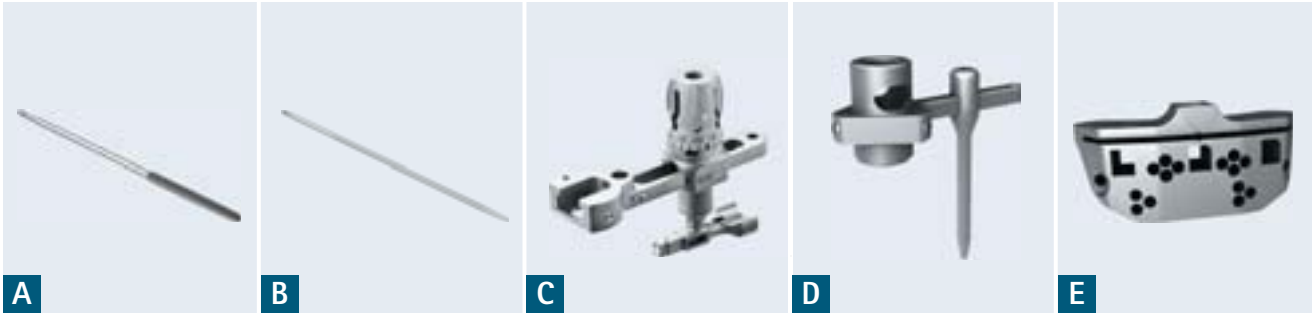
8. Tibia Preparation



Option 2: priority to the extension stem fixation

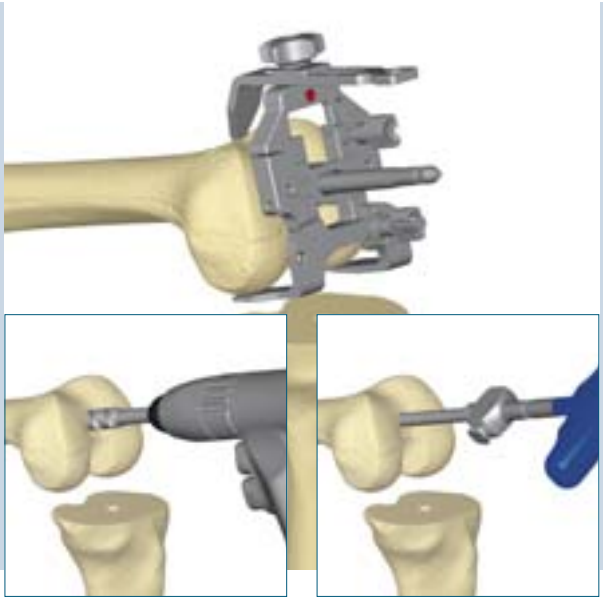
In this case, the medullary canal of the tibia is opened according to the preoperative planning (entry point) with the Ø 9 mm drill. The thinnest reamer is then coupled to the T-handle and inserted into the tibia medullary canal as deep as possible until a primary stability is achieved and a depth laser marking reaches the estimated level of the tibia resection (short or long stem). If not, a thicker diameter is used until stability is achieved. Once the T-handle is removed, the intramedullary 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.

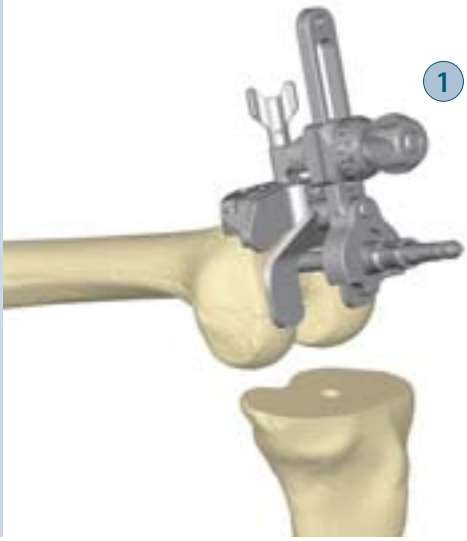
The height of the cut is then adjusted by turning the tuning wheel. The alignment of the cutting block can be checked with the EM alignment rod. The cutting block is fixed with two headless pins in position '0'; the +/-2 mm pinholes are available on the resection blocks to further adjust the resection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



A: Reamer for cementless stem NE154R-NE158R, B: IM alignment rod NS331R, C: IM alignment system NS332R, D: Tibia IM stylus for orientation sleeves NS847R, E: Tibia cutting guide NS334R

9. Femur Preparation





9.1 Femur Intramedullary Alignment

- The medullary canal of the femur is opened according to the preoperative planning (entry point) with the drill Ø 9 mm. The rod is inserted into the intramedullary 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 sawblade 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.

A: Femur alignment block NS580R, B: Drill Ø 9 mm NE443R, C: Acculan® drill, D: T-handle NE198R, E: Tibia alignment system NS332R, F: Distal femur contact plate NS333R, NS834R, G: Femur orient. sleeve NS335R-NS337R, H: Tibia cutt. guide NS334R

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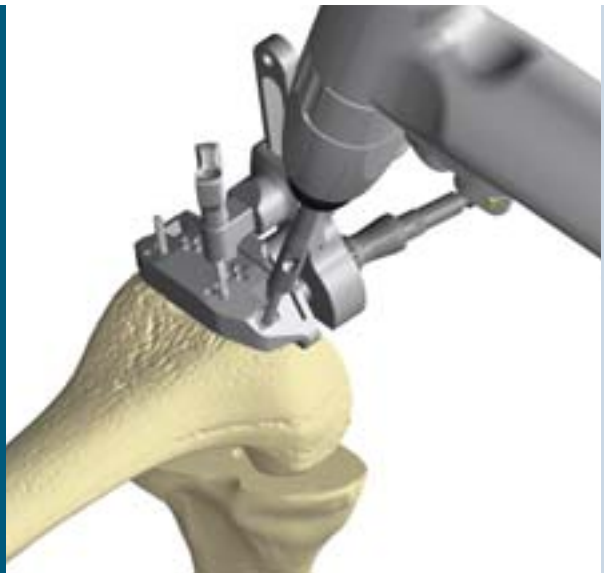
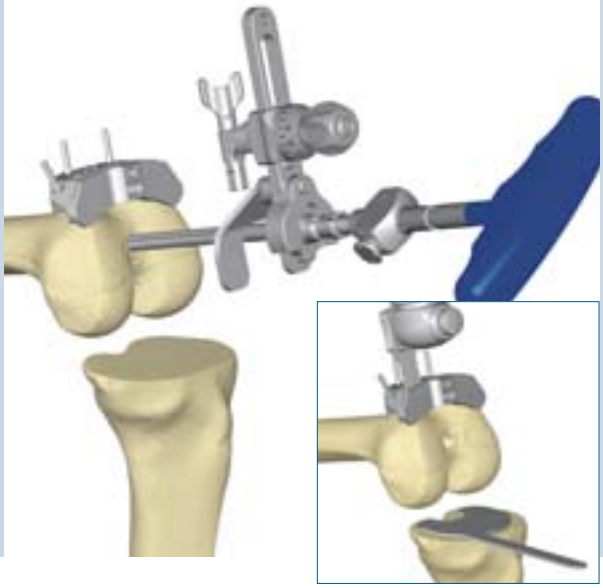
9. Femur Preparation

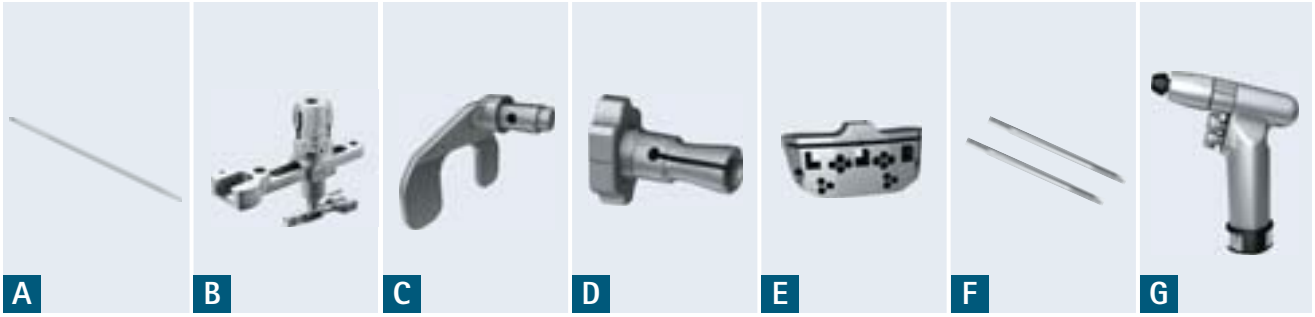




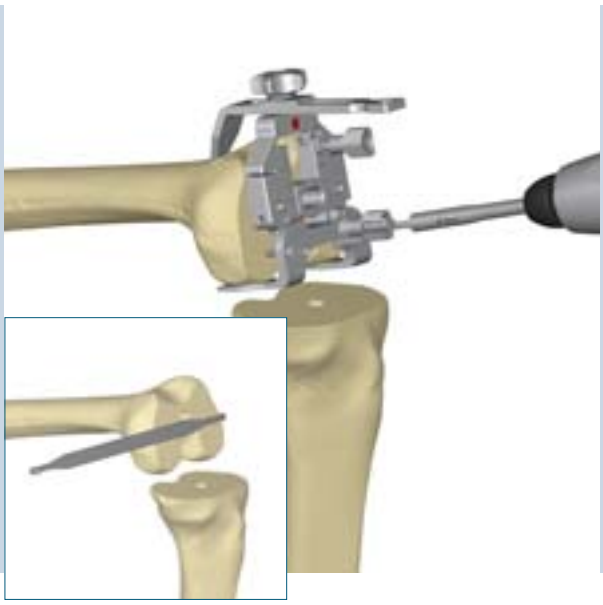
9.2 Distal Resection

- 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 intramedullary 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 sawblade. 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.



A: IM alignment rod NS331R, B: Tibia alignment system NS332R, C: Distal femur contact plate NS333R, NS834R, D: Femur orient. sleeve NS335R-NS337R, E: Tibia cutt. guide NS334R, F: Headl. pins 63 mm NP583R, G: 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.

A: T-handle NE198R, B: Tibia protection plate NQ377R, C: Acculan® saw, D: ML femoral size gauge NS581R, E: Pin driver NP613R, F: Headless pins 63 mm NP583R

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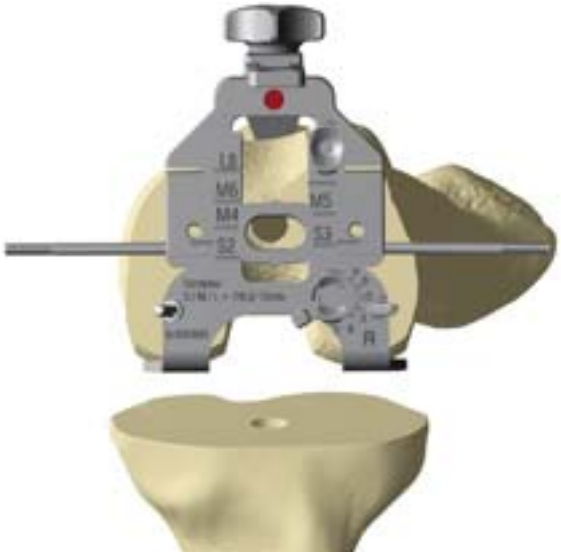
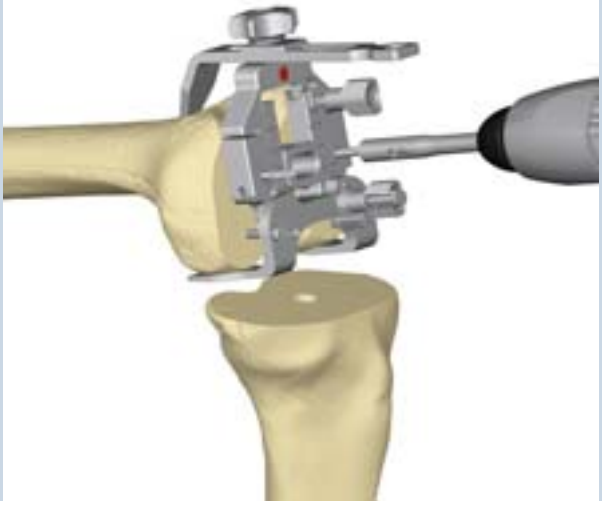
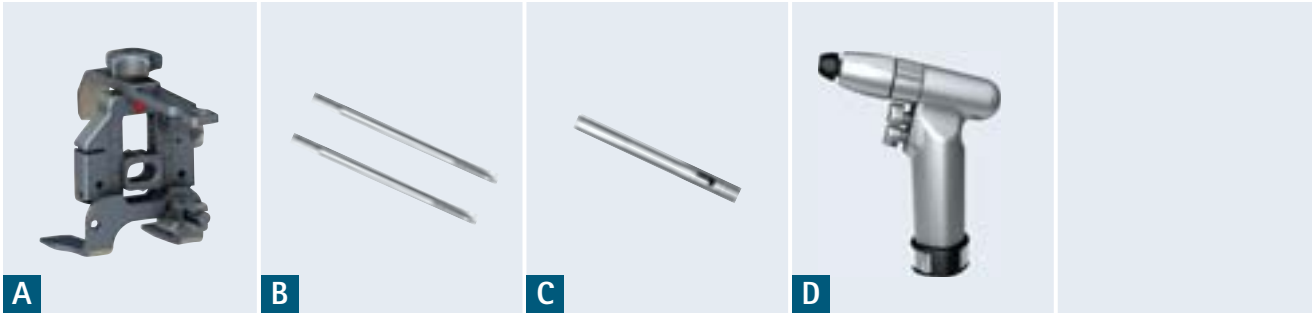
9. Femur Preparation

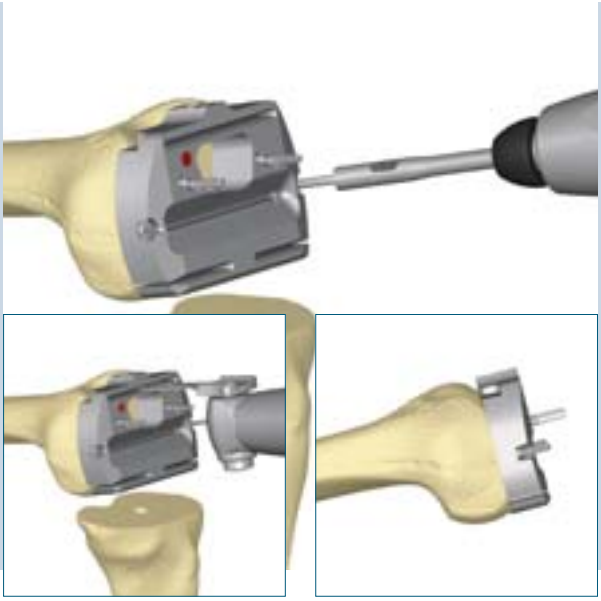




- It is possible to adjust the external rotation by moving the posterior lever arm in the right direction (clockwise for right knees, anticlockwise for left knees). The rotational position is confirmed by assessing the transepicondylar axis perpendicularity or by checking the Whiteside's line through 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.



A: Femur alignment block NS580R, B: Headless pins 63 mm NP583R, C: Pin driver NP613R, D: 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.

A: 4-in-1 femur cutting guide NS582R-NS588R, B: Cutting depth check blade NS850R, C: Acculan® saw

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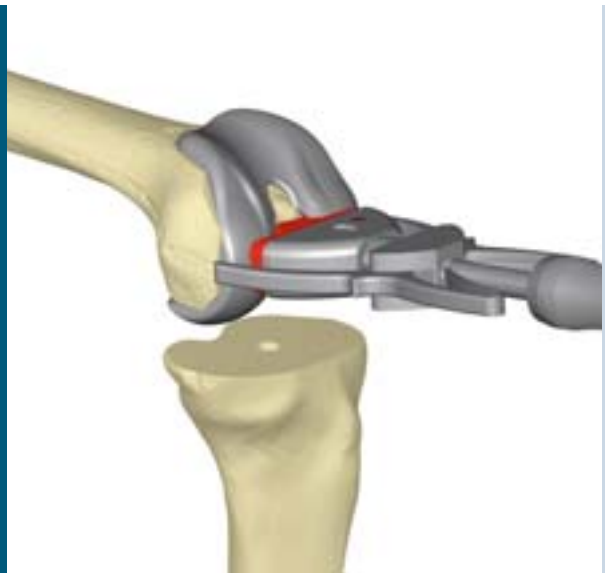
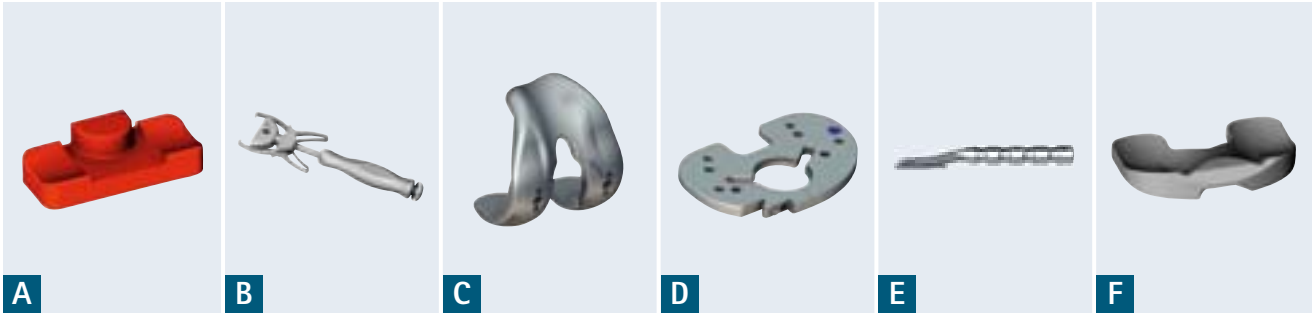
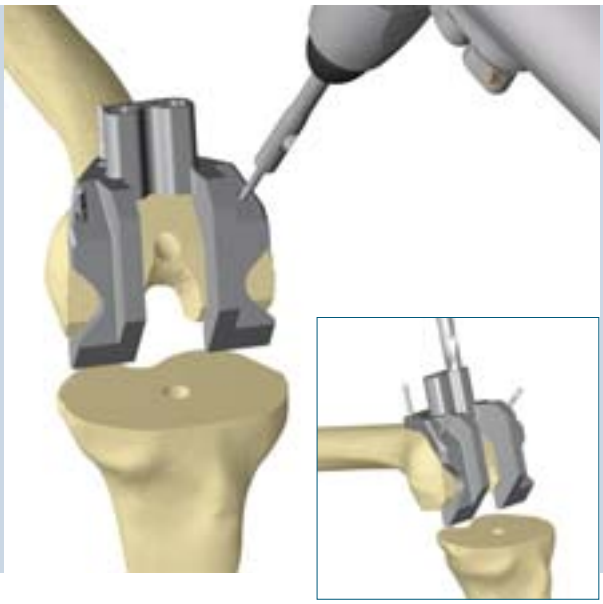
9. Femur Preparation

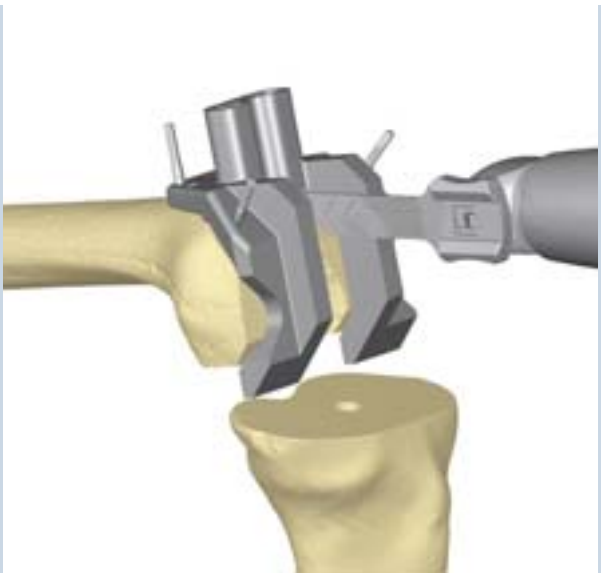


- The quality of the resections and the fit of the prosthesis can be assessed by placing the femur trial implant onto the bone preparation. Using the corresponding holder, make sure to apply a force toward anterior in order to avoid a flexed position.
- For downsizing the femur, a smaller 4-in-1 cutting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



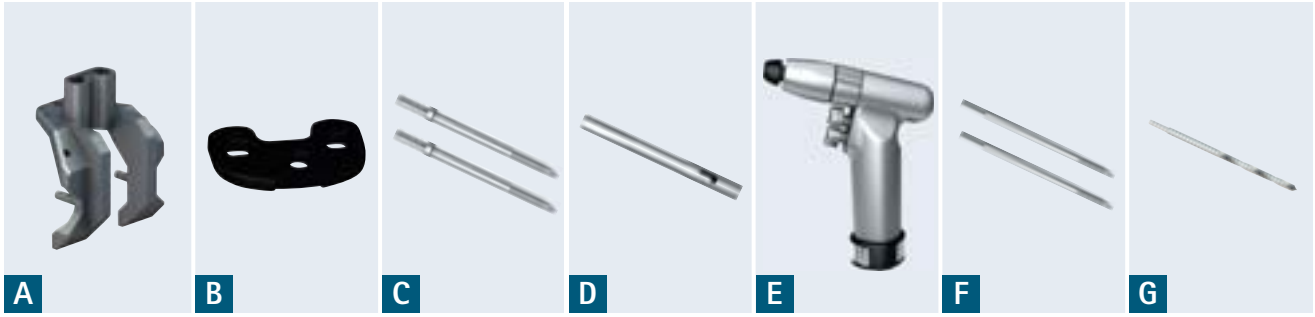
A: Insert for NS600R, NS601-NS603, B: Femur insertion instrument NS600R, C: Trial femur NE702K-NE708K, NE752K-NE758K, D: Tibia trial/preparation plateau NS532R-NS538R, E: Tibia trial/prep. plateau holder NQ378R, F: Trial gliding surface





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



A: Box preparation guide NS592R-NS598R, B: Complement. plate 6 mm, C: Headed pins 50 mm NP586R, D: Pin driver NP613R, E: Acculan® drill, F: Headless pins 63 mm NP583R, G: Drill D 9 mm NE443R

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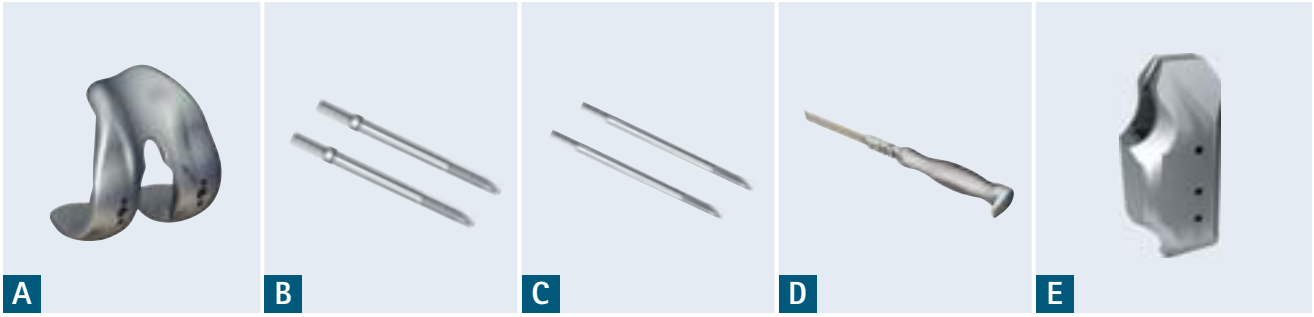
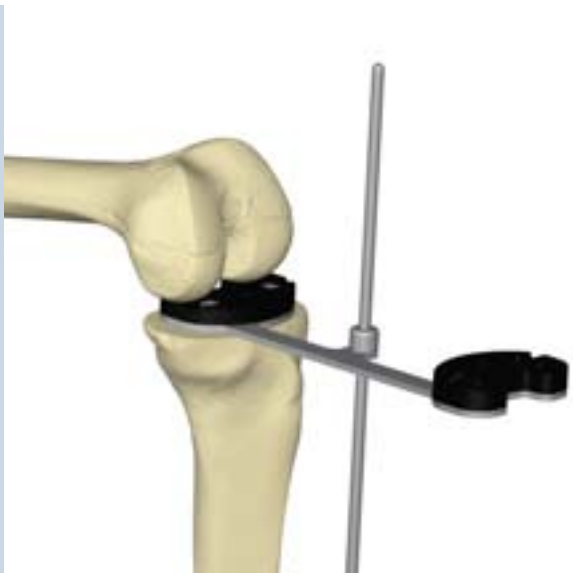
9. Femur Preparation

- The final preparation of the box roof can be performed using the box chisel throught 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.



A: Trial femur NE702K-NE708K, NE752K-NE758K, NS311RM-NS318RM, B: Headed pins 50 mm NP586R, C: Headless pins 63 mm NP583R, D: Femur box chisel NS599R, E: Femur box chisel stop NS369R

10. Gap Balancing



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

A: Acculan® saw, B: Trial femur box NS712R-NS718R, C: Tibia cut spacer NS852R-NS854R, D: Alignment rod long NP471R

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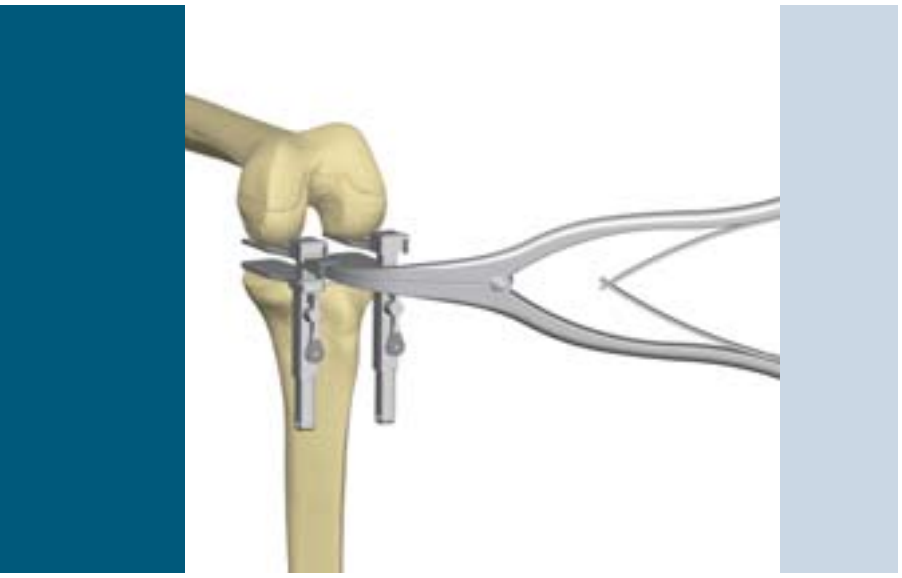
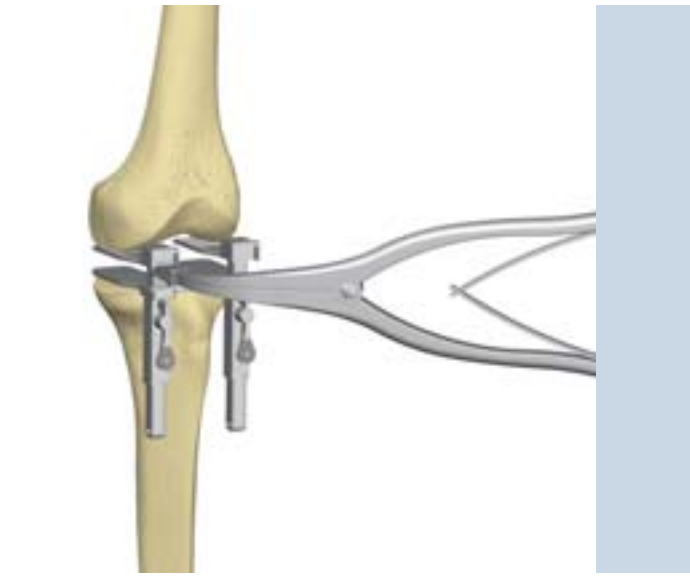
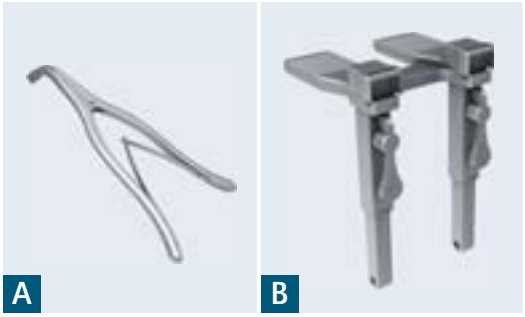
10. Gap Balancing



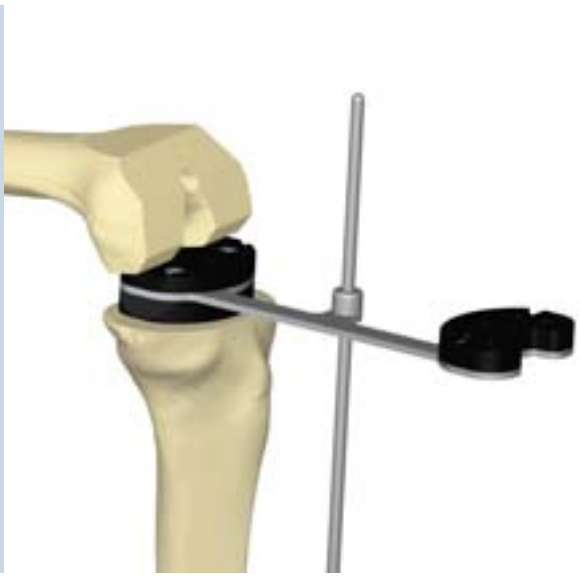


10.2 Optional Tibia First – Measurement with Distractor

- 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 gaps measurements.
- 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.)

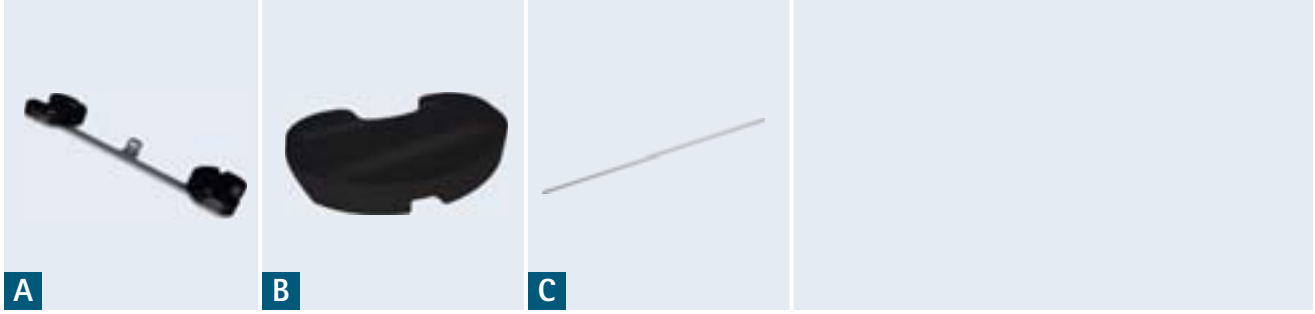


A: Distraction clamp NP609R, B: Femur-tibia distractor NP604R



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 10.2.



A: Tibia cut spacer NS852R-NS854R, B: Added femur cut spacer NS497-NS499, C: Alignment rod long NP471R

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10. Gap Balancing

		Flexion gap		
		optimal	tight	wide
Extension gap	optimal		▌increase tibia slope ▌downsize the femur	▌posterior capsule release and thicker insert ▌increase distal cut and thicker insert ▌increase femur size
	tight	▌posterior capsule release ▌increase distal cut	▌thinner insert ▌increase tibia cut	▌increase distal cut, release posterior capsule and thicker insert ▌upsize femur and increase distal cut ▌upsize femur and release posterior capsule
	wide	▌decrease distal cut ▌downsize femur and thicker insert	▌downsize femur and thicker insert ▌downsize femur and decrease distal cut ▌decrease distal cut	▌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.

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 to the planned level of remaining patellar bone thickness.
- The resection is performed through the cutting slot with a 1.27 mm thick sawblade.

A: Caliper AA847R, B: Patella resection clamp NS840R, C: Acculan® saw

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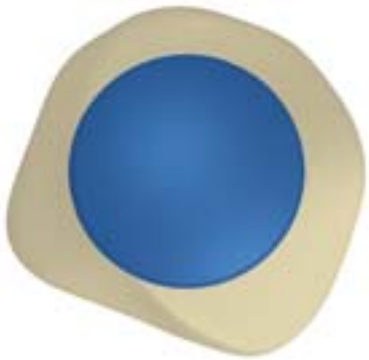
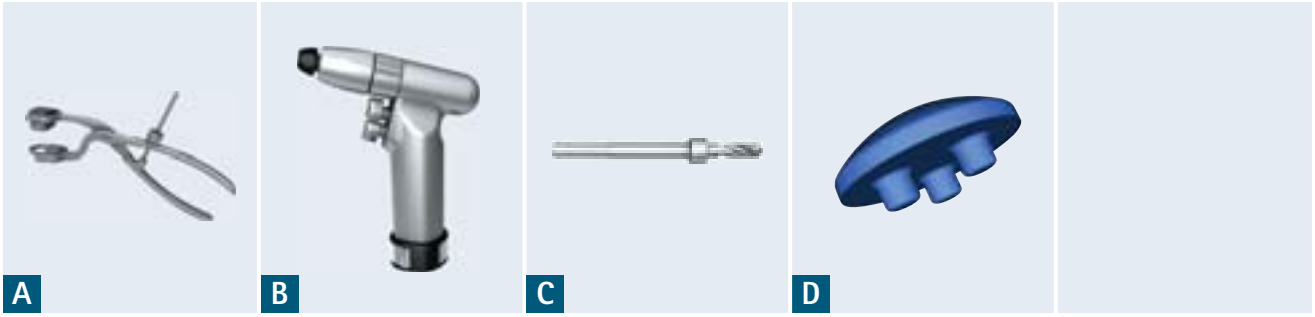
11. Patella Preparation



- 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 drill guide in order to check its position to the medial rim and appropriate positioning in the superior and inferior direction.
- The pegs of the implant are drilled through the holes with the Ø 6 mm drill until the stop is reached. The size of the patella is established with the corresponding trial patellar implant.



A: Patella drill/impaction clamp NS841R, B: Acculan® drill, C: Drill with stop Ø 6 mm NQ449R, D: Trial patella NQ281-NQ285

12. Trial Reduction

- 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 hyper-extension must be avoided.

A: Tibia trial/preparation plateau NS532R-NS538R, B: Tibia trial/prep. plateau holder NQ378R, C: Trial gliding surface, D: Trial spacer 6 mm, E: Trial rotation peg NS541P-NS543P

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13. Component Implantation

The following implant sequence is recommended:

- Tibia implant
- Femur implant
- Meniscal component
- Patella implant

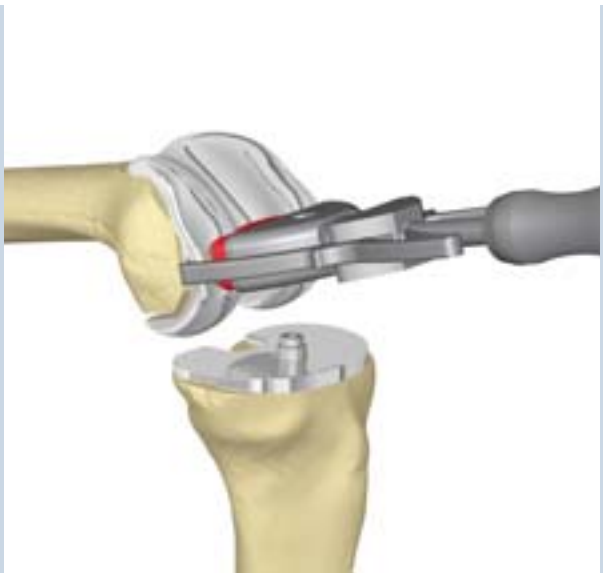
- The final tibia implant is brought precisely into the predefined position. The final positioning is achieved with the help of the tibia impactor. In case of the implantation of e.motion® UC or PS the rotation peg corresponding to the height of the meniscal component can be assembled to the tibia implant before implanation. With the torque wrench plus adapter and a counter holder the 10 Nm can be applied to the assembly.

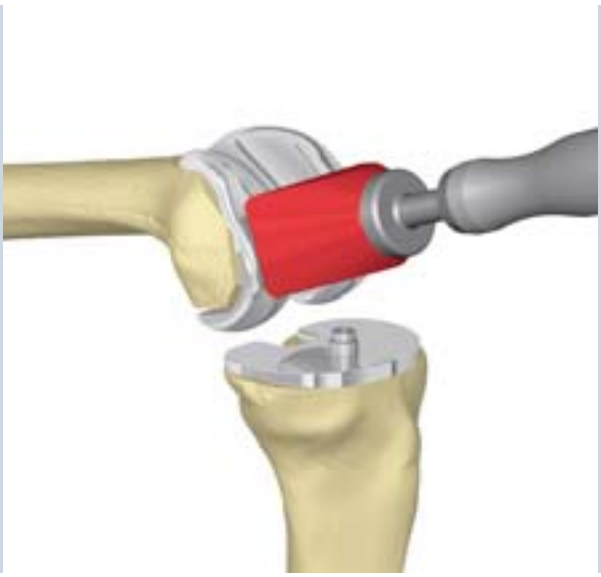
Option: The rotation peg can also be assembled to the tibia implant after the cement has cured.

NOTE: In case of use of an extension stem, the stem will be tightened with a torque of 20 Nm.

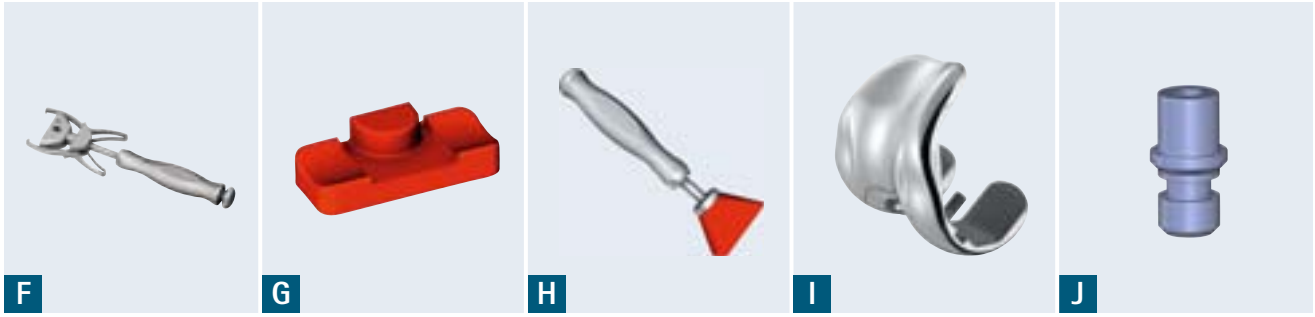
NOTE: In case of use of an FP version, the meniscal component has to be placed over the fixation hug before the impaction of the final femur implant.

A: Counter torque for stem fixation NS570R, B: Tibia plateau impactor NS425, C: Tibia implant, D: Torque wrench NE160R, E: 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.



F: Implant holding/insertion instrument NS600R, G: Femur insert to NS600R, NS601-NS603, H: Femur impactor NS424, I: Femur implant, J: Trial rotation peg NS540P

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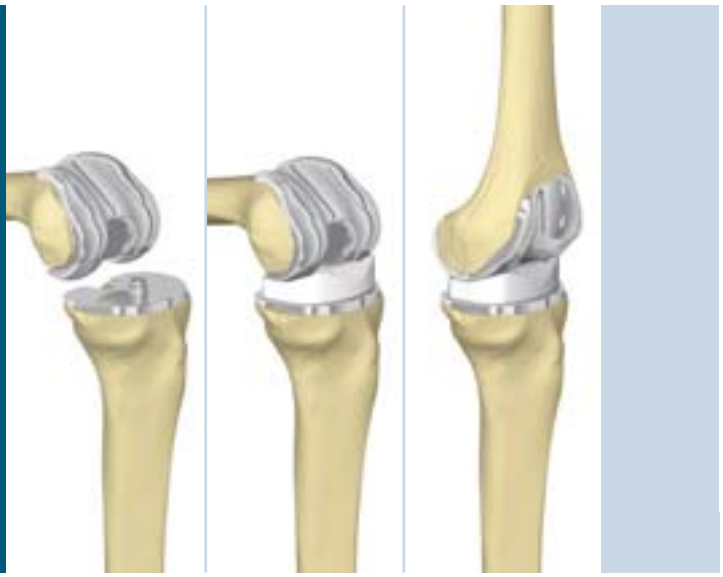
13. Component Implantation



- 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 roation 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.

A: Gliding surface, B: Patella drill/impaction clamp NS841R, C: Inlay for NS841R, NS842, D: Patella implant, E: 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.

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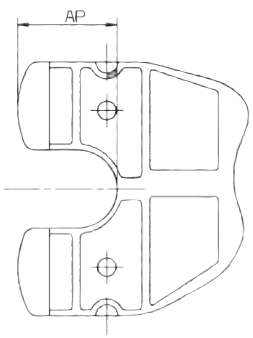
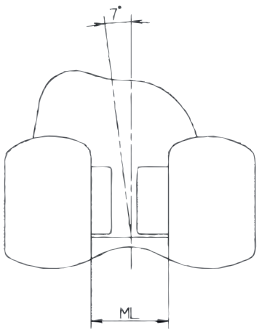
16. Implant Dimensions

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

Measurements in mm

	AP	ML
F2	19.89	18
F3	22.23	19
F4	24.36	20
F5	26.64	21
F6	28.8	22
F7	31.05	23
F8	33.40	25



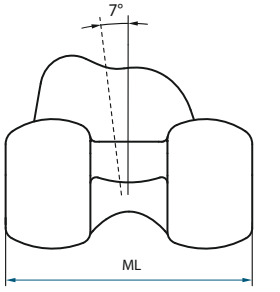


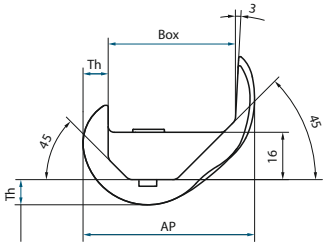
Femoral component

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

Measurements in mm

Size	ML	AP	Box	Th	Trochlear Depth
F2 L / R	56	49.9	37	7	4
F3 L / R	60	53.8	40	7	4.5
F4 L / R	64	58	43	8.5	4.5
F5 L / R	68	61.8	46	8.5	5
F6 L / R	72	65.6	49	8.5	5
F7 L / R	76	69.7	52	10	5.5
F8 L / R	80	73.8	55	10	6



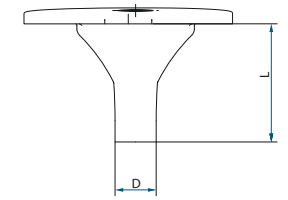


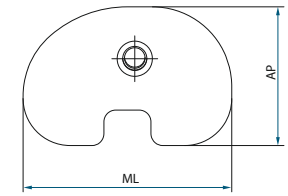
Tibial component

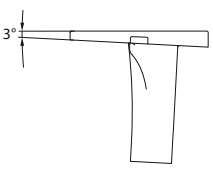
The table gives an overview on the most important dimensions of the e.motion® tibial implants

Measurements in mm

Size	ML	AP	AP / ML	L	D
T1 L / R	59	38	0.64	40	12
T2 L / R	63	41	0.65	40	12
T3 L / R	67	44	0.66	40	12
T4 L / R	71	47	0.66	45	14
T5 L / R	75	50	0.67	45	14
T6 L / R	79	53	0.67	45	14
T7 L / R	83	56	0.67	50	16
T8 L / R	87	59	0.68	50	16





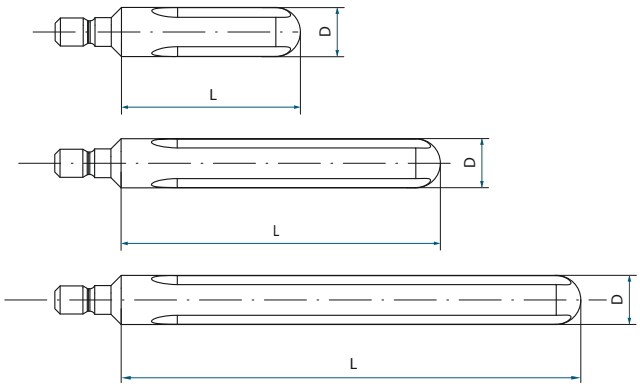


Tibia extension stem

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

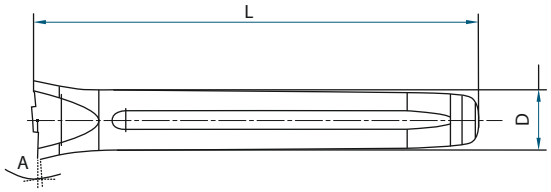


Femur extension stem

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

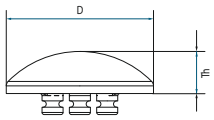


Patella component

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
6	41	12

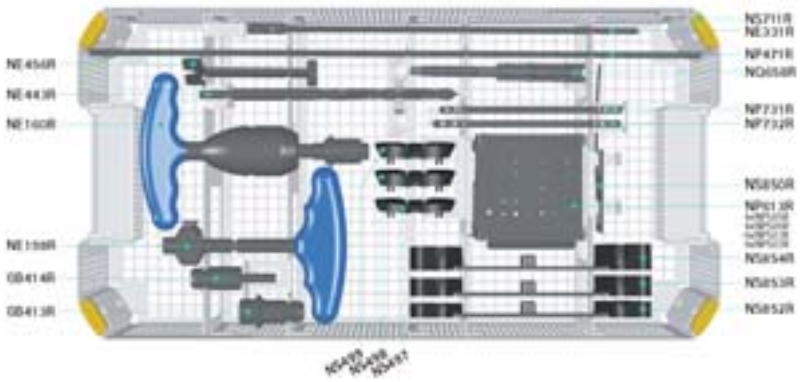


Aesculap® e.motion® System

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	e.motion® IQ Set FP Trial Meniscal Components	
NS707	e.motion® IQ Set Additional Instruments PS	
NS708	e.motion® IQ Set Tibia Extension Stems	
NS709	e.motion® IQ Set Patella Preparation	
NS720	e.motion® IQ Set Navigation Instruments	
NS730	e.motion® IQ Set PS Trial Meniscal Components	

NS701

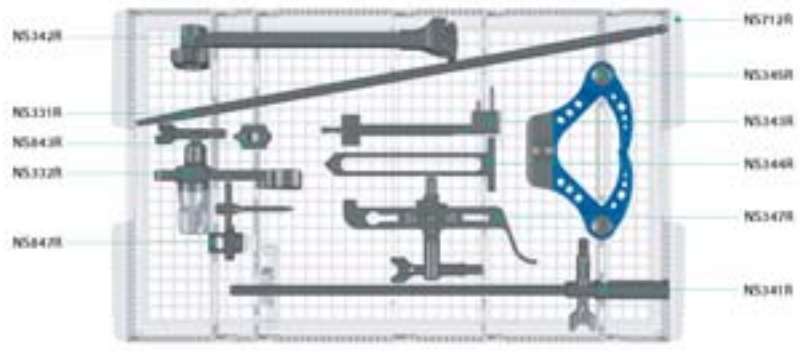


General Instruments

Qty.	Item No.	Description
1	NS716R	Tray general instruments
1	NS497	Complementary spacer 7.0 mm
1	NS498	Complementary spacer 8.5 mm
1	NS499	Complementary spacer 10.0 mm
4	NP582R	Fixation screw pins
6	NP583R	Fixation screw pins
4	NP585R	Fixation screw pins 30 mm
4	NP586R	Fixation screw pins
1	NP613R	Pin driver
1	GB413R	Acculan® II hexagonal chuck
1	GB414R	Chuck adapter
1	NS850R	Cutting depth check blade

Qty.	Item No.	Description
1	NP471R	Target rod
1	NE331R	Target rod with sleeve
1	NE456R	Check plate for guiding slots
1	NE443R	Intramedullary drill, Ø 9 x 200 mm
1	NE198R	T-handle
1	NS852R	Spacer tibial cut only 10-12
1	NS853R	Spacer tibial cut only 14-16
1	NS854R	Spacer tibial cut only 18-20
1	NE160R	Torque wrench 10 Nm with T-handle
1	NQ658R	Torque wrench adapter SW 3.5
1	NP731R	Stem tightening key D 10 mm and D 12 mm
1	NP732R	Stem tightening key D 14 mm and D 16 mm

NS702

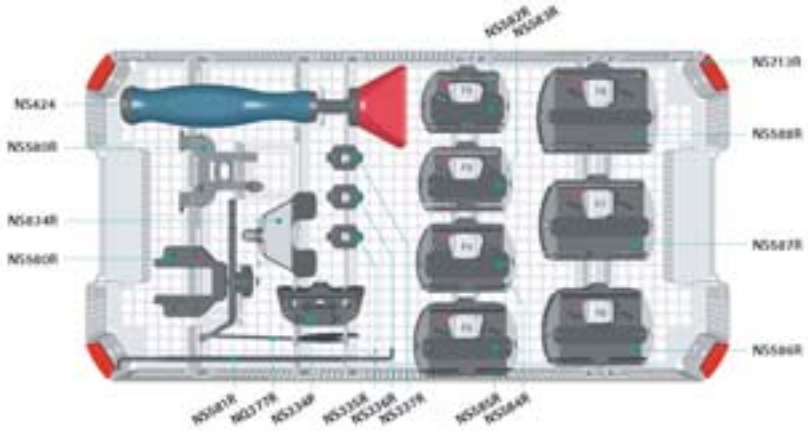


Tibia Instruments

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	Cutting depth adjustment device

NS703

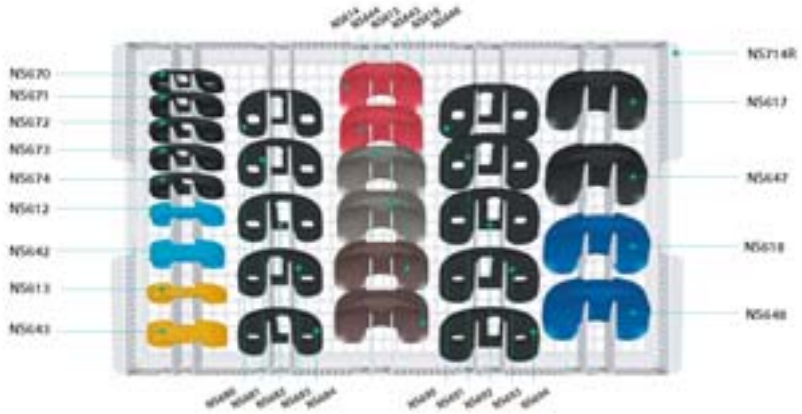


Femur Preparation

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

NS704

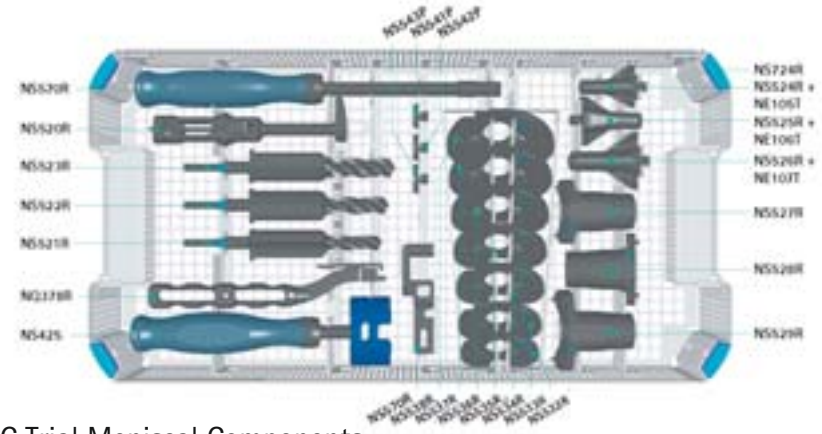


FP Trial Meniscal Components

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

Qty.	Item No.	Description
1	NS670	FP complement plate sz 1 (S) - 4 mm
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

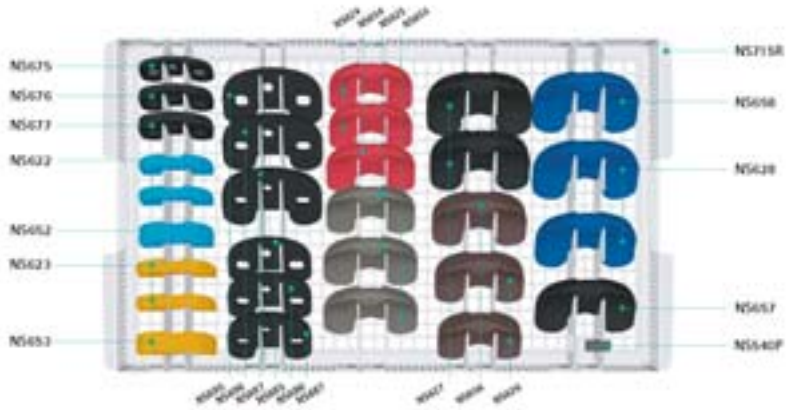
NS705



Tibia Preparation and UC Trial Meniscal Components

Qty.	Item No.	Description
1	NS724R	Tray tibia preparation
1	NS520R	Impactor/extractor handle
1	NS521R	Primary drill D 12 mm
1	NS522R	Primary drill D 14 mm
1	NS523R	Primary drill D 16 mm
1	NS524R	Tibial broach T1/T2/T3
1	NS525R	Tibial broach T4/T5/T6
1	NS526R	Tibial broach T7/T8
1	NS527R	Center. sleeve for tibial broach T1/T2/T3
1	NS528R	Center. sleeve for tibial broach T4/T5/T6
1	NS529R	Center. sleeve for tibial broach T7/T8

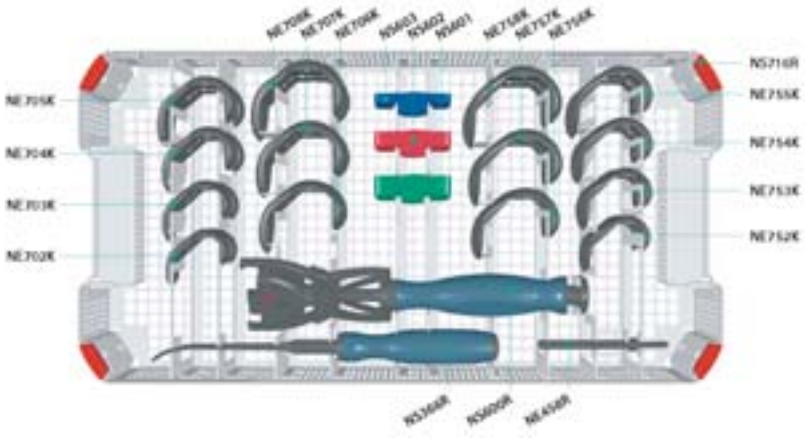
Qty.	Item No.	Description
1	NS532R	Tibia preparation plateau T2
1	NS533R	Tibia preparation plateau T3
1	NS534R	Tibia preparation plateau T4
1	NS535R	Tibia preparation plateau T5
1	NS536R	Tibia preparation plateau T6
1	NS537R	Tibia preparation plateau T7
1	NS538R	Tibia preparation plateau T8
1	NS541P	Rotating peg for preparation plateau T1/T2/T3
1	NS542P	Rotating peg for preparation plateau T4/T5/T6
1	NS543P	Rotating peg for preparation plateau T7/T8
1	NS570R	Tibia counter torque
1	NS425	Impactor
1	NQ378R	Holder for preparation plateau
1	NE105T	Trial obturator 12 mm
1	NE106T	Trial obturator 14 mm
1	NE107T	Trial obturator 16 mm



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
2	NS628	UC trial meniscal comp F8 - 6 mm
1	NS658	UC trial meniscal comp F8 - 12 mm

Qty.	Item No.	Description
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

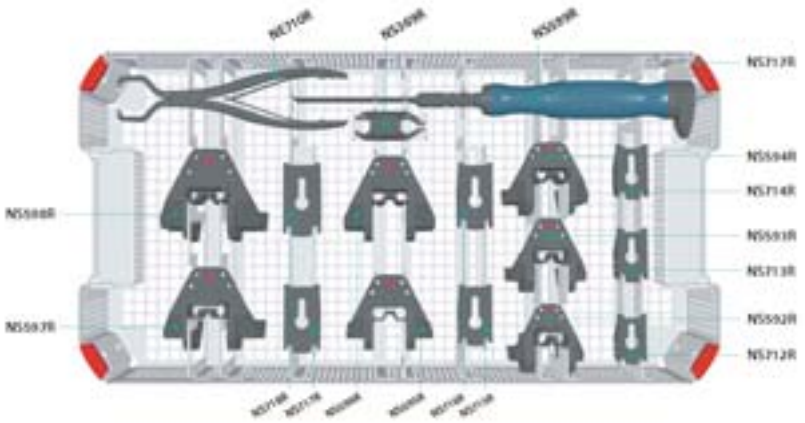


Femur Trial Implants

Qty.	Item No.	Description
1	NS716R	Tray trial components femur
1	NS600R	Implant holding/insertion instrument
1	NS601	Insert for femur F2/F3 for NS600R
1	NS602	Insert for femur F4/F5/F6 for NS600R
1	NS603	Insert for femur F7/F8 for NS600R
1	NE702K	Femoral trial implant F2 R
1	NE752K	Femoral trial implant F2 L
1	NE703K	Femoral trial implant F3 R
1	NE753K	Femoral trial implant F3 L
1	NE704K	Femoral trial implant F4 R
1	NE754K	Femoral trial implant F4 L

Qty.	Item No.	Description
1	NE705K	Femoral trial implant F5 R
1	NE755K	Femoral trial implant F5 L
1	NE706K	Femoral trial implant F6 R
1	NE756K	Femoral trial implant F6 L
1	NE707K	Femoral trial implant F7 R
1	NE757K	Femoral trial implant F7 L
1	NE708K	Femoral trial implant F8 R
1	NE758K	Femoral trial implant F8 L
1	NS366R	Chisel for posterior condyles
1	NE458R	Drill Ø 5 x 25

NS707

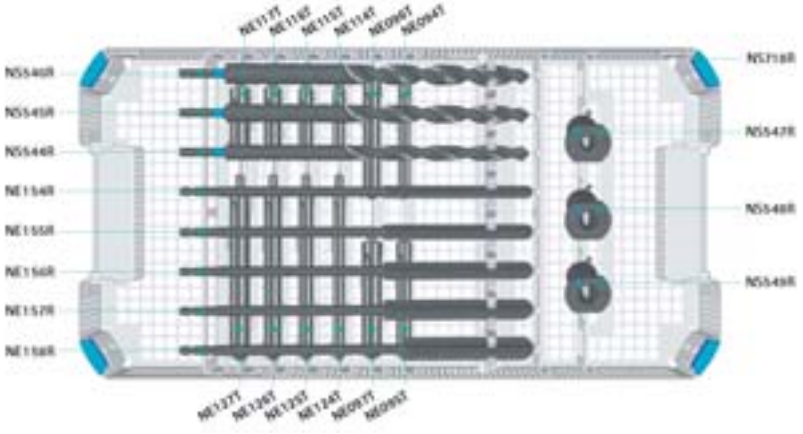


Additional Instruments PS

Qty.	Item No.	Description
1	NS717R	Tray femur box preparation
1	NS592R	Box preparation guide F2
1	NS593R	Box preparation guide F3
1	NS594R	Box preparation guide F4
1	NS595R	Box preparation guide F5
1	NS596R	Box preparation guide F6
1	NS597R	Box preparation guide F7
1	NS598R	Box preparation guide F8
1	NS599R	Box preparation chisel

Qty.	Item No.	Description
1	NE712R	Click box F2
1	NE713R	Click box F3
1	NE714R	Click box F4
1	NE715R	Click box F5
1	NE716R	Click box F6
1	NE717R	Click box F7
1	NE718R	Click box F8
1	NE710R	Click box holder
1	NS369R	Stop for box preparation chisel

NS708

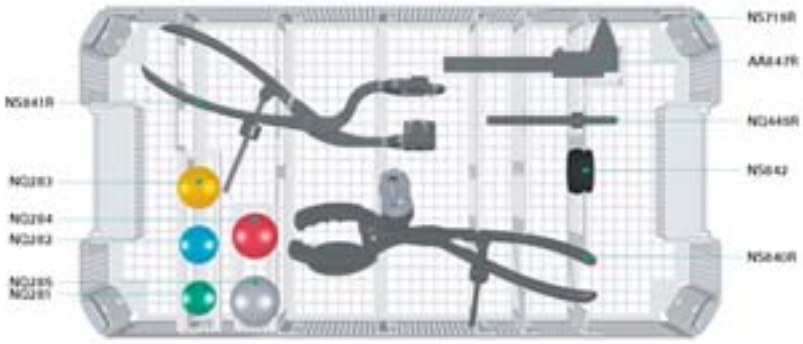


Tibia Extension Stems

Qty.	Item No.	Description
1	NS718R	Tray tibia extension stems
1	NS544R	Drill D 12 mm for extension stem 52/92
1	NS545R	Drill D 14 mm for extension stem 52/92
1	NS546R	Drill D 16 mm for extension stem 52/92
1	NS547R	Tibia drill sleeve D 12 mm
1	NS548R	Tibia drill sleeve D 14 mm
1	NS549R	Tibia drill sleeve D 16 mm
1	NE114T	Trial extension stem Ø 10, 52 mm (S)
1	NE094T	Trial extension stem Ø 10, 92 mm (M)
1	NE124T	Trial extension stem Ø 10, 132 mm (L)
1	NE115T	Trial extension stem Ø 12, 52 mm (S)
1	NE095T	Trial extension stem Ø 12, 92 mm (M)

Qty.	Item No.	Description
1	NE125T	Trial extension stem Ø 12, 132 mm (L)
1	NE116T	Trial extension stem Ø 14, 52 mm (S)
1	NE096T	Trial extension stem Ø 14, 92 mm (M)
1	NE126T	Trial extension stem Ø 14, 132 mm (L)
1	NE117T	Trial extension stem Ø 16, 52 mm (S)
1	NE097T	Trial extension stem Ø 16, 92 mm (M)
1	NE127T	Trial extension stem Ø 16, 132 mm (L)
1	NE154R	Reamer Ø 10 mm
1	NE155R	Reamer Ø 12 mm
1	NE156R	Reamer Ø 14 mm
1	NE157R	Reamer Ø 16 mm
1	NE158R	Reamer Ø 18 mm

NS709

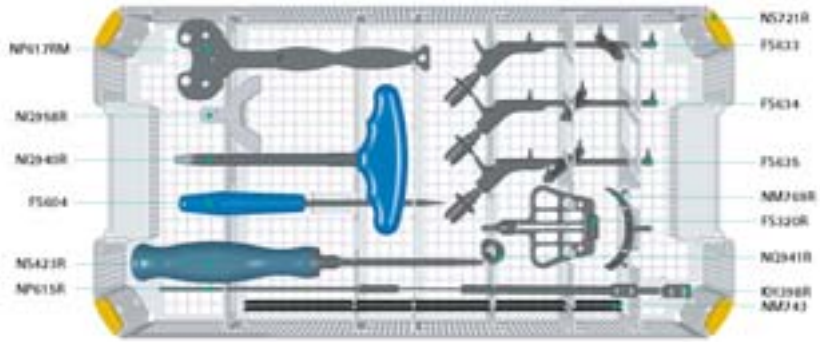


Patella Preparation

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

Qty.	Item No.	Description
1	NQ281	Trial patella 3 pegs P1 Ø 27 x 7 mm
1	NQ282	Trial patella 3 pegs P2 Ø 30 x 8 mm
1	NQ283	Trial patella 3 pegs P3 Ø 33 x 9 mm
1	NQ284	Trial patella 3 pegs P4 Ø 36 x 10 mm
1	NQ285	Trial patella 3 pegs P5 Ø 39 x 11 mm
1	NQ449R	Drill with stop Ø 6 x 28 mm

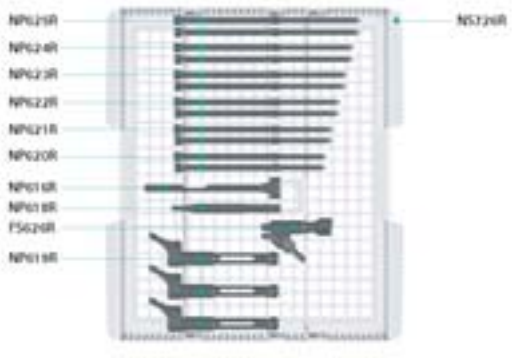
NS720



Navigation Instruments

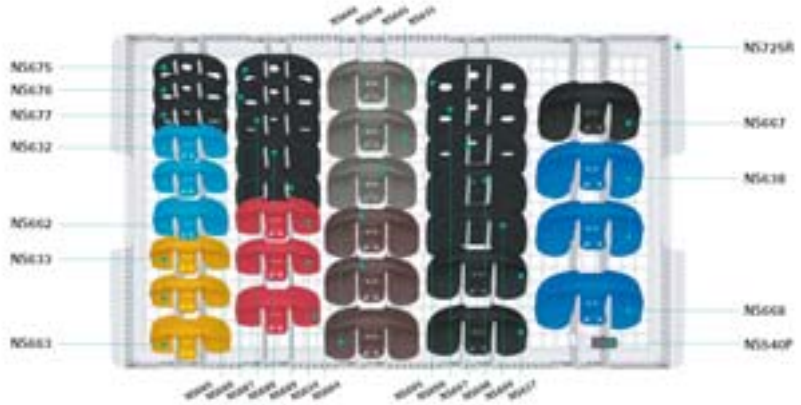
Qty.	Item No.	Description
1	NS721R	Tray navigation instruments
1	NP617RM	Tibial cut control plate
1	FS604	Straight pointer
1	FS633	Passive transmitter yellow
1	FS634	Passive transmitter blue
1	FS635	Passive transmitter red
1	NM769R	Footplate
2	NM743	2x elastic holding strap

Qty.	Item No.	Description
1	NP615R	Drill, Ø 3.2 mm
1	KH398R	Screw length measuring device
1	NQ941R	Soft-tissue protector for transmitter screw
1	NQ940R	Soft-tissue protector handle for transmitter screw
1	NS320R	Navigated femur alignment block
1	NQ958R	Y-footplate for alignment block
1	NS423R	Screw driver SW 3.5



Qty.	Item No.	Description
1	NS726R	Tray insert navigation instruments
3	NP619R	3x screw sleeve with adapter
1	NP618R	Screw driver with hex connection, Ø 3.5 mm
1	NP616R	Insertion aid, Ø 3.2 mm
2	NP620R	2x bicortical screws, 30 mm
2	NP621R	2x bicortical screws, 35 mm
2	NP622R	2x bicortical screws, 40 mm
2	NP623R	2x bicortical screws, 45 mm
2	NP624R	2x bicortical screws, 50 mm
2	NP625R	2x bicortical screws, 55 mm
1	FS626R	Modular rigid body adapter

NS730



PS Trial Meniscal Components

Qty.	Item No.	Description
1	NS725R	Tray PS trial meniscal components
2	NS632	PS trial meniscal comp F2 - 6 mm
1	NS662	PS trial meniscal comp F2 - 12 mm
2	NS633	PS trial meniscal comp F3 - 6 mm
1	NS663	PS trial meniscal comp F3 - 12 mm
2	NS634	PS trial meniscal comp F4 - 6 mm
1	NS664	PS trial meniscal comp F4 - 12 mm
2	NS635	PS trial meniscal comp F5 - 6 mm
1	NS665	PS trial meniscal comp F5 - 12 mm
2	NS636	PS trial meniscal comp F6 - 6 mm
1	NS666	PS trial meniscal comp F6 - 12 mm
2	NS637	PS trial meniscal comp F7 - 6 mm
1	NS667	PS trial meniscal comp F7 - 12 mm
2	NS638	PS trial meniscal comp F8 - 6 mm
1	NS668	PS trial meniscal comp F8 - 12 mm

Qty.	Item No.	Description
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	NS688	PS complement plate sz 2 (M) - 10 mm
1	NS689	PS complement plate sz 2 (M) - 12 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	NS698	PS complement plate sz 3 (L) - 10 mm
1	NS699	PS complement plate sz 3 (L) - 12 mm
1	NS540P	Trial plug UC/PS

Aesculap® e.motion® System

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

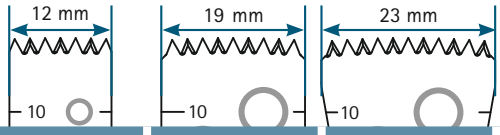
NS579R Femur orientation sleeve 9°

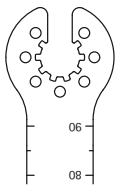
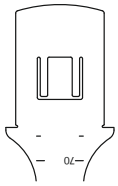
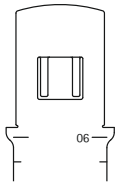
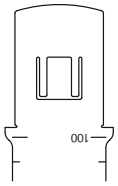
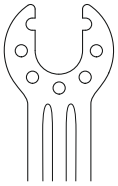
NE150R Leg positioner for TKA
NE153R Fixation frame

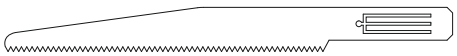
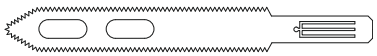
NS844R Tibia IM orientation sleeve 3°

Sawblades

- Thickness: 1.27 mm



Connection / Width	Aesculap Length 90 mm	Aesculap Acculan® 3 Ti Length 75 mm	Aesculap Acculan® 3 Ti Length 90 mm	Aesculap Acculan® 3 Ti Length 100 mm	Stryker System 4 + 5 System2000	Conmed/Linvat ec/Hall PowerPro Versipower plus	Synthes
							
9 mm		GE231SU					
13 mm	GE266SU		GE236SU		GE222R	GE220R	GE224R
19 mm	GE271SU		GE241SU	GE249SU			
23 mm	GE276SU		GE246SU		GE223R (25 mm)	GE221R (25 mm)	GE225R (25 mm)

Reciprocating Sawblade 75/10/1.0/1.2 mm	Reciprocating Sawblade 75/12/1.0/1.2 mm
	
GC769R	GC771R

Sawblades: delivered sterile, single use, pack of 1

e.motion® Implant Matrix – Femoral Parts

Femur FP / UC cemented

Types:	F2	F3	F4	F5	F6	F7	F8
Left	NO502K	NO503K	NO504K	NO505K	NO506K	NO507K	NO508K
Right	NO602K	NO603K	NO604K	NO605K	NO606K	NO607K	NO608K

Femur FP / UC cementless

Types:	F2	F3	F4	F5	F6	F7	F8
Left	NO582K	NO583K	NO584K	NO585K	NO586K	NO587K	NO588K
Right	NO682K	NO683K	NO684K	NO685K	NO686K	NO687K	NO688K

Nut for Femur Ext. Stem

NB140K

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

Femur PS cementless

Types:	F2	F3	F4	F5	F6	F7	F8
Left	NB712K	NB713K	NB714K	NB715K	NB716K	NB717K	NB718K
Right	NB762K	NB763K	NB764K	NB765K	NB766K	NB767K	NB768K

Femur Ext. Stems cemented

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

Meniscal Component

	FP – left							UC – left							PS – left						
Types:	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8
10	NO542	NO543	NO544	NO545	NO546	NO547	NO548	NR802	NR803	NR804	NR805	NR806	NR807	NR808	NB802	NB803	NB804	NB805	NB806	NB807	NB808
12	NO552	NO553	NO554	NO555	NO556	NO557	NO558	NR812	NR813	NR814	NR815	NR816	NR817	NR818	NB812	NB813	NB814	NB815	NB816	NB817	NB818
14	NO562	NO563	NO564	NO565	NO566	NO567	NO568	NR822	NR823	NR824	NR825	NR826	NR827	NR828	NB822	NB823	NB824	NB825	NB826	NB827	NB828
16	NO572	NO573	NO574	NO575	NO576	NO577	NO578	NR832	NR833	NR834	NR835	NR836	NR837	NR838	NB832	NB833	NB834	NB835	NB836	NB837	NB838
18	NO592	NO593	NO594	NO595	NO596	NO597	NO598	NR842	NR843	NR844	NR845	NR846	NR847	NR848	NB842	NB843	NB844	NB845	NB846	NB847	NB848
20	NO782	NO783	NO784	NO785	NO786	NO787	NO788	NR852	NR853	NR854	NR855	NR856	NR857	NR858	NB852	NB853	NB854	NB855	NB856	NB857	NB858
22																	NB864	NB865	NB866	NB867	NB868
24																	NB874	NB875	NB876	NB877	NB878

Meniscal Component

	FP – right							UC – right							PS – right						
Types:	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8
10	NO642	NO643	NO644	NO645	NO646	NO647	NO648	NR902	NR903	NR904	NR905	NR906	NR907	NR908	NB902	NB903	NB904	NB905	NB906	NB907	NB908
12	NO652	NO653	NO654	NO655	NO656	NO657	NO658	NR912	NR913	NR914	NR915	NR916	NR917	NR918	NB912	NB913	NB914	NB915	NB916	NB917	NB918
14	NO662	NO663	NO664	NO665	NO666	NO667	NO668	NR922	NR923	NR924	NR925	NR926	NR927	NR928	NB922	NB923	NB924	NB925	NB926	NB927	NB928
16	NO672	NO673	NO674	NO675	NO676	NO677	NO678	NR932	NR933	NR934	NR935	NR936	NR937	NR938	NB932	NB933	NB934	NB935	NB936	NB937	NB938
18	NO692	NO693	NO694	NO695	NO696	NO697	NO698	NR942	NR943	NR944	NR945	NR946	NR947	NR948	NB942	NB943	NB944	NB945	NB946	NB947	NB948
20	NO792	NO793	NO794	NO795	NO796	NO797	NO798	NR952	NR953	NR954	NR955	NR956	NR957	NR958	NB952	NB953	NB954	NB955	NB956	NB957	NB958
22																	NB964	NB965	NB966	NB967	NB968
24																	NB974	NB975	NB976	NB977	NB978

Distal Femoral 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

Patella

Types:	F2–F8
P1	NO481 or NX041
P2	NO482 or NX042
P3	NO483 or NX043
P4	NO484 or NX044
P5	NO485 or NX045

Postero-Distal Femoral 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

Femur Extension Stems cemented

	5°				7°			
Types:	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

e.motion® Implant Matrix – Tibial Parts

Tibia FP Monobloc cemented

Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NO521K	NO522K	NO523K	NO524K	NO525K	NO526K	NO527K	NO528K
Right	NO621K	NO622K	NO623K	NO624K	NO625K	NO626K	NO627K	NO628K

Tibia FP Modular cemented

Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB521K	NB522K	NB523K	NB524K	NB525K	NB526K	NB527K	NB528K
Right	NB621K	NB622K	NB623K	NB624K	NB625K	NB626K	NB627K	NB628K

Tibia Ext. Stems cemented

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

Tibia Ext. Stems cementless

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

Tibial Augments

4 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB401K	NB402K	NB403K	NB404K	NB405K	NB406K	NB407K	NB408K

8 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB421K	NB422K	NB423K	NB424K	NB425K	NB426K	NB427K	NB428K
Right	NB431K	NB432K	NB433K	NB434K	NB435K	NB436K	NB437K	NB438K

12 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB461K	NB462K	NB463K	NB464K	NB465K	NB466K	NB467K	NB468K
Right	NB471K	NB472K	NB473K	NB474K	NB475K	NB476K	NB477K	NB478K

Tibia UC / PS Modular cemented

Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB731K	NB732K	NB733K	NB734K	NB735K	NB736K	NB737K	NB738K
Right	NB781K	NB782K	NB783K	NB784K	NB785K	NB786K	NB787K	NB788K

Tibia FP Modular cementless

Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB591K	NB592K	NB593K	NB594K	NB595K	NB596K	NB597K	NB598K
Right	NB691K	NB692K	NB693K	NB694K	NB695K	NB696K	NB697K	NB698K

Tibia UC / PS Modular cementless

Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB741K	NB742K	NB743K	NB744K	NB745K	NB746K	NB747K	NB748K
Right	NB791K	NB792K	NB793K	NB794K	NB795K	NB796K	NB797K	NB798K

Tibia-Obturator

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

Tibial Augments

4 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB411K	NB412K	NB413K	NB414K	NB415K	NB416K	NB417K	NB418K

8 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB441K	NB442K	NB443K	NB444K	NB445K	NB446K	NB447K	NB448K
Right	NB451K	NB452K	NB453K	NB454K	NB455K	NB456K	NB457K	NB458K

12 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB461K	NB462K	NB463K	NB464K	NB465K	NB466K	NB467K	NB468K
Right	NB471K	NB472K	NB473K	NB474K	NB475K	NB476K	NB477K	NB478K

AS e.motion® Implant Matrix – Femoral Parts

Femur FP cemented

Types:	F2	F3	F4	F5	F6	F7	F8
Left	NO502Z	NO503Z	NO504Z	NO505Z	NO506Z	NO507Z	NO508Z
Right	NO602Z	NO603Z	NO604Z	NO605Z	NO606Z	NO607Z	NO608Z

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

Nut for Femur Ext. Stem

NB140Z

Femur Ext. Stems cemented

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

Meniscal Component

FP – left								UC – left							PS – left						
Types:	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8
10	NO542	NO543	NO544	NO545	NO546	NO547	NO548	NR802	NR803	NR804	NR805	NR806	NR807	NR808	NB802	NB803	NB804	NB805	NB806	NB807	NB808
12	NO552	NO553	NO554	NO555	NO556	NO557	NO558	NR812	NR813	NR814	NR815	NR816	NR817	NR818	NB812	NB813	NB814	NB815	NB816	NB817	NB818
14	NO562	NO563	NO564	NO565	NO566	NO567	NO568	NR822	NR823	NR824	NR825	NR826	NR827	NR828	NB822	NB823	NB824	NB825	NB826	NB827	NB828
16	NO572	NO573	NO574	NO575	NO576	NO577	NO578	NR832	NR833	NR834	NR835	NR836	NR837	NR838	NB832	NB833	NB834	NB835	NB836	NB837	NB838
18	NO592	NO593	NO594	NO595	NO596	NO597	NO598	NR842	NR843	NR844	NR845	NR846	NR847	NR848	NB842	NB843	NB844	NB845	NB846	NB847	NB848
20	NO782	NO783	NO784	NO785	NO786	NO787	NO788	NR852	NR853	NR854	NR855	NR856	NR857	NR858	NB852	NB853	NB854	NB855	NB856	NB857	NB858
22																	NB864	NB865	NB866	NB867	NB868
24																	NB874	NB875	NB876	NB877	NB878

FP – right								UC – right							PS – right						
Types:	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8	F2	F3	F4	F5	F6	F7	F8
10	NO642	NO643	NO644	NO645	NO646	NO647	NO648	NR902	NR903	NR904	NR905	NR906	NR907	NR908	NB902	NB903	NB904	NB905	NB906	NB907	NB908
12	NO652	NO653	NO654	NO655	NO656	NO657	NO658	NR912	NR913	NR914	NR915	NR916	NR917	NR918	NB912	NB913	NB914	NB915	NB916	NB917	NB918
14	NO662	NO663	NO664	NO665	NO666	NO667	NO668	NR922	NR923	NR924	NR925	NR926	NR927	NR928	NB922	NB923	NB924	NB925	NB926	NB927	NB928
16	NO672	NO673	NO674	NO675	NO676	NO677	NO678	NR932	NR933	NR934	NR935	NR936	NR937	NR938	NB932	NB933	NB934	NB935	NB936	NB937	NB938
18	NO692	NO693	NO694	NO695	NO696	NO697	NO698	NR942	NR943	NR944	NR945	NR946	NR947	NR948	NB942	NB943	NB944	NB945	NB946	NB947	NB948
20	NO792	NO793	NO794	NO795	NO796	NO797	NO798	NR952	NR953	NR954	NR955	NR956	NR957	NR958	NB952	NB953	NB954	NB955	NB956	NB957	NB958
22																	NB964	NB965	NB966	NB967	NB968
24																	NB974	NB975	NB976	NB977	NB978

Distal Femur Wedges

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							

Femur Extension Stems cementless

	5°				7°			
Types:	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

Patella 3-Peg

Types:	F2–F8
P1	NO481 or NX041
P2	NO482 or NX042
P3	NO483 or NX043
P4	NO484 or NX044
P5	NO485 or NX045

Postero-Distal Femur Wedges

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							
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 x 4 mm							
12 x 8 mm							
12 x 12 mm							

AS e.motion® Implant Matrix – Tibial Parts

Tibia FP Modular cemented

Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB521Z	NB522Z	NB523Z	NB524Z	NB525Z	NB526Z	NB527Z	NB528Z
Right	NB621Z	NB622Z	NB623Z	NB624Z	NB625Z	NB626Z	NB627Z	NB628Z

Tibia UC/PS Modular cemented

Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB731Z	NB732Z	NB733Z	NB734Z	NB735Z	NB736Z	NB737Z	NB738Z
Right	NB781Z	NB782Z	NB783Z	NB784Z	NB785Z	NB786Z	NB787Z	NB788Z

UC Rotation Axis for Meniscal Component

Types:	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm
	NR900Z	NR910Z	NR920Z	NR930Z	NR940Z	NR950Z

PS Rotation Axis for Meniscal Component

Types:	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm	22 mm	24 mm
	NB900Z	NB910Z	NB920Z	NB930Z	NB940Z	NB950Z	NB960Z	NB970Z

Tibia Ext. Stems cemented

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

Tibia Ext. Stems cementless

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

Tibia-Obturator

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

Tibial Wedges Medial

4 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB401Z	NB402Z	NB403Z	NB404Z	NB405Z	NB406Z	NB407Z	NB408Z

8 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB421Z	NB422Z	NB423Z	NB424Z	NB425Z	NB426Z	NB427Z	NB428Z
Right	NB431Z	NB432Z	NB433Z	NB434Z	NB435Z	NB436Z	NB437Z	NB438Z

12 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB461Z	NB462Z	NB463Z	NB464Z	NB465Z	NB466Z	NB467Z	NB468Z
Right	NB471Z	NB472Z	NB473Z	NB474Z	NB475Z	NB476Z	NB477Z	NB478Z

Tibial Wedges Lateral

4 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left + Right	NB411Z	NB412Z	NB413Z	NB414Z	NB415Z	NB416Z	NB417Z	NB418Z

8 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB441Z	NB442Z	NB443Z	NB444Z	NB445Z	NB446Z	NB447Z	NB448Z
Right	NB451Z	NB452Z	NB453Z	NB454Z	NB455Z	NB456Z	NB457Z	NB458Z

12 mm								
Types:	T1	T2	T3	T4	T5	T6	T7	T8
Left	NB481Z	NB482Z	NB483Z	NB484Z	NB485Z	NB486Z	NB487Z	NB488Z
Right	NB491Z	NB492Z	NB493Z	NB494Z	NB495Z	NB496Z	NB497Z	NB498Z

Notes

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