






GEMINI SL Total Knee System
with SPAR-K Instruments

Explanation of Pictograms			
	Manufacturer		Article number
	Material (number)	RX only	Caution: Federal law restricts this device to sale by or on the order of a physician

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GEMINI SL Total Knee System with SPAR-K Instruments

The **GEMINI SPAR-K Instruments** are designed to meet the need of today's knee surgeons. The instruments assure precise and reliable bone resections and allow a variety of surgical options.¹

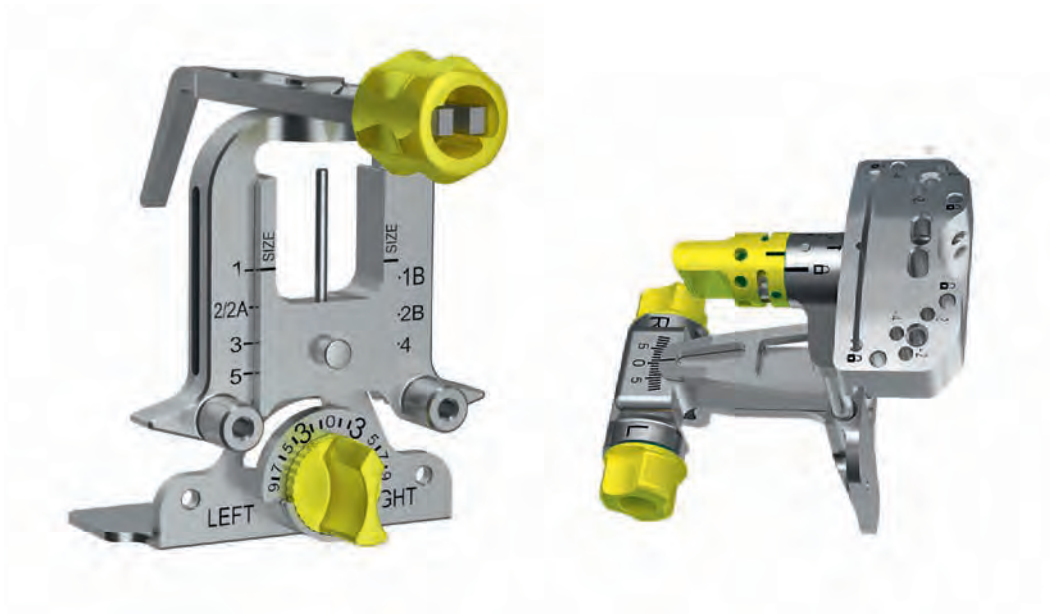
The **GEMINI SPAR-K Instruments** feature:

- color coded actuators,
- quick set/release functions,
- single layer trays,

The **GEMINI SPAR-K Instruments** allow for a potential reduction of the learning curve and reduced effort throughout the surgical process for both surgeon and scrub-tech staff. Preparation may be initiated at either the femur or the tibia. Spacer blocks are provided for extension and flexion gap evaluation.

Patella instrumentation is available for compatible preparation of patella resurfacing. Furthermore, EXTRABONE, EM femoral referencing instrumentation, is also available.

¹ Internal data on file (Design History File DOC-10560)

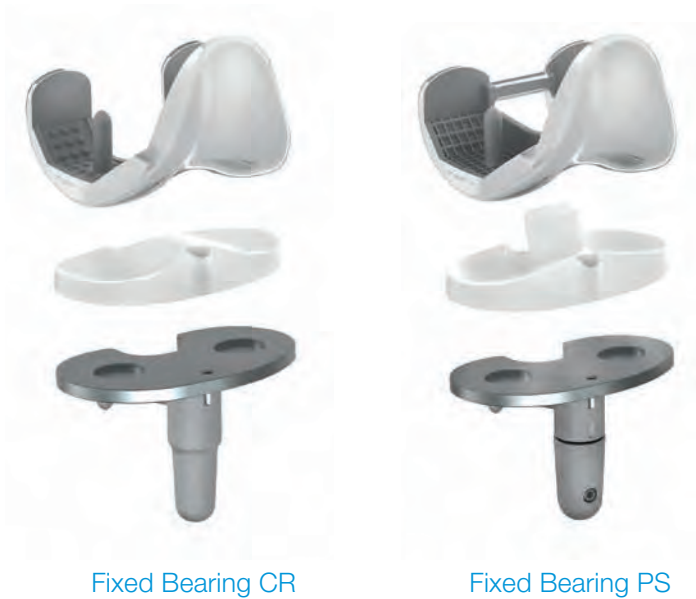


The **GEMINI SL Total Knee System** is part of the **LINK SL Knee Family** concept. **SL** stands for “System-integrated soLution”:

- Extended compatibility of all prosthesis components.
- Implant system for primary and revision knee surgery.

The **GEMINI SL Total Knee System** includes the following two configurations:

- Fixed Bearing CR (Cruciate Retaining).
- Fixed Bearing PS (Posterior Stabilized).



The **GEMINI SL Total Knee System** configurations are composed of the following components:

- Femoral Component (cemented and with LINK PorEx Technology).
- Articulating Surface, anatomic (Polyethylene Plateau CR Fixed Bearing and PS Fixed Bearing).
- Tibial Component, modular, anatomic (cemented and with LINK PorEx Technology).
- Tibial Component, not modular, anatomic (cemented).
- Taper Cap (cemented and cementless).
- Modular Stem Extension (cemented and cementless).
- Patella Resurfacing Component (polyethylene 3-peg patella).

Fixed Bearing CR

- Cruciate Retaining configuration for use with intact ligaments and capsule and adequate joint stability.
- Featuring extended trochlear groove.
- Same tibial component for Fixed Bearing CR and PS.



Fixed Bearing PS

- Posterior Stabilized configuration for use in the absence of posterior cruciate ligament (PCL) function.
- Providing reduced risk of dislocation and reduced contact pressure in deep flexion.²
- Featuring bone-preserving design with size-specific intercondylar femoral box dimensions.



LINK PorEx Technology

- TiNbN = Titanium Niobium Nitride Surface Modification resulting in a ceramic-like surface, which significantly reduces cobalt, chromium and nickel ion release.³
- Extremely hard surface with abrasion properties similar to those of ceramics.
- Larger wetting angle of the surface gives it a low friction coefficient when in contact with synovial fluid.³

² Internal data on file (MAR-01064): White Paper GEMINI SL Fixed Bearing PS: Biomechanical Analysis of the Post-Cam System, Prof. Bernardo Innocenti, Université Libre de Bruxelles, École polytechnique de Bruxelles, BEAMS Department (Bio Electro and Mechanical Systems)

³ Internal data on file: Study of the influence of TiNbN-coating on the ion release of CoCrMo-alloys in SBF buffer simulator testing

Compatibility Table

The following table shows possible size combinations.

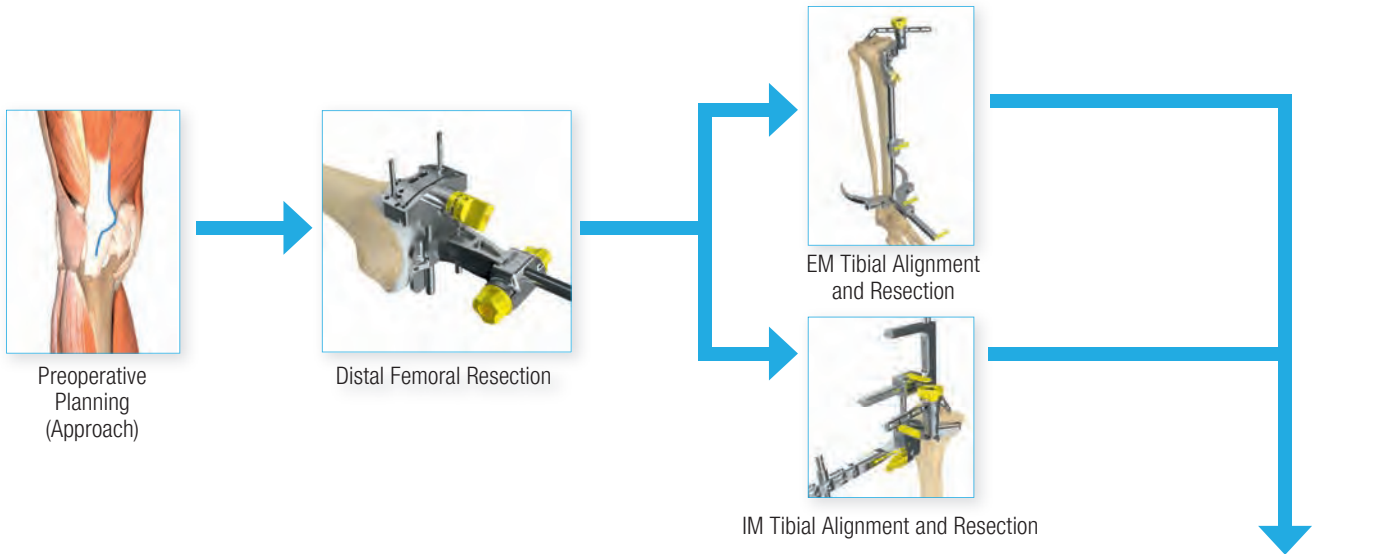
Compatibility: Femoral/Tibial Components

		Femoral Components							
		1	1B	2	2A	2B	3	4	5
PE Articulating Surfaces		1	1B	2	2A/B		3	4	5
Tibial Components	1	XX	X	X	-	-	-	-	-
	2	XX	XX	XX	X	X	X	-	-
	3	XX	XX	XX	XX	XX	XX	X	-
	4	XX	XX	XX	XX	XX	XX	XX	X
	5	XX	XX	XX	XX	XX	XX	XX	XX

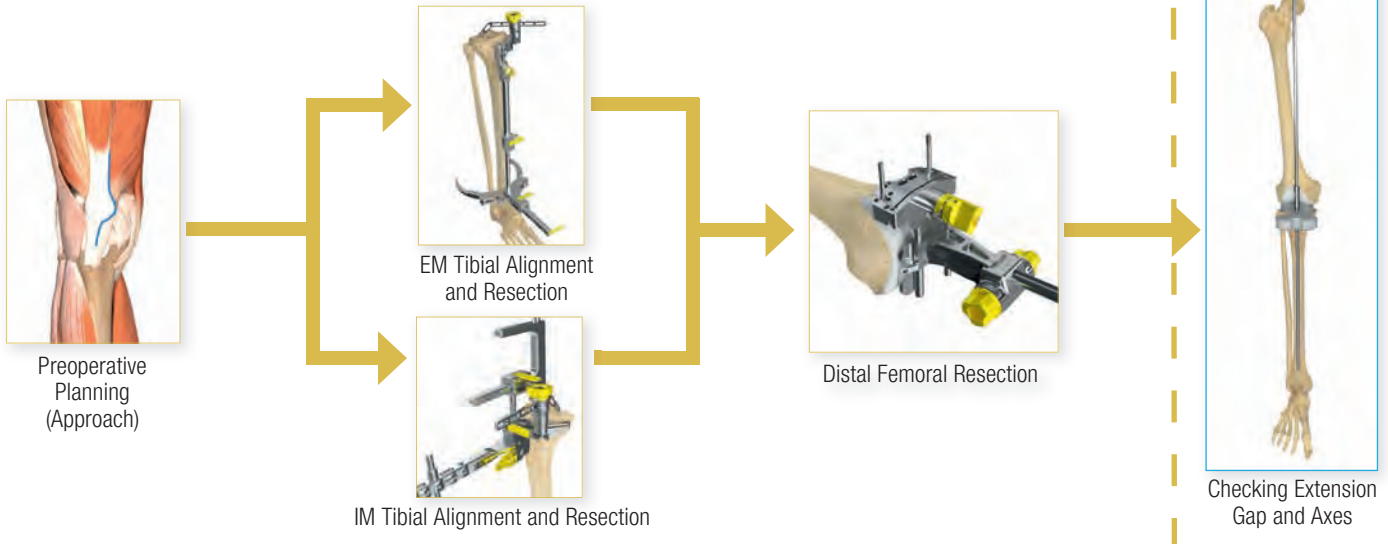
XX = unrestricted compatibility
 XX = recommended combination
 X = restricted compatibility, depending on the patient's soft tissue situation in relation to the articulating surface
 - = prohibited combination

It is mandatory that the size of the PE Tibial Articular Surface has to match the size of Femoral Component.

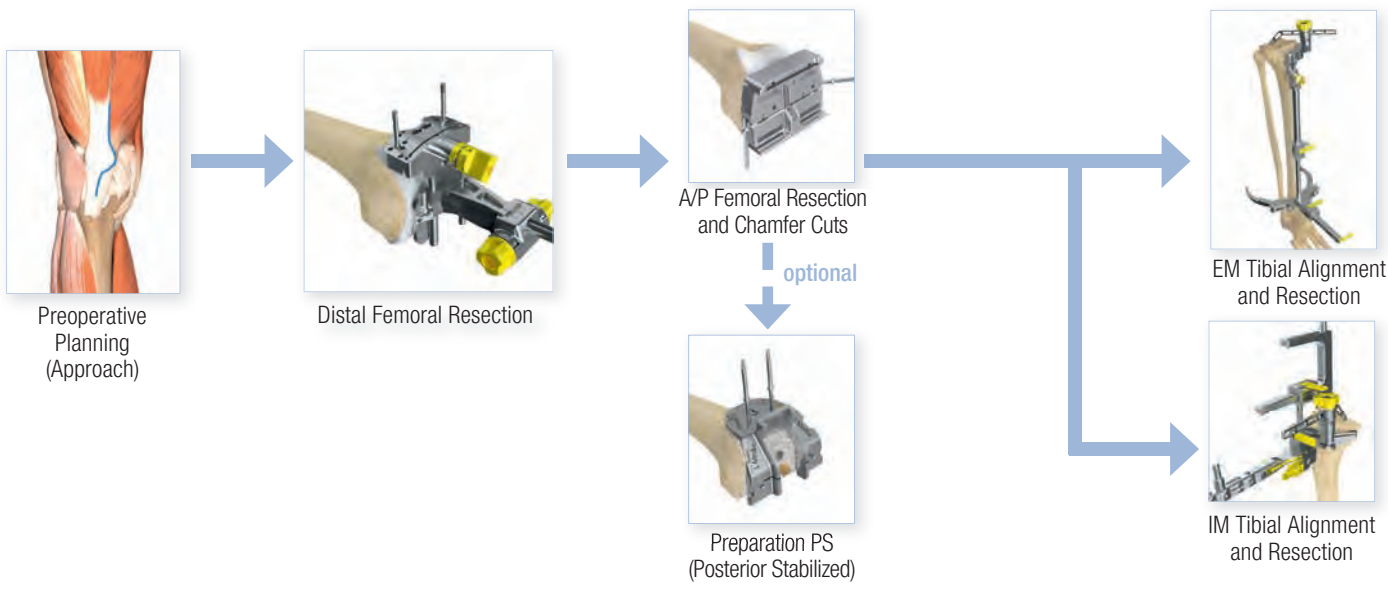
Distal Cut First



Tibia First



Femur First



spar-K



A/P Femoral Resection and Chamfer Cuts

optional



Preparation PS (Posterior Stabilized)



Tibial Preparation



Trial Reduction and Functional Test

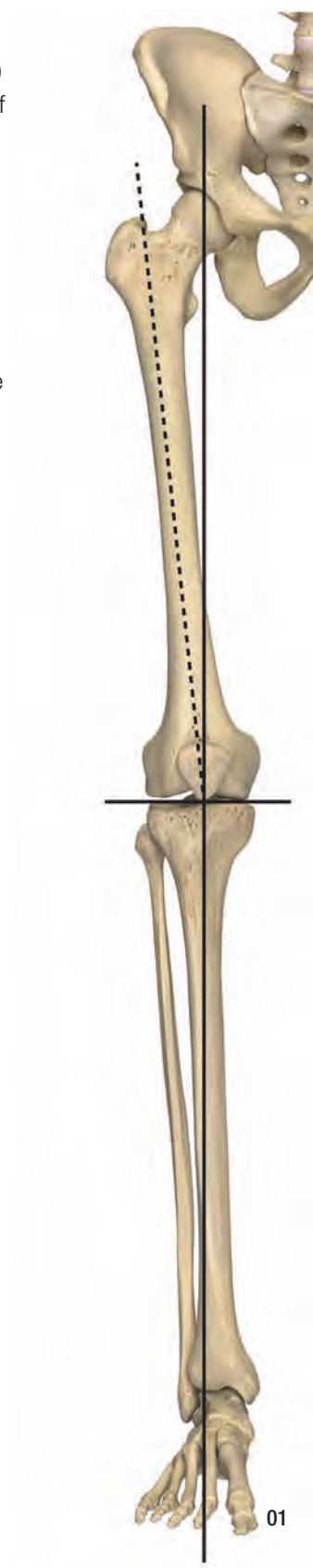


Final Implantation

Preoperative Planning

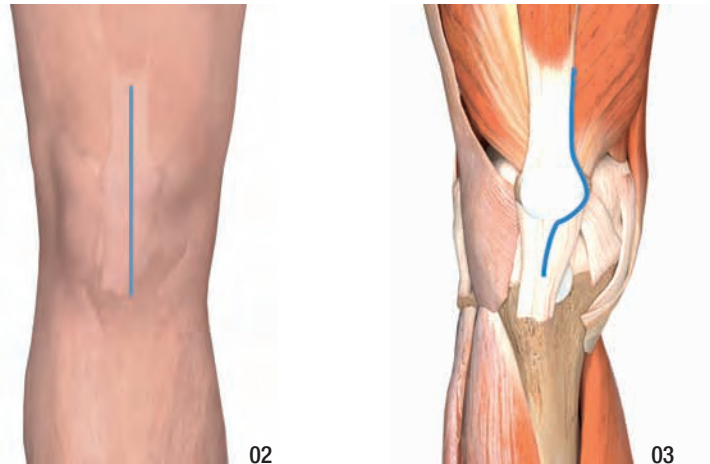
The anatomic landmarks in the knee joint are defined preoperatively by imaging the whole leg on the healthy side and the affected side in the standing position. The angle between the anatomic axis (center of knee joint – intramedullary canal) and the mechanical axis (center of femoral head – center of knee joint – center of ankle to the second toe) determines the valgus angle **(01)**.

These angles should be determined for both knees. The valgus angle of a healthy knee joint is approximately 5° – 7° . In comparison with the healthy side, and for the purpose of reconstructing the corresponding valgus angle in the affected knee joint, this angle must be determined before carrying out the distal femoral resection. The appropriate implant size can be estimated preoperatively with X-ray templates. The necessary resections are determined by the size of the implant and the deformity corrections required.

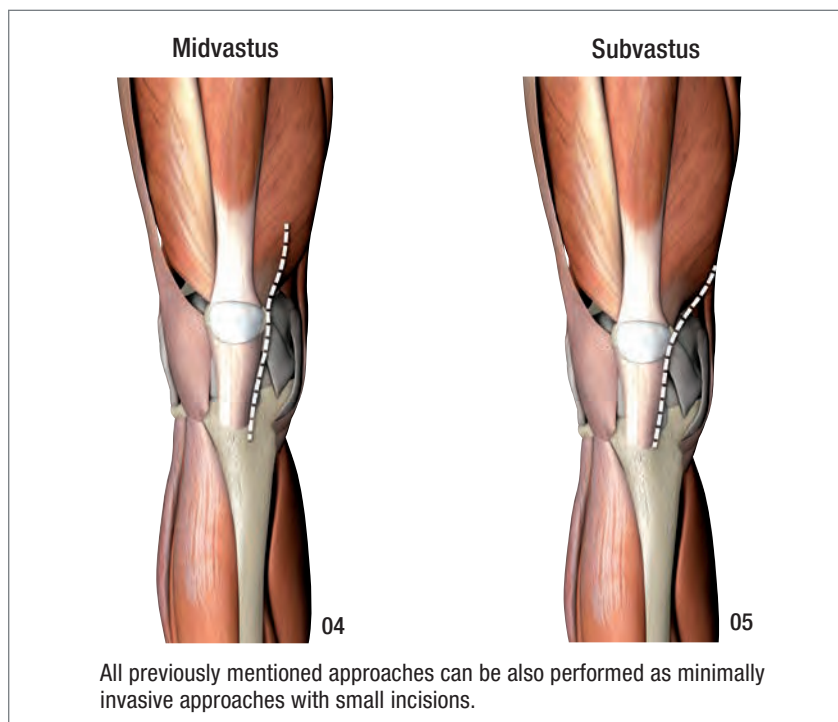


Approaches

With the knee in slight flexion, a straight incision is made over the patella, as far as the tibial tuberosity (02). A medial parapatellar incision is made through the patellar retinaculum, capsule and synovial membrane (03). When making the parapatellar incision, the patella is pushed to one side to visualize the patello-femoral joint. Removal of the hypertrophic synovial membrane and parts of the fat pad allows access to the medial, lateral and intracondylar parts of the joint. Excess synovium should be removed in order to avoid postoperative impingement and adhesions. Some surgeons prefer total synovectomy.

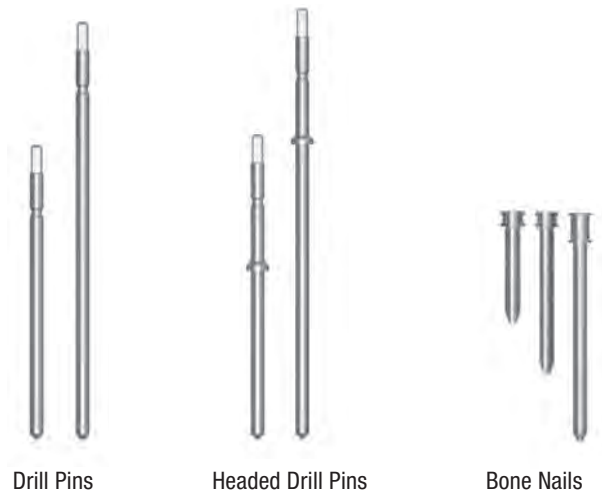


Alternative Approaches:

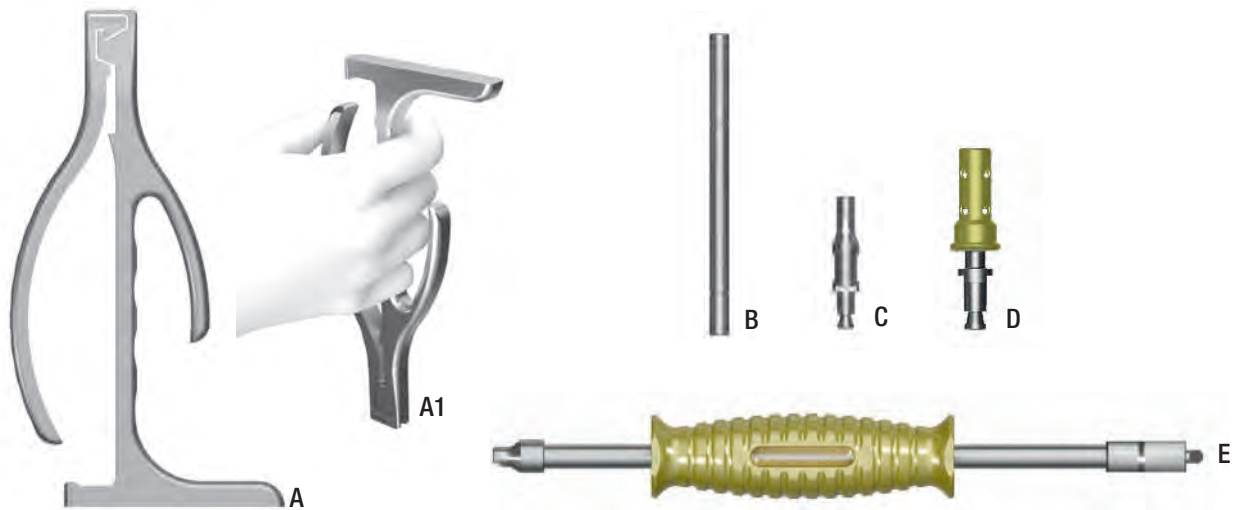


Pins, Pin Instruments and Sawblades

The **GEMINI SPAR-K Instruments** are designed to be used with:



The Drill Pins, Headed Drill Pins and Bone Nails can be hammered in using the **Universal Pin Inserter/Extractor (A)** or using the **Universal Pin Inserter (B)**. They can be pulled out using the **Universal Pin Inserter/Extractor (A)** and are also designed to be drilled in and removed using the **Power Driver (C)** or with the **Power Driver with Snap Lock (D)**. The Bone Nail can be pulled out using the **Universal Pin Inserter/Extractor (A)** or the **Slaphammer (E)**.



ATTENTION: Use the **Universal Pin Inserter/Extractor (A)** as shown in the picture (A1).

OPTIONAL:

The **GEMINI SPAR-K Instruments** are designed to be used also with **Thread Pins***, headed or not headed.



ATTENTION: The **Thread Pins*** are designed to be drilled in and removed using the **Power Driver (C)** or the **Power Driver with Snap Lock (D)** only.

* only upon request

The GEMINI SPAR-K Instruments are designed for use with Sawblades **up to a max. thickness of 1.27 mm.**

Determination of the Femoral Resection Level

The Femoral Template is used to verify the femoral size previously selected in preoperative planning and to determine the femoral resection level. The femoral size is determined by holding the Femoral Template against the bone, the contour shown corresponds to size 3 (06).

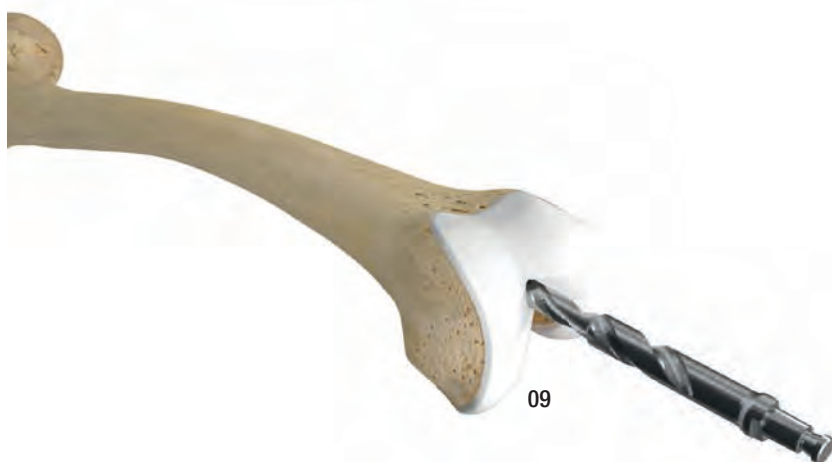
- If the femur profile is a perfect fit or larger, the Distal Femoral Cutting Block is left in the “0” hole position (large femur, size 3 to 5).
- If the femur profile is smaller, the Distal Femoral Cutting Block should be later re-positioned in the -2 holes position (small femur, size 1 to 2B).

Additionally the M/L dimension can be checked (07).



ATTENTION: The final size of the femoral component is not assessed during this step, and will be addressed later in the surgical technique.

For femoral preparation, the knee is flexed to 90°. The entry point for opening the femur can be marked with an electrocautery, for example (08). It is usually located approx. 3-5 mm medially above the intercondylar fossa. The medullary canal is opened with the Step Drill (09).



Instruments



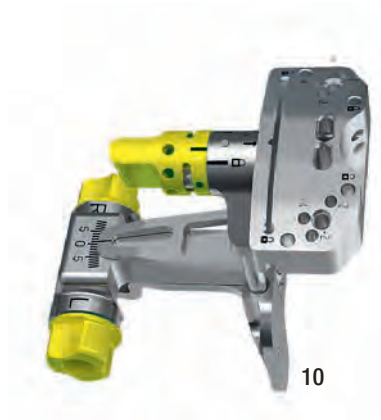
317-845/00 Femoral Sizer/Template



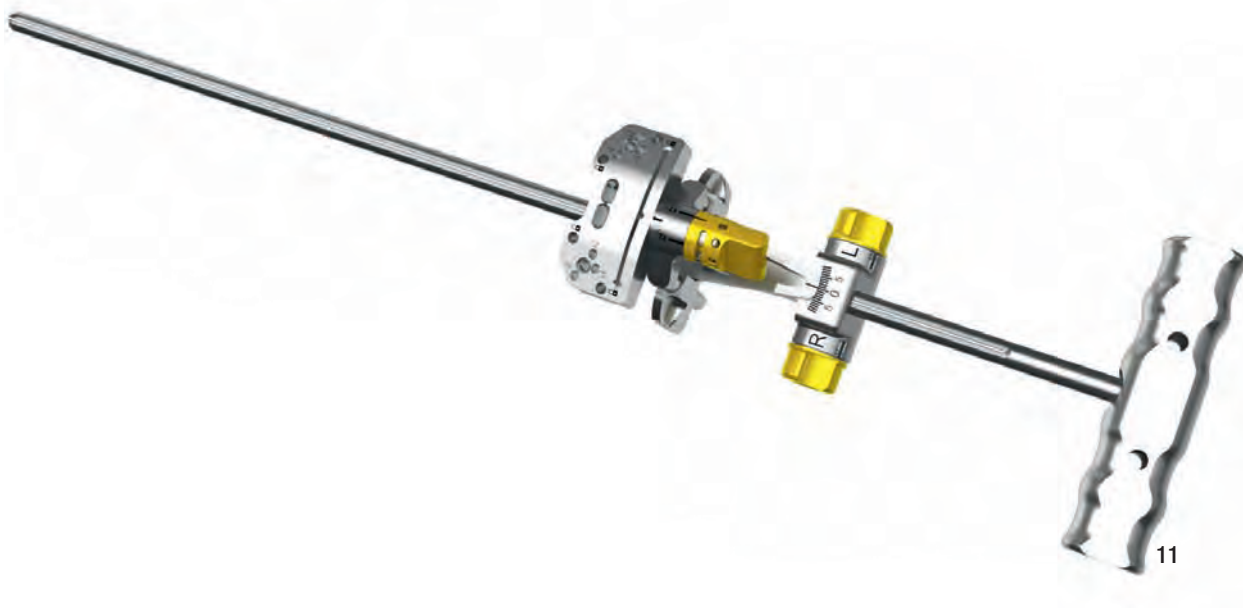
319-505/00B Step Drill

Femoral Alignment Guide Assembly

In order to lock the Femoral Cutting Block, distal cut, twist the knob of the Femoral Alignment Guide clockwise until it clicks in the “lock position” (10).



Slide the Femoral Alignment Guide onto the Intramedullary Rod (11).



Instruments



445-104/00 Femoral Cutting Block, distal cut



445-102/00 Femoral Alignment Guide, varus/valgus adjustment



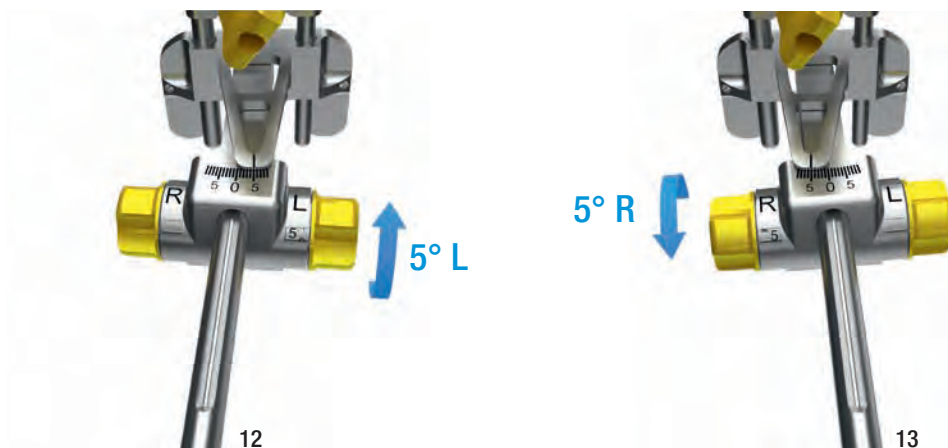
445-101/00 Intramedullary Rod

Femoral Intramedullary Alignment

Use preoperative X-rays to define the patient’s appropriate mechanical axis. Set the valgus angle (left or right – 0 degrees to 9 degrees) on the Femoral Alignment Guide, by rotating the appropriate knobs.

Rotate the knob marked with “L” for selecting the desired angle for a left knee (12).

Rotate the knob marked with “R” for selecting the desired angle for a right knee (13).

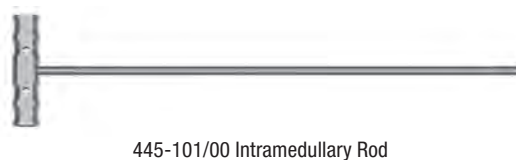


Slowly introduce the Intramedullary Rod with the Femoral Alignment Guide to prevent building up pressure in the canal. Insert it far enough to ensure the most accurate replication of the anatomical axis (14).



ATTENTION: Before fixing the Femoral Cutting Block with two pins, it must be ensured that at least one condyle is in contact with the alignment instrument, and that the valgus angle of the correct side has been set.

Instruments



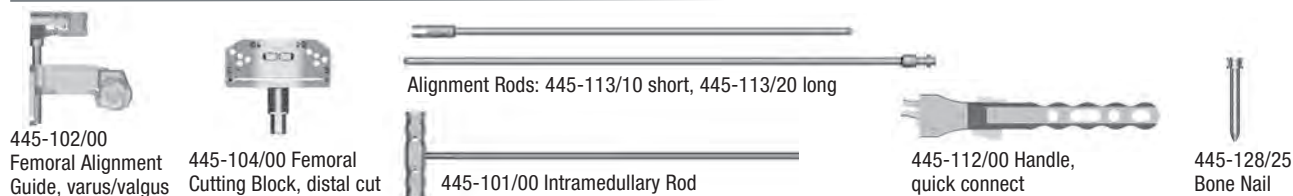
OPTIONAL: For additional fixation, impact a Bone Nail on the medial or lateral side of Femoral Alignment Guide until the head of the Bone Nail is flush with the plate (15).



OPTIONAL: To confirm the valgus angle, attach the Quick Connect Handle to the Femoral Cutting Block and then insert the Alignment Rod into the Quick Connect Handle. Extend the Alignment Rod assembly to the center of the femoral head (16).



Instruments



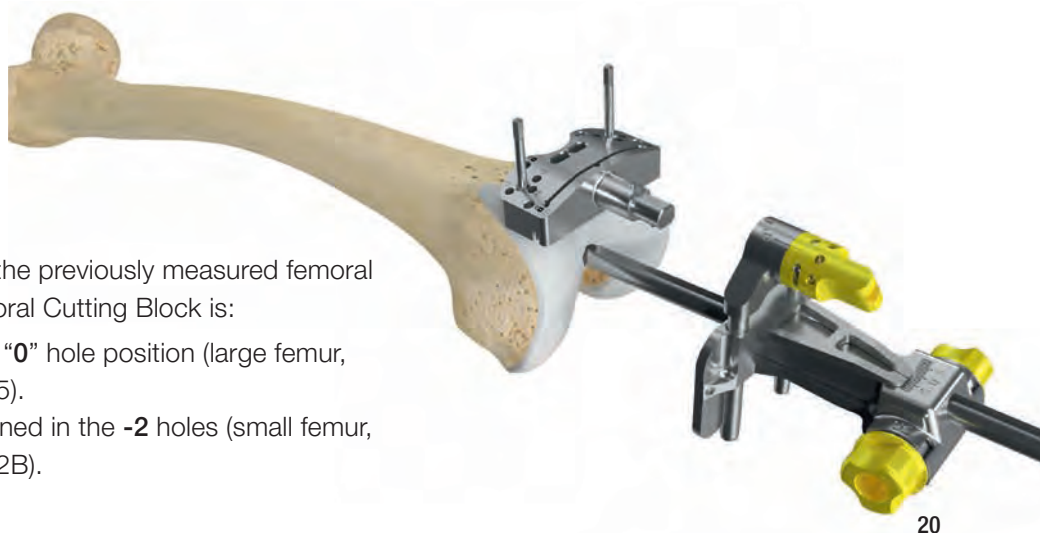
The Alignment Rods are connected together by inserting and twisting the pin of the long Alignment Rod into the slot of the short Alignment Rod (17+18).



Insert a Drill Pin through each of the 0 pin holes on the anterior surface of the Femoral Cutting Block (19).



Release the knob of the Femoral Alignment Guide rotating it counterclockwise. Remove the Femoral Alignment Guide together with the Intramedullary Rod and leave the Femoral Cutting Block in situ (20).



According to the previously measured femoral size, the Femoral Cutting Block is:

- left in the "0" hole position (large femur, size 3 to 5).
- re-positioned in the -2 holes (small femur, size 1 to 2B).

Instruments



445-104/00 Femoral Cutting Block, distal cut

445-102/00 Femoral Alignment Guide, varus/valgus adjustment

445-124/65 Drill Pin

445-101/00 Intramedullary Rod

Distal Femoral Resection

The Cutting Template can be used to check the alignment of the distal resection (21).



To fully secure the Femoral Cutting Block to the femur, two Headed Drill Pins are inserted into oblique holes (22).

Use an oscillating saw and a sawblade (max. 1.27 mm thick) through the cut slot to resect the distal femur (23).



Remove the Cutting Block.

Instruments



445-104/00 Femoral Cutting Block, distal cut



317-802/53 Cutting Template

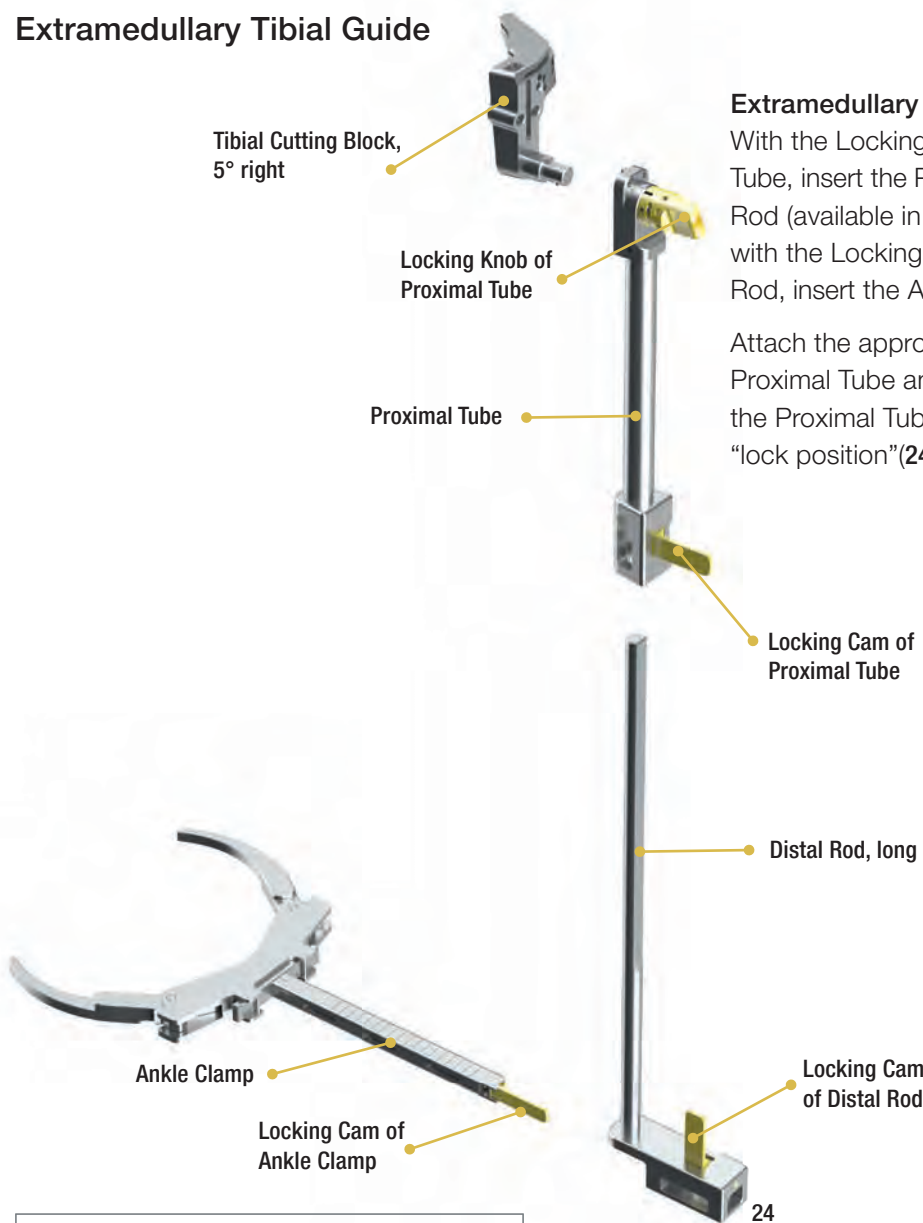


445-124/65 Drill Pin



445-125/35 Headed Drill Pin

Extramedullary Tibial Guide







Extramedullary Tibial Guide Assembly

With the Locking Cam fully open on the Proximal Tube, insert the Proximal Tube onto the Distal Rod (available in long and short version). Then, with the Locking Cam fully open on the Distal Rod, insert the Ankle Clamp into the Distal Rod.

Attach the appropriate Tibial Cutting Block to the Proximal Tube and lock it by twisting the Knob of the Proximal Tube clockwise until it clicks in the “lock position”(24).

GEMINI SPAR-K Instrument Set includes the following Tibial Cutting Blocks:

	5° left		0° left
	5° right		0° right



EM Tibial Guide final assembly (25).

Instruments



445-105/00 EM Tibial Guide, ankle clamp



445-106/20 EM Tibial Guide, distal rod, long



445-107/00 EM Tibial Guide, proximal tube



445-110/40 Tibial Cutting Block, 5° right

Extramedullary Tibial Guide Alignment

Position the knee at 90° of flexion with the tibia translated anteriorly and the whole leg held firmly in place on the surgical table. Place the Tibial Cutting Block against the proximal tibia. The Locking Cam on the Proximal Tube is used for macro-adjusting the height of the Tibial Cutting Block. Adjust the EM Tibial Guide to the approximate length of the tibia (26).



Align the Proximal Tube with the medial aspect of the tibial tubercle to set rotation.



OPTIONAL: In order to aid stability to the EM Tibial Guide, a Headed Drill Pin can be inserted through the center of the vertical slot on the Tibial Cutting Block. The central pin stabilizes the Tibial Cutting Block still allowing varus/valgus, posterior slope and resection level adjustments (27).



OPTIONAL: As an alternative to a Headed Drill Pin, the Spike Rod can be used to aid stability to the EM Tibial Guide (28a). Use the Slaphammer to remove or reposition the Spike Rod, if necessary (28b).

Instruments



445-105/00 EM Tibial Guide, ankle clamp

445-107/00 EM Tibial Guide, proximal tube
445-106/20 EM Tibial Guide, distal rod, long

445-108/00 EM Tibial Spike Rod

445-110/40 Tibial Cutting Block, 5° right

445-125/35 Headed Drill Pin

445-206/00 Slaphammer

Slope Adjustment

Adjust the slope of the EM Tibial Guide on the sagittal plane, releasing the Locking Cam on the Distal Rod. Insert the Cutting Template or a free blade into slot of the Tibial Cutting Block to help assess the expected slope of the tibial resection (29).

ATTENTION: All GEMINI SL metal Tibial Components feature a central stem tilted 5 degrees posteriorly.



29

Varus/Valgus Adjustment

Adjust the varus/valgus alignment of the EM Tibial Guide by releasing the Locking Cam at the distal end of Ankle Clamp (30). This adjustment allows the frontal alignment of the EM Tibial Guide, avoiding varus or valgus tibial resection.



30

Instruments



445-105/00 EM Tibial Guide, ankle clamp



445-106/20 EM Tibial Guide, distal rod, long



445-107/00 EM Tibial Guide, proximal tube



445-110/40 Tibial Cutting Block, 5° right

Setting the Tibial Resection Level

Insert the foot of the Adjustable Stylus into the slot of the Tibial Cutting Block and adjust it to the appropriate level. Release the Locking Cam on the Proximal Tube allowing for micro-adjusting the height of the Tibial Cutting Block (31).



The scale on the body of the Adjustable Stylus indicates the amount of bone and residual cartilage to be resected (32).



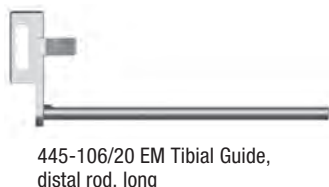
ATTENTION:

- **GEMINI SL Fixed Bearing CR** (Cruciate Retaining) and **Fixed Bearing PS** (Posterior Stabilized) configurations have a minimum tibial component thickness of 10 mm (tibial baseplate + PE articulating surface).

Set the Adjustable Stylus according to the patient's anatomy, to avoid excessive tibial resection.

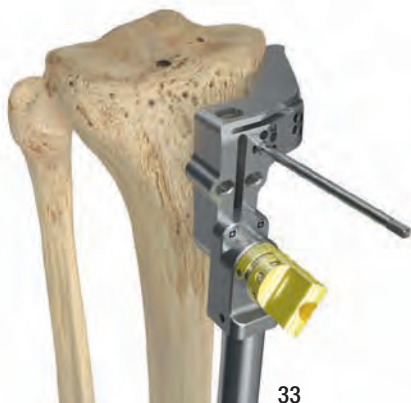
Optional: Confirm tibial resection level using Cutting Template passed as a free blade into the Cutting Block.

Instruments



Tibial Resection

After the tibial resection level has been set, close the Locking Cam on EM Tibial Proximal Tube and pin the Tibial Cutting Block through the anterior parallel „0“ holes, using two Drill Pins (33).



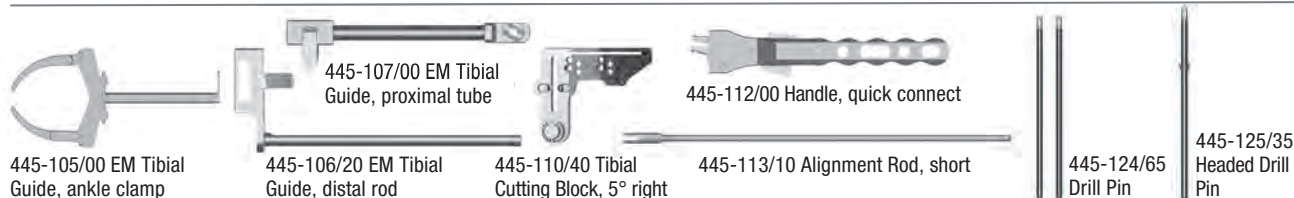
The resection level can be adjusted by repositioning the Tibial Cutting Block (proximal 2 mm, distal 2 mm or 4 mm). If desired, the cutting block can be more securely fixed with an additional Headed Drill Pin placed through the distal angled hole.

OPTIONAL: To assess tibial alignment, attach the Quick Connect Handle to the Tibial Cutting Block, and insert the Alignment Rod. The alignment can be checked by ensuring that the Alignment Rod remains parallel with the tibial axis (34).



Resect the tibia (35).

Instruments

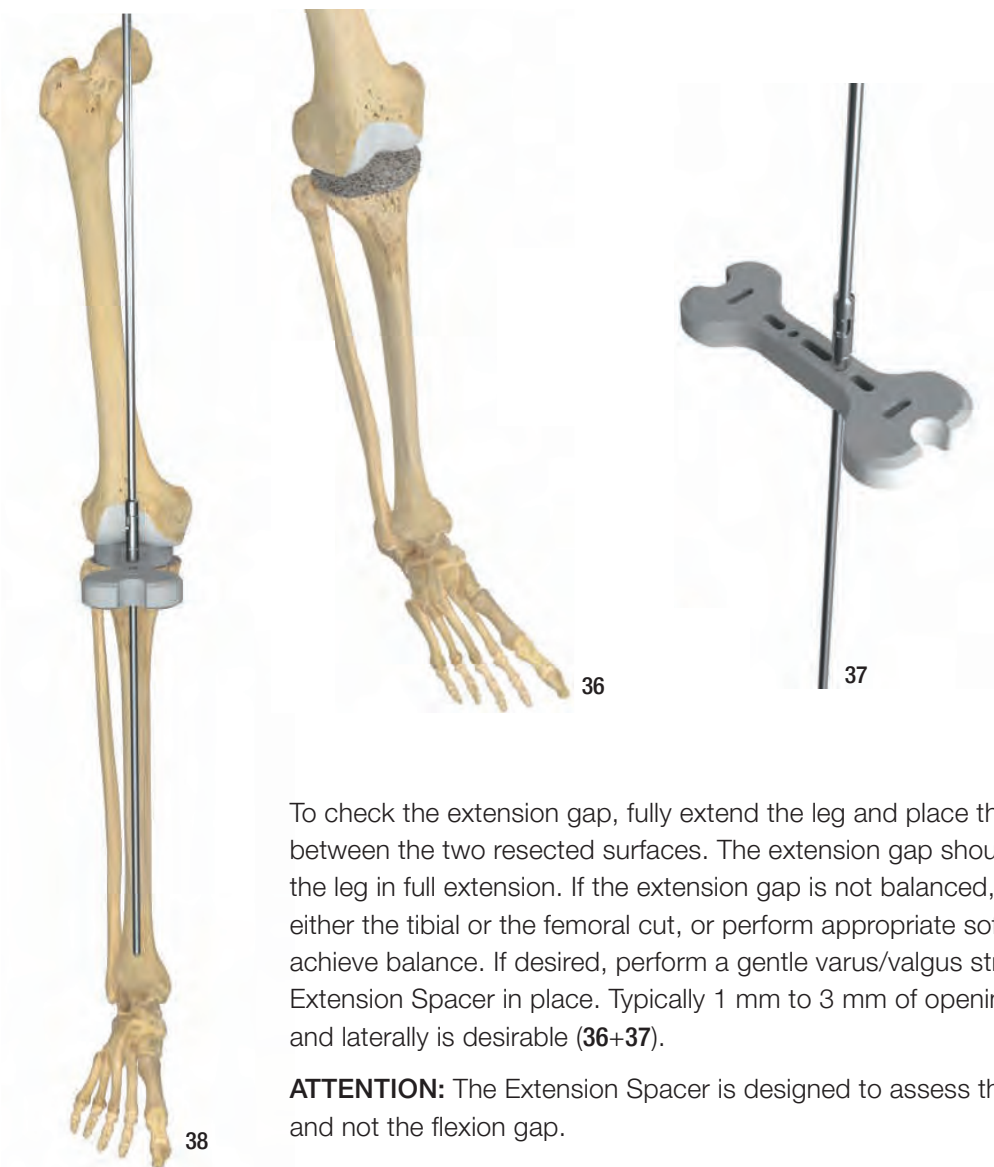


Checking Extension Gap and Axes

According to the previously measured femoral size, select the appropriate end of the Extension Spacer:

- Extension Spacer 3-5 end (Large femur, size 3 to 5).
- Extension Spacer 1-2B end (Small femur, size 1 to 2B).

The Extension Spacer can be connected to different Shims to allow evaluation of multiple thicknesses (12 mm, 14 mm, 16 mm and 18 mm). The markings on the Shims indicate the thickness of the insert they represent when assembled to the Extension Spacer, and can be read off the top of the Shim when it is attached to the Extension Spacer.



To check the extension gap, fully extend the leg and place the Extension Spacer between the two resected surfaces. The extension gap should be rectangular with the leg in full extension. If the extension gap is not balanced, adjust the angle of either the tibial or the femoral cut, or perform appropriate soft-tissue releases to achieve balance. If desired, perform a gentle varus/valgus stress test with the Extension Spacer in place. Typically 1 mm to 3 mm of opening both medially and laterally is desirable (36+37).

ATTENTION: The Extension Spacer is designed to assess the extension gap only and not the flexion gap.

If desired, the two-piece Alignment Rod can be inserted into the Extension Spacer to assess alignment (38).

Instruments



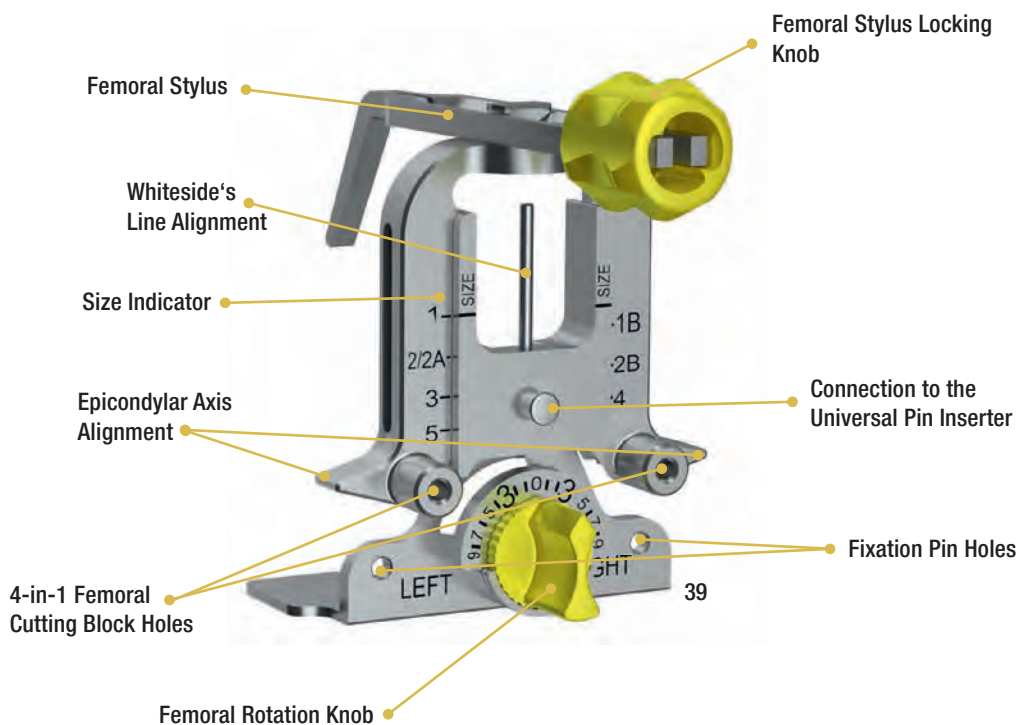
Alignment Rods: 445-113/10 short, 445-113/20 long



445-114/08
Extension Spacer

Femoral Sizing and Rotation

Femoral Sizer



ATTENTION: The GEMINI SPAR-K Femoral Sizer is anterior referencing only.

The femoral rotation can be set from 0 to 9 degrees by rotating the Femoral Rotation Knob towards the “LEFT” half circle or the “RIGHT” half circle, for a left knee or a right knee respectively (39).

ATTENTION: The GEMINI SL Total Knee System features 8 femoral sizes: 1, 1B, 2, 2A, 2B, 3, 4 and 5.

The GEMINI SPAR-K Femoral Sizer allows the surgeon to assess the final femoral A/P size and it features 7 femoral size markings: 1, 1B, 2/2A, 2B, 3, 4 and 5.

The sizes 2 and 2A have the same size in A/P but different sizes in M/L (2<2A). The final femoral M/L size is not assessed during this step, and will be addressed later in the technique, using the 4-in-1 Femoral Cutting Block.

ATTENTION: The GEMINI SPAR-K Femoral Sizer is used for a Measured Resection surgical philosophy and is not a measurement device.

Instruments



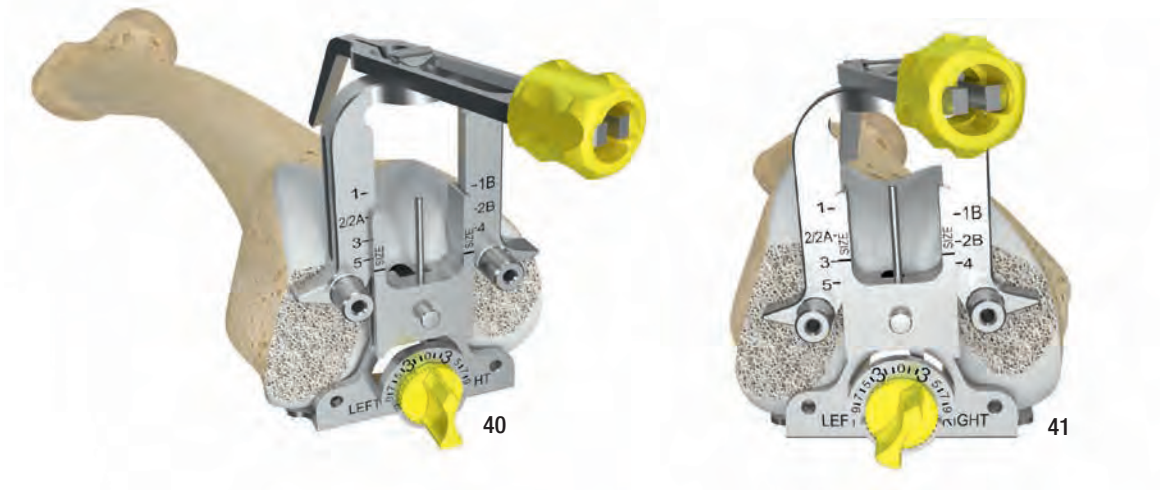
445-201/00 Femoral Sizer

Position the Femoral Sizer so that the flat surface of the instrument is flush against the resected distal femur and the posterior paddles are flush against the posterior condyles (40).

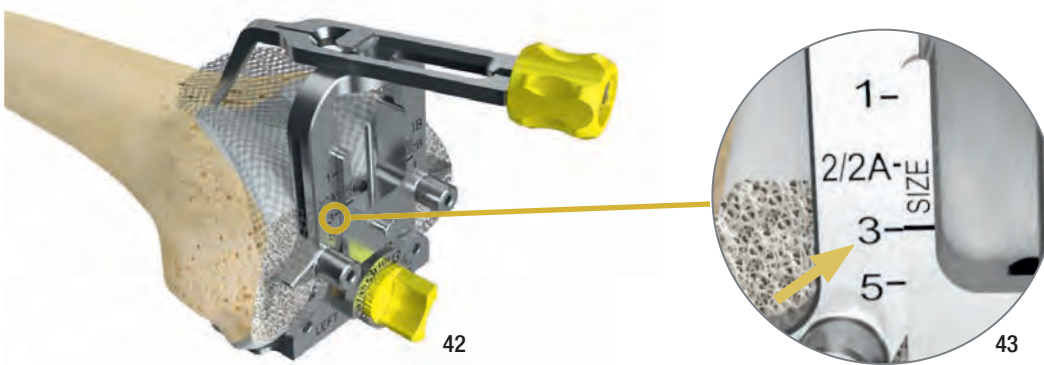
OPTIONAL: Use the Universal Pin Inserter to push the Femoral Sizer against the resected distal femur.

OPTIONAL: Secure the Femoral Sizer against the distal femur using two short Headed Pins through the fixation holes.

Adjust the degree of external rotation to be parallel to the Epicondylar Axis and perpendicular to Whiteside's line by rotating the Femoral Rotation Knob, while holding the feet of the device against the posterior condyles (41).



Place the Femoral Stylus on the anterior femur with the tip referencing the desired exit point of the sawblade for the anterior cut. This is usually halfway up the lateral, anterior prominence of the femoral trochlea (42).



Read the A/P femoral size shown by the size indicator directly on the scale marked on the body of the Femoral Sizer (43).

Instruments



445-201/00 Femoral Sizer

Once femoral rotation is set and size confirmation is complete, drill the holes for the 4-in-1 Femoral Cutting Block using the 3-mm Twist Drill through the 4-in-1 Femoral Cutting Block holes on the body of the Femoral Sizer (44+45).



ATTENTION: The final M/L position of the Femoral Component is not determined during this step, but is addressed later in the surgical technique. This step just sets the M/L position of the 4-in-1 Cutting Block.

Remove the Femoral Sizer.

Instruments



445-201/00 Femoral Sizer



15-2040/02B Twist Drill, Ø 3 mm

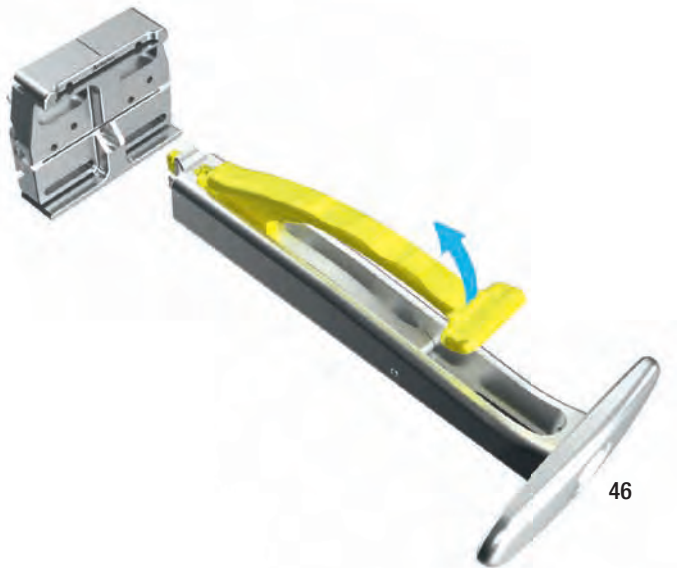
Femoral 4-in-1 Resection

Attach the Impactor/Extractor Handle to the 4-in-1 Femoral Cutting Block that matches the femur A/P size previously determined.

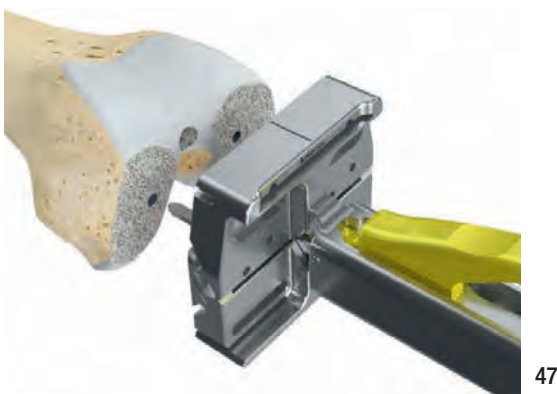
ATTENTION: The GEMINI SPAR-K Instrumentation features eight 4-in-1 Femoral Cutting Blocks, one for each femoral size: 1, 1B, 2, 2A, 2B, 3, 4 and 5.

The GEMINI SPAR-K 4-in-1 Femoral Cutting Block mimics precisely the M/L size of the final femoral component.

Open the Impactor/Extractor Handle lever and insert it into the 4-in-1 Femoral Cutting Block (46). Secure the Impactor/Extractor Handle to the 4-in-1 Femoral Cutting Block by closing the lever.



Place the 4-in-1 Femoral Cutting Block on the femur by aligning the 2 pegs on the back of the block with the previously drilled positioning holes (47).



Impact the 4-in-1 Femoral Cutting Block until it is flush with the femur (48).

Detach the Impactor/Extractor Handle, leaving the 4-in-1 Femoral Cutting Block flush on the distal femur.

Instruments

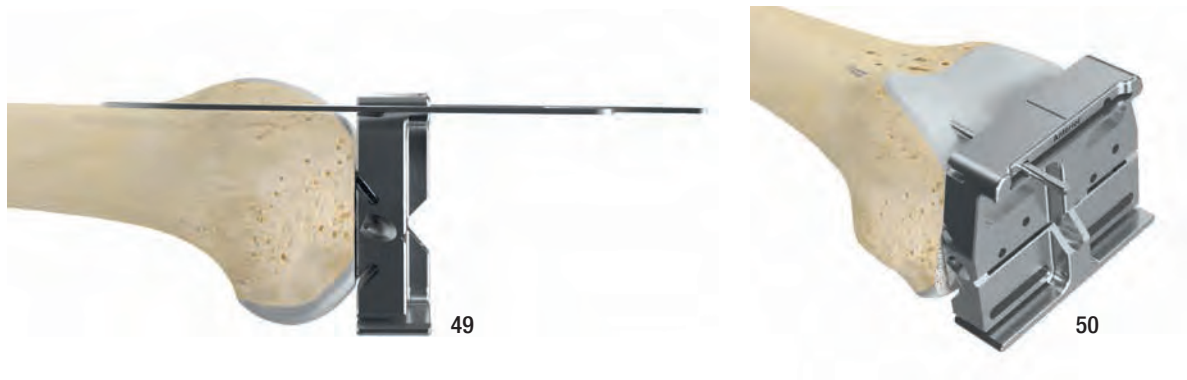


445-202/03 4-in-1 Femoral Cutting Block, size 3



445-207/00 Impactor/Extractor Handle

OPTIONAL: Insert the Cutting Template (49) or a pin (50) through the lateral side of the anterior slot of the 4-in-1 Femoral Cutting Block to verify the correct anterior resection before cutting the femur and to ensure that notching is unlikely to occur.



OPTIONAL (only for Distal Cut First and Tibia First techniques): The flexion gap can be checked by using the Flexion Spacer in combination with the 4-in-1 Femoral Cutting Block. The Flexion Spacer is placed between the 4-in-1 Femoral Cutting Block (with its stepped side pushed as far as possible under the unresected femoral condyles) and the resected tibia (51).

ATTENTION: The Flexion Spacers are designed to assess the flexion gap in combination with the 4-in-1 Femoral Cutting Block only.



The Flexion Spacer can be connected to different Shims to allow evaluation of multiple thicknesses (12 mm, 14 mm, 16 mm and 18 mm). The markings on the Shims indicate the thickness of the insert they represent when attached to the Flexion Spacer, and can be read off the top of the Shim when it is attached to the Flexion Spacer.

Instruments



445-202/03 4-in-1 Femoral Cutting Block, size 3



317-802/53 Cutting Template



445-124/65 Drill Pin



445-112/00 Handle, quick connect

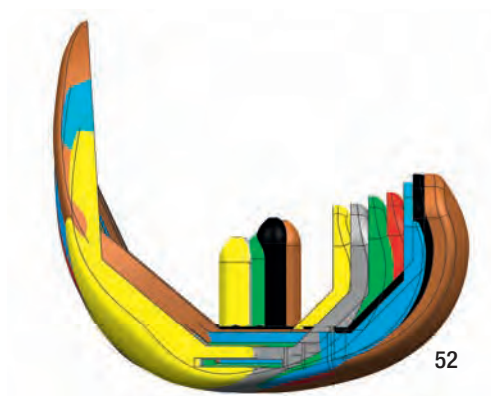


445-203/10 Flexion Spacer

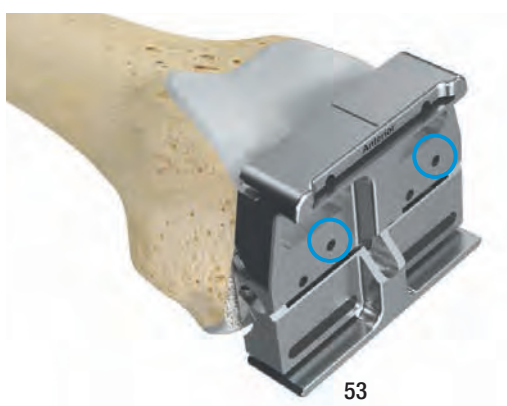
Repositioning of the 4-in-1 Femoral Cutting Block

If the flexion gap is not equivalent to the extension gap or if there is a risk of unacceptable notching, it is possible to change the size of the 4-in-1 Femoral Cutting Block. This will alter the posterior femoral condyle resection keeping the same positioning holes (52).

ATTENTION: At this stage changing the size of the 4-in-1 Femoral Cutting Block will only affect the flexion gap (Anterior Referencing) and avoid M/L overhang of the femoral component.



Alternate holes can then be drilled through the \uparrow 2 mm or \downarrow 2 mm shift holes on the face of the 4-in-1 Femoral Cutting Block (53). The 4-in-1 Femoral Cutting Block then needs to be removed and be placed on the distal femur in the anteriorized or posteriorized holes. This will result in a 2 mm anterior or posterior shift of the 4-in-1 femoral resections. Use the Cutting Template to verify that the desired anterior and posterior resections will be attained.



Instruments



445-202/03 4-in-1 Femoral Cutting Block, size 3



445-207/00 Impactor/Extractor Handle

Femoral 4-in-1 Resection

After final placement of the 4-in-1 Femoral Cutting Block, insert two Headed Drill Pins into the oblique pin holes on the medial and lateral aspects of the Cutting Block.

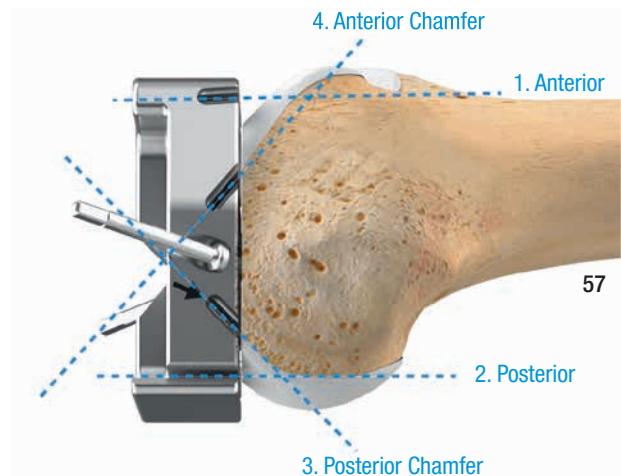
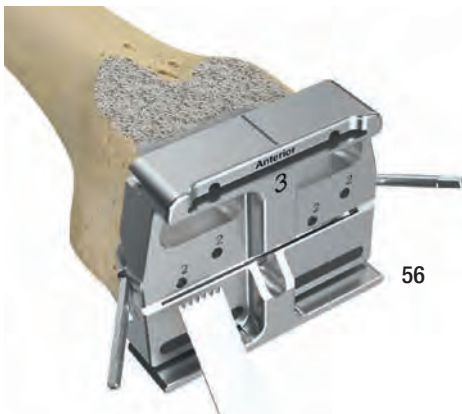
ATTENTION: The left oblique pin points upwards whereas the right oblique pin points downwards in all 4-in-1 Femoral Cutting Blocks (54) except for size 1 where both point upwards.



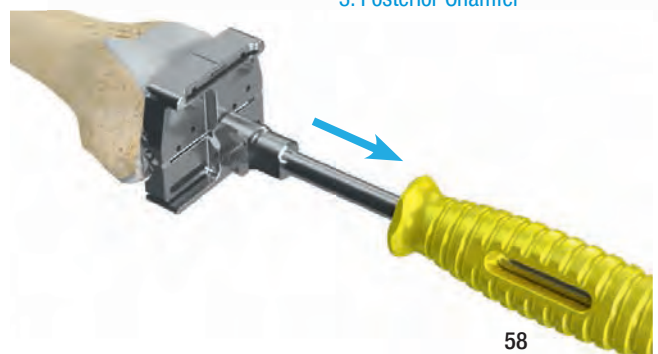
This pattern of fixation coupled with the pegs on 4-in-1 Femoral Cutting Block should provide ample stability of the block (55).

ATTENTION: Use only 35 mm long Headed Drill Pins with 4-in-1 Femoral Cutting Block size 1.

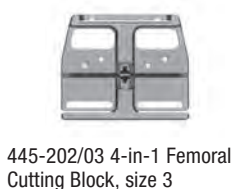
Protecting the collateral ligaments, use an oscillating Sawblade to complete anterior, posterior, posterior chamfer and anterior chamfer resections (56+57).



Upon completion of the cuts, remove all Pins and use the Impactor/Extractor Handle or the Slaphammer to axially remove the 4-in-1 Femoral Cutting Block (58).



Instruments

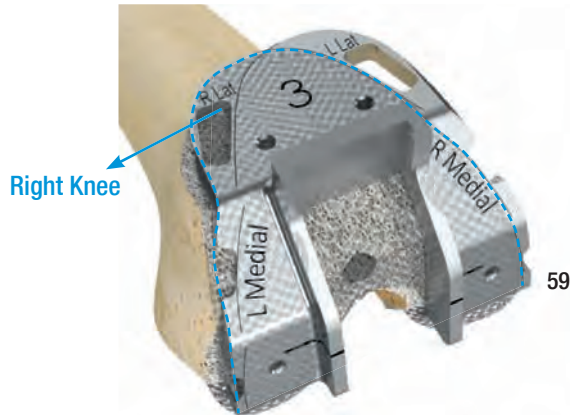


Femoral Preparation

Fixed Bearing PS (Posterior Stabilized)

The Femoral PS Box Guide is selected based to the size of the femur and is positioned on the resected end of the femur. Alignment is performed on the notch and the M/L dimension (59).

ATTENTION: The Femoral PS Box Guide is symmetrically designed to permit universal use. The M/L width of the Femoral PS Box Guide mimics the outer edges ("R Lat" Right Lateral and "L Lat" Left Lateral) of the final implant. Take care to position the guide to avoid overhang.



The Femoral PS Box Guide is fixed with at least two Headed Drill Pins (60).



Attach the Impactor/Extractor Handle to the PS Box Femoral Chisel that matches the selected Femoral PS Box Guide. Open the Impactor/Extractor Handle lever and insert it on the PS Box Femoral Chisel. Secure the Impactor to the PS Box Femoral Chisel closing the lever.

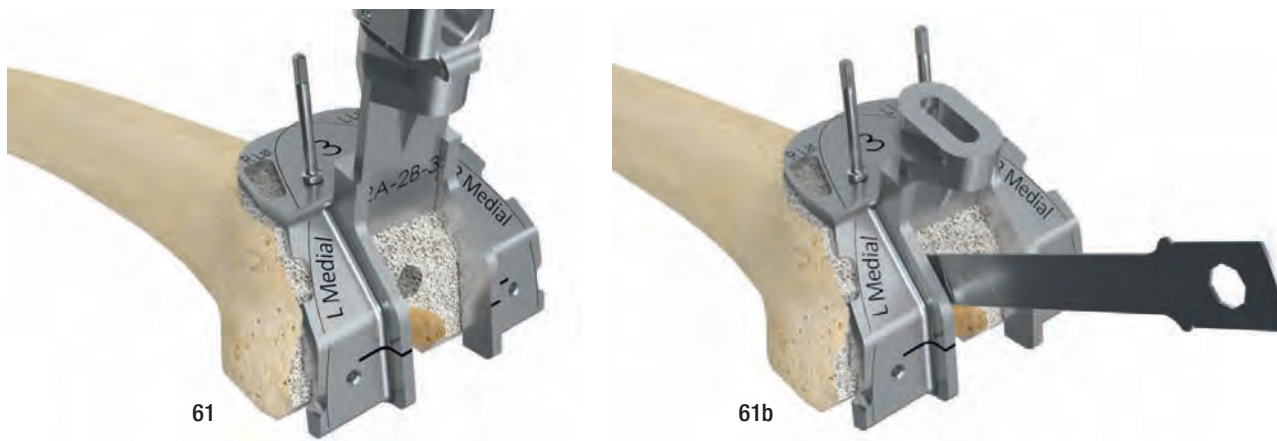
ATTENTION: The GEMINI SPAR-K Instrumentation features three Femoral Chisels:

- PS Box Femoral Chisel Small for Femoral PS Box Guide sizes 1, 1B and 2
- PS Box Femoral Chisel Medium for Femoral PS Box Guide sizes 2A, 2B and 3
- PS Box Femoral Chisel Large for Femoral PS Box Guide sizes 4 and 5

Instruments

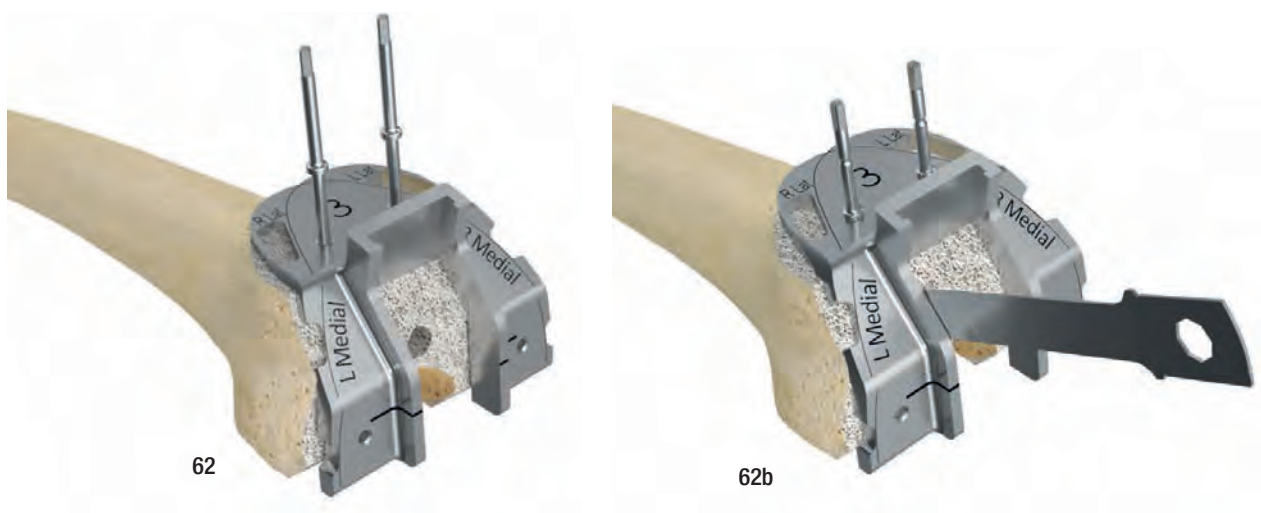


Gently impact the PS Box Femoral Chisel to a depth approximately one half the thickness of the femur (61). Resect along the interior of the Box Guide with an oscillating Sawblade to the depth of the Chisel. Continue both cuts from the anterior portion through to the posterior (61b). Take care to protect the tibial bone below. Finish impacting the Chisel gently, until the intercondylar bone is removed.



OPTIONAL: The PS Box can be prepared using the Sawblade only (62, 62b).

ATTENTION: When completing the notch cut, be careful to avoid excessive angulation of the Sawblade or penetration past the posterior femoral cortex to avoid injury to the neurovascular structures. Avoid undercutting the condyles.



Instruments



445-650/03 Femoral PS Box Guide, size 3



445-125/35 Headed Drill Pin



445-207/00 Impactor/Extractor Handle



445-651/20 PS Box Femoral Chisel, medium



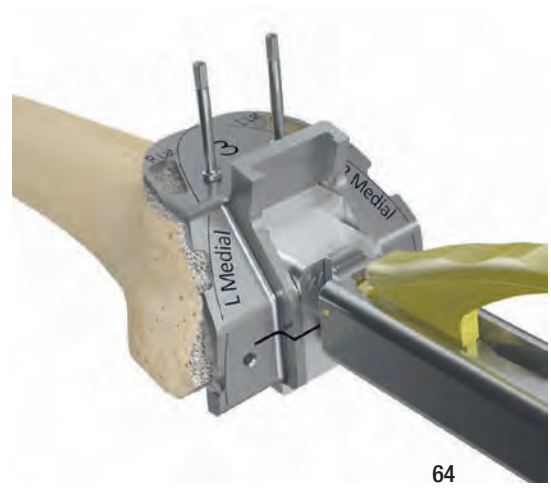
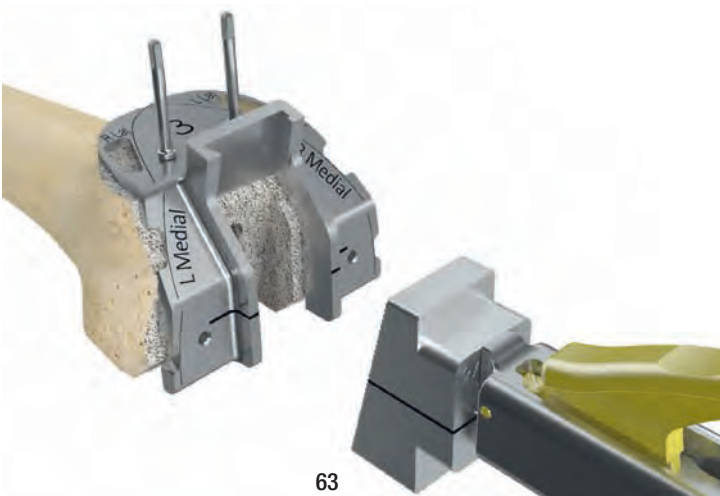
445-652/20 Femoral PS Box Gauge, medium

OPTIONAL: Attach the Impactor/Extractor Handle to Femoral PS Box Gauge that matches the selected Femoral PS Box Guide.

ATTENTION: The GEMINI SPAR-K Instrumentation features three Femoral PS Box Gauges:

- Femoral PS Box Gauge Small for Femoral PS Box Guide sizes 1, 1B and 2
- Femoral PS Box Gauge Medium for Femoral PS Box Guide sizes 2A, 2B and 3
- Femoral PS Box Gauge Large for Femoral PS Box Guide sizes 4 and 5

Open the Impactor/Extractor Handle lever and insert it into the Femoral PS Box Gauge. Secure the Impactor to the Femoral PS Box Gauge by closing the lever (63).



Gently insert the PS Box Gauge to check that adequate bone has been removed. The Femoral PS Box Gauge distal surfaces should be flush to the Femoral PS Box Guide if enough bone has been removed. Corresponding horizontal laser marks on the PS Box Guide and the PS Box Gauge indicate proper alignment of the instruments (64).

Instruments



445-650/03 Femoral PS Box Guide, size 3



445-125/35 Headed Drill Pin



445-207/00 Impactor/Extractor Handle



445-651/20 PS Box Femoral Chisel, medium



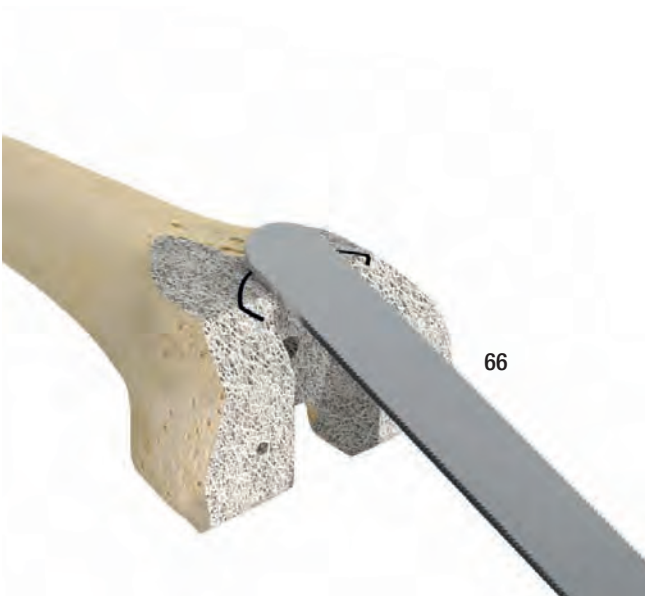
445-652/20 Femoral PS Box Gauge, medium

Sulcus Preparation

Use the Femoral Sulcus Template to identify the position of the trochlear recess of the final femoral component (65).



After that, the trochlea is prepared with the rasp (66+67).



Instruments



445-204/00 Femoral Sulcus Template



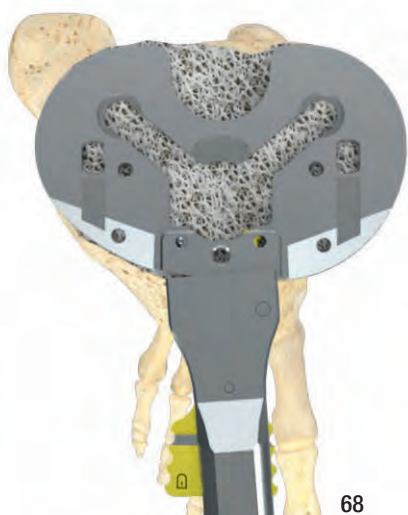
317-643 Rasp

Tibial Sizing

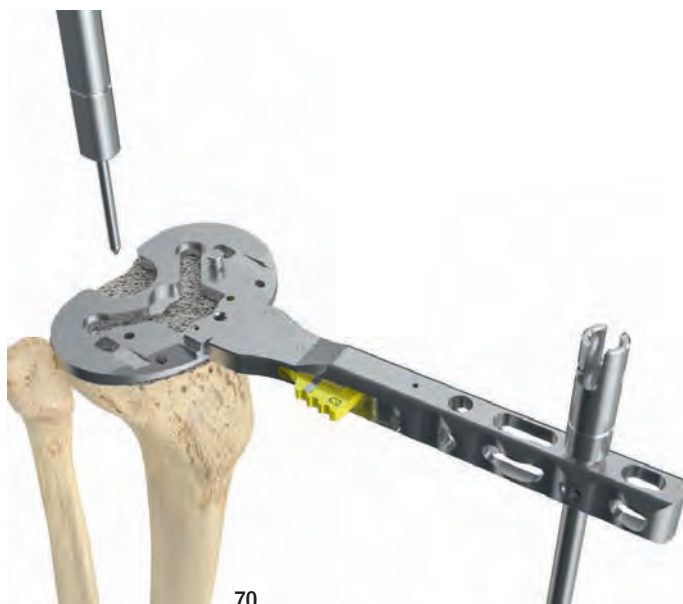
Attach the Quick Connect Handle to the appropriate Tibial Preparation Plate.

ATTENTION: The GEMINI SL SPAR-K Instrumentation features left and right Tibial Preparation Plates.

Place the Tibial Preparation Plate onto the resected tibial surface. Assess the tibial size to achieve maximal tibial coverage (68). Take care to put the Tibial Preparation Plate in the correct rotational alignment. To help alignment, insert the Alignment Rod into the Quick Connect Handle (69).

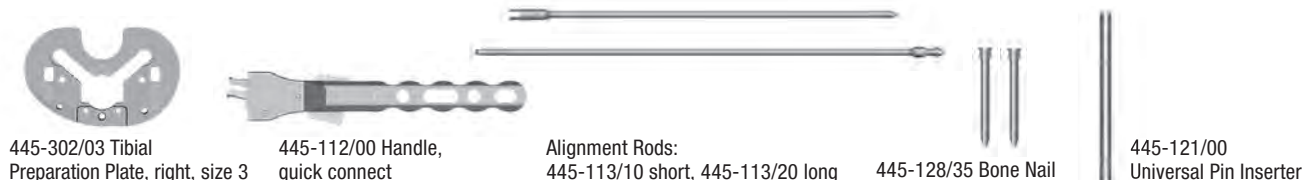


Secure the Tibial Preparation Plate by placing 2 or more Bone Nails in the dedicated holes of the Tibial Preparation Plate. Use the Universal Pin Inserter for driving and impacting the Bone Nails (70).



ATTENTION: Use only 25 mm long Bone Nail with Tibial Preparation Plate size 1.

Instruments



445-302/03 Tibial Preparation Plate, right, size 3

445-112/00 Handle, quick connect

Alignment Rods:
445-113/10 short, 445-113/20 long

445-128/35 Bone Nail

445-121/00 Universal Pin Inserter

OPTIONAL - Intermediate Trial Reduction

If desired, it is possible to perform an intermediate trial reduction. The Femoral Trial is selected according to the resected femoral size. The Trial Plateau is selected and used according to which type of prosthesis is chosen – Fixed Bearing CR or Fixed Bearing PS (70).



70

Select the appropriate size of the Trial Plateau.

The following table shows the possible size combinations of the GEMINI SL:

Compatibility: Femoral/Tibial Components

		Femoral Components							
		1	1B	2	2A	2B	3	4	5
PE Articulating Surfaces		1	1B	2	2A/B	3	4	5	
Tibial Components	1	XX	X	X	-	-	-	-	-
	2	XX	XX	XX	X	X	X	-	-
	3	XX	XX	XX	XX	XX	XX	X	-
	4	XX	XX	XX	XX	XX	XX	XX	X
	5	XX	XX	XX	XX	XX	XX	XX	XX

XX = unrestricted compatibility
 XX = recommended combination
 X = restricted compatibility, depending on the patient's soft tissue situation in relation to the articulating surface
 - = prohibited combination

Select the appropriate thickness of the Trial Plateau:

- Fixed Bearing CR: 10 mm, 12 mm or 14 mm
- Fixed Bearing PS: 10 mm, 12 mm or 14 mm

ATTENTION: For adjusting the height of the Trial Plateau beyond 14 mm, use the +4 mm Shim in combination with the 12 mm Trial Plateau to reach 16 mm total thickness, or in combination with the 14 mm Trial Plateau to reach 18 mm total thickness.

Trial reduction is performed with the knee joint in extension and flexion, and the ligament tension is checked. Make sure that no bony structures (e.g. osteophytes) or local soft tissue interfere with the range of motion. The Trial Plateau assembly is then removed.

Instruments



317-667/03 Femoral Trial, right, size 3

445-302/03 Tibial Preparation Plate, right, size 3

445-128/35 Bone Nail

445-400/00 Shim Trial Plateau, +4 mm, Fixed Bearing

445-403/10 Trial Plateau, Fixed Bearing CR

445-603/10 Trial Plateau, Fixed Bearing PS

Tibial Preparation

Attach the Tibial Reamer Guide to the Tibial Preparation Plate (71). Drill the central tibial stem using the appropriate Tapered Reamer, until it stops onto the Tibial Reamer Guide (72+73).

ATTENTION: The GEMINI SL SPAR-K Instrumentation features five Tapered Reamers:

- SpheroGrip Tapered Reamer for the SpheroGrip Tibial Component
 - Taper Cap 28L Reamer for the Tibial Component with Taper Cap
 - Stem Extension 50L Reamer for the Tibial Component with Stem Extension 50L
 - Stem Extension 80L Reamer for the Tibial Component with Stem Extension 80L
 - Stem Extension 120L Reamer for the Tibial Component with Stem Extension 120L
- Always use the shorter reamer first.



Attach the size-specific Tibial Keel Punch to the Impactor/Extractor Handle. Choose the appropriate Tibial Keel Punch according to the size of the Tibial Preparation Plate.

ATTENTION: the GEMINI SL SPAR-K Instrumentation features five Tibial Keel Punches, one for each tibial size: 1, 2, 3, 4 and 5.

Open the Impactor/Extractor Handle lever and insert it in the Tibial Keel Punch (74). Secure the Impactor/Extractor Handle to the Tibial Keel Punch by closing the lever.



Instruments



ATTENTION: Insert the Tibial Keel Punch into the Tibial Preparation Plate by hand until it reaches the level indicated by the frontal marking (75).

Carefully Impact the Tibial Keel Punch into the Tibial Preparation Plate until it is fully seated onto the Tibial Preparation Plate.



After the Tibial Keel Punch is fully seated, remove the Impactor/Extractor Handle. The Tibial Keel Punch sits in the Tibial Preparation Plate and acts as the trial stem (76).



ATTENTION: Pre-drill the tibial peg holes in case of sclerotic bone (76a).

Instruments

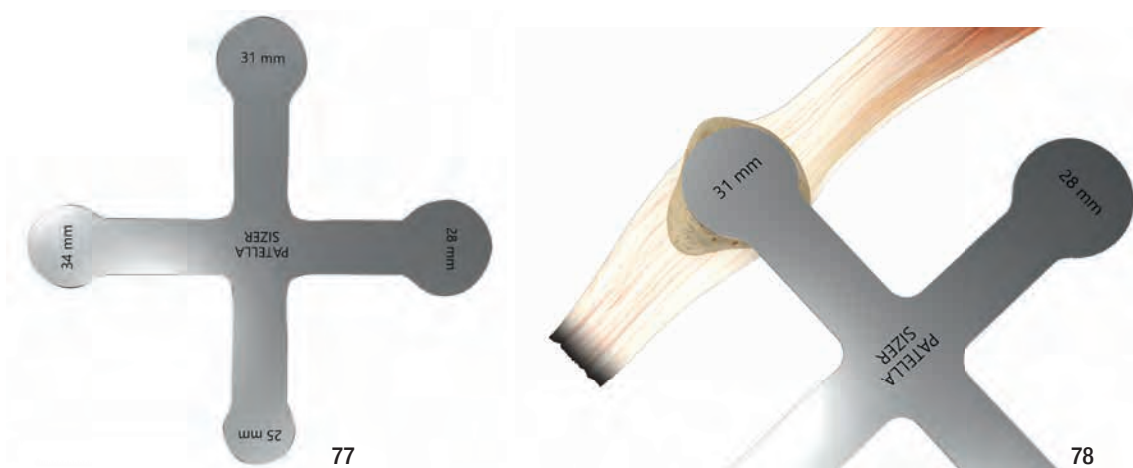
- | | | | | | | |
|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| 445-305/03 Tibial Keel Punch, size 3 | 445-302/03 Tibial Preparation Plate, right, size 3 | 445-303/00 Tibial Reamer Guide | 445-304/10 Tapered Reamer SpheroGrip | 445-207/00 Impactor/Extractor Handle | 445-128/35 Bone Nail | 445-905/00 Patella Drill |

Patella Preparation (Patella Resurfacing)

The following operating instructions describe how to use the LINK Patella Component and assume the use of the instrument set available for this procedure.

Sizing

A Patella Sizing Template corresponding to the implants is available (77). The size of implant is determined by placing the size template slightly medial and superior on the patella surface (78).



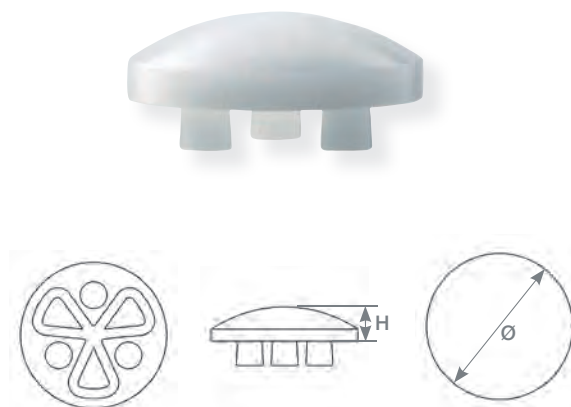
ATTENTION: The GEMINI SL Total Knee System includes 4 Patella Components.

Each size features a different implant thickness and diameter. In the table below, all Patella Component dimensions are shown.

Patella Resurfacing Components, 3-peg,

MAT UHMWPE

REF	Size	Outer Ø mm	Height mm
318-401/25	1	25	7
318-401/28	2	28	8
318-401/31	3	31	9
318-401/34	4	34	10



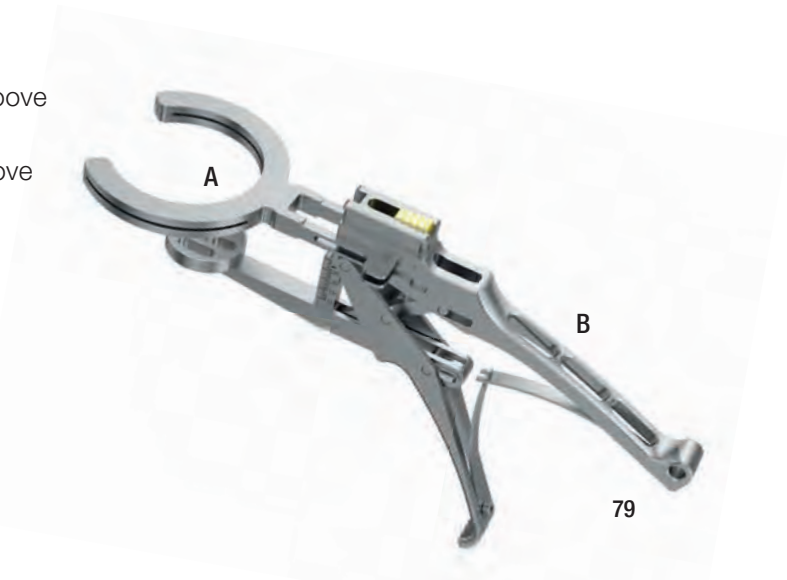
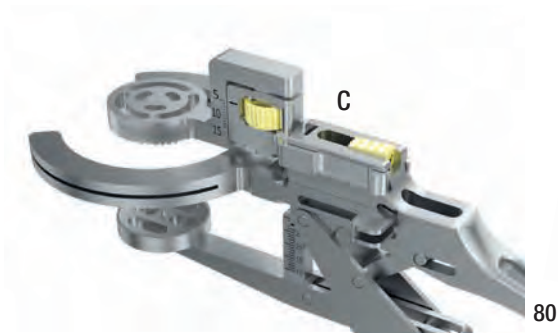
Instruments



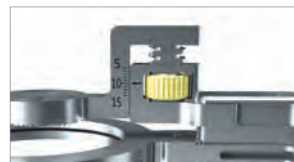
340-010 Patella Sizing Template

Patella Resection

Insert the Resection Guide (A) into the second groove from the top of the Patella Clamp Handle (B) (79). Now, insert the Depth Gauge (C) into the first groove from the top of the Patella Clamp Handle (B) (80).

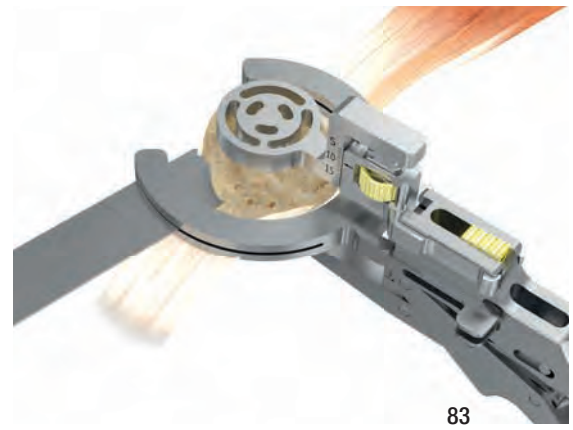
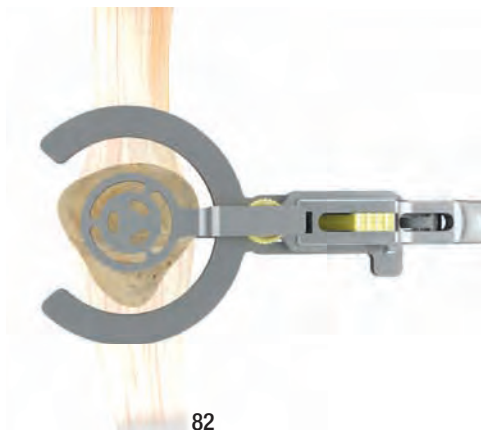


Set the appropriate resection level corresponding to the size of the patella component previously determined (81).



81

Position the Patella Clamp so that the sectional plane lies parallel to the extended patellar tendon. The Depth Gauge must lie on the bone. While pressing the hand grips, the Patella Clamp firmly fixes the patella by means of the integrated ratchet (82). If necessary, release the ratchet by pressing the trigger on the Patella Guide Handle.



ATTENTION: It is important to ensure that the remaining patella is sufficiently thick (min. 12mm).

The resection is carried out using an oscillating saw with a max. 1.27 mm thick sawblade. The saw is guided using the saw slots of the Resection Guide (83).

Instruments



445-902/00 Patella Clamp, Handle



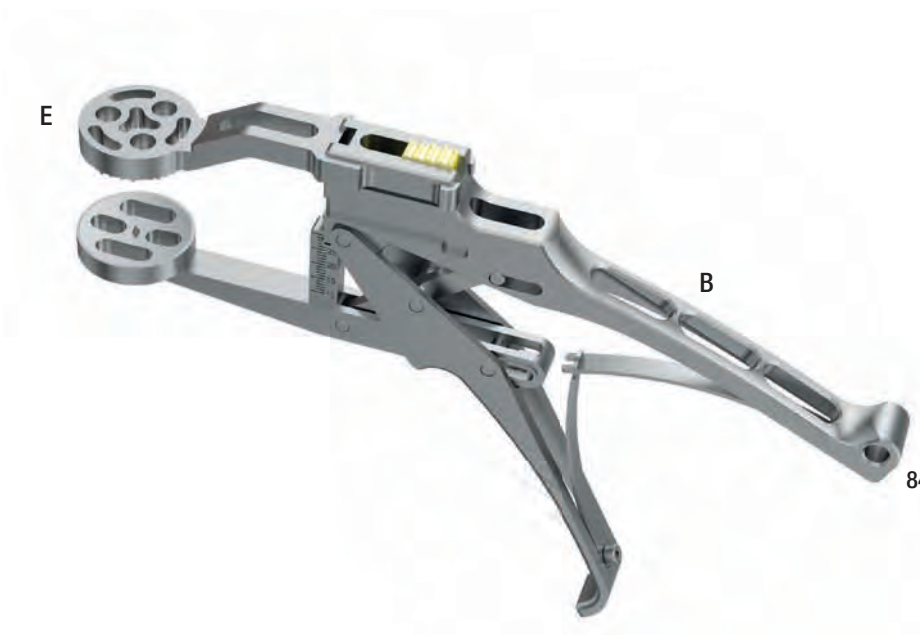
445-903/00 Patella Clamp, Resection Guide



445-907/00 Patella Clamp, Depth Gauge

Drilling the Anchoring Holes

Insert the Drill Guide (E) for the anchoring holes into the first slot from the top of the Patella Clamp Handle (B) (84).



Position the Patella Clamp onto the previously resected patella surface and use the Patella Drill (H) for the anchoring holes. To prepare the seat for the anchoring holes, push the Patella Drill until stop (85). A trial patella can now be used.



Instruments



Trial Reduction and Functional Test

The Femoral Trial is selected according to the resected femoral size and is positioned using the Femoral Inserter/Extractor (89).



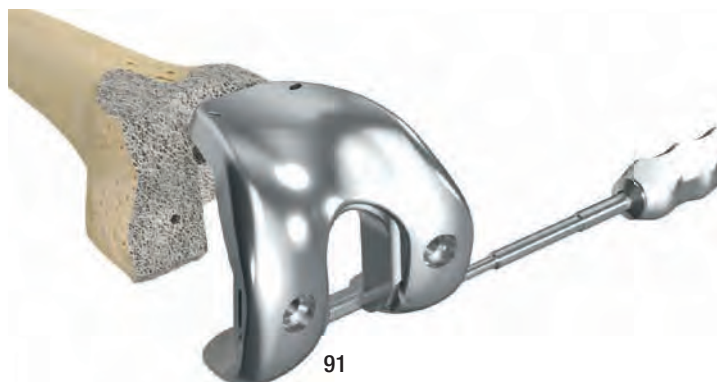
89

Fixed Bearing PS (Posterior Stabilized)

The Femur Trial Box PS is inserted into the Femoral Trial Component (90) and fixed with a Fixation Screw (91).



90



91

Instruments



445-210/00 Femoral Inserter/Extractor



317-667/03 Femoral Trial, right, size 3



317-669/03 Femoral Trial Box, size 3



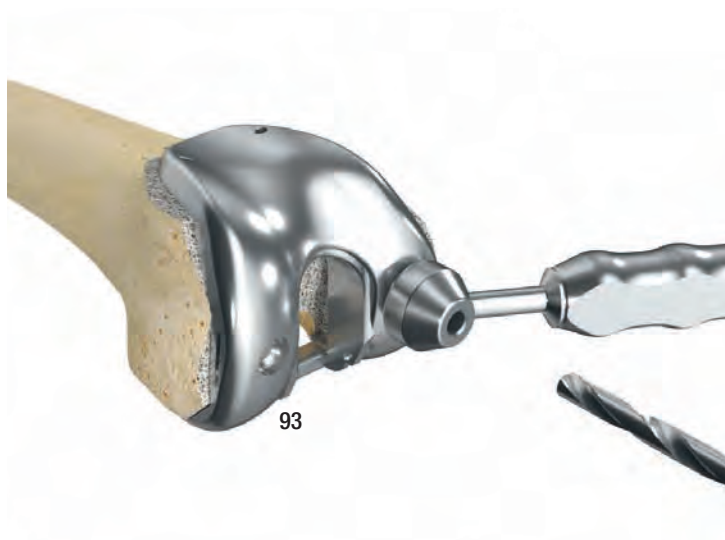
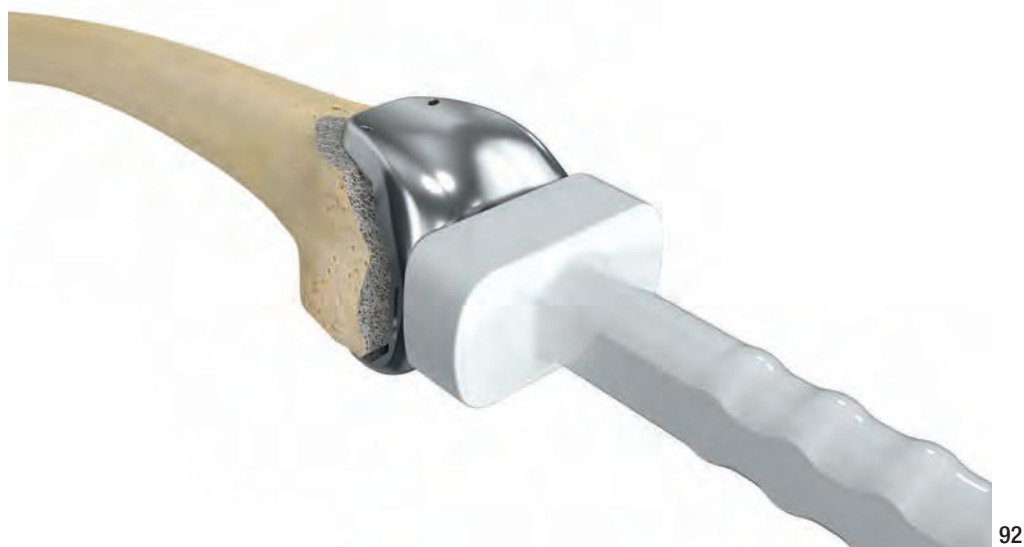
317-668 Fixation Screw for Trial Box GEMINI PS



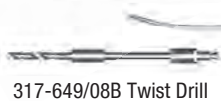
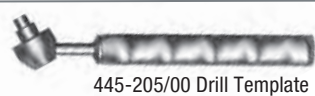
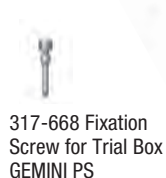
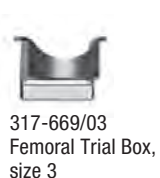
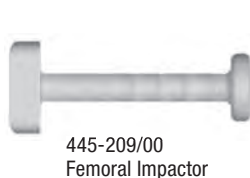
10-5373 Hex Screwdriver, hex 2.5 mm

Use the Femoral Impactor to fully seat the Femoral Trial Component (92).

The lug holes are drilled using the 5.5 mm Twist Drill. A Drill Template is used as a stop for the depth of the drill (93). The remaining posterior condyles and osteophytes can be removed using the curved Femoral Chisel (94).



Instruments



The Trial Plateau is selected and used according to which type of prosthesis is chosen – Fixed Bearing CR, Fixed Bearing PS (95).



Select the appropriate size of the Trial Plateau. The following table shows the GEMINI SL possible size combinations:

Compatibility: Femoral/Tibial Components

		Femoral Components							
		1	1B	2	2A	2B	3	4	5
PE Articulating Surfaces		1	1B	2	2A/B		3	4	5
Tibial Components	1	XX	X	X	-	-	-	-	-
	2	XX	XX	XX	X	X	X	-	-
	3	XX	XX	XX	XX	XX	XX	X	-
	4	XX	XX	XX	XX	XX	XX	XX	X
	5	XX	XX	XX	XX	XX	XX	XX	XX

XX = unrestricted compatibility
 XX = recommended combination
 X = restricted compatibility, depending on the patient's soft tissue situation in relation to the articulating surface
 - = prohibited combination

Select the appropriate thickness of the Trial Plateau:

- Fixed Bearing CR: 10 mm, 12 mm or 14 mm
- Fixed Bearing PS: 10 mm, 12 mm or 14 mm

ATTENTION: For adjusting the height of the Trial Plateau beyond 14 mm, use the +4 mm Shim in combination with the 12 mm Trial Plateau to reach 16 mm total thickness, or in combination with the 14 mm Trial Plateau to reach 18 mm total thickness.

Instruments



317-667/03 Femoral Trial, right, size 3

445-302/03 Tibial Preparation Plate, right, size 3

445-128/35 Bone Nail

445-400/00 Shim Trial Plateau, +4 mm, Fixed Bearing

445-403/10 Trial Plateau, Fixed Bearing CR

445-603/10 Trial Plateau, Fixed Bearing PS

Attach the Quick Connect Handle to the selected Trial Plateau and drive it onto the Tibial Preparation Plate (96). Trial reduction is performed with the knee joint in extension and flexion, and the ligament tension is checked (97).



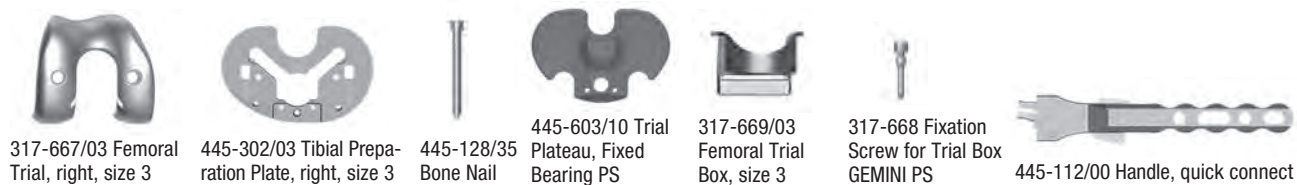
96



97

Make sure that no bony structures (e.g. osteophytes) or local soft tissue interfere with the range of motion. All Trial Components are then removed.

Instruments



317-667/03 Femoral Trial, right, size 3

445-302/03 Tibial Preparation Plate, right, size 3

445-128/35 Bone Nail

445-603/10 Trial Plateau, Fixed Bearing PS

317-669/03 Femoral Trial Box, size 3

317-668 Fixation Screw for Trial Box GEMINI PS

445-112/00 Handle, quick connect

Final Implantation

Taper Cap or Stem Extension Assembly

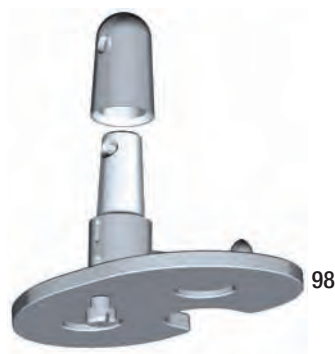
When using a modular tibial component with Taper Cap or with Stem Extension, ensure that the tibia is prepared accordingly.

ATTENTION: The Taper Cap or the Stem Extension is fixed primarily by a morse taper connection and firmly secured by two safety screws.

ATTENTION: The first safety screw (grub screw with pointed tip) is already prefitted in the taper hole. Use the Hex Screwdriver (hex. 2 mm, 64-1181/06) to position the first safety screw in the middle of the taper hole to ensure that the tip of the safety screw will not conflict with the Taper Cap or Stem Extension.

ATTENTION: The second safety screw (grub screw with flat tip) is supplied together with the modular Tibial Component inside the sterile packaging.

Overturn the modular Tibial Component. Slide the chosen Taper Cap or Stem Extension onto the male morse taper of the Tibial Component (**98**).

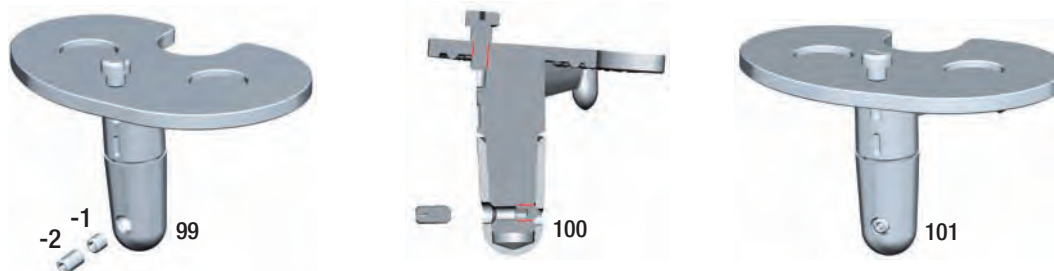


Align the mark on the Taper Cap or Stem Extension with the mark on the taper of the Tibial Component.

Ensure the coupling of the Taper Cap or Stem Extension with the Tibial component by impacting with a hammer.

ATTENTION: Place gauze over the distal end of the Taper Cap or Stem Extension during assembly.

Use the Hex Screwdriver (hex. 2 mm, 64-1181/06) to tighten the first safety screw until it stops against the Taper Cap or Stem Extension (**99**). Then tighten the second safety screw until it stops against the first safety screw (**100**). Final Tibial Component assembly (**101**).



Instruments



64-1181/06 Hex Screwdriver, hex. 2.0 mm

Fixed Bearing

The implantation sequence for GEMINI SL Fixed Bearing CR (Cruciate Retaining) and Fixed Bearing PS (Posterior Stabilized) is:

- 1 Fixed Bearing Tibial Component Implantation
- 2 Femoral Component Implantation
- 3 Fixed Bearing PE Articulating Surface Implantation

1 Fixed Bearing Tibial Component Implantation

ATTENTION: Do not remove the pre-assembled Locking Screw from the Tibial Component. The Locking Screw can be removed only after the Fixed Bearing Tibial Component implantation.

Prepare the sclerotic bone to ensure a continuous cement mantle with good cement interdigitation of 2 mm - 4 mm. This can be done by drilling holes and cleansing the bone with Pulsatile Lavage.

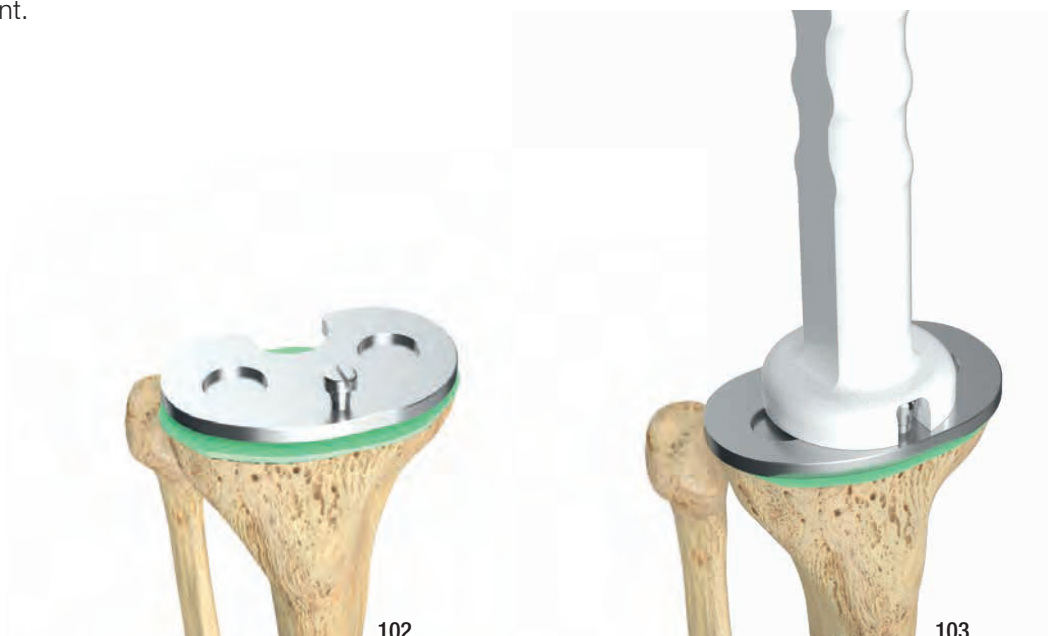
The bone cement is prepared following the specific manufacturer's instructions. Apply a layer of bone cement to the underside of the Tibial Component, on the bone, or both.

Carefully insert the Fixed Bearing Tibial Component, avoiding malrotation.

With the Tibial Component inserted, impact it using the Tibial Impactor (**102, 103**).

Complete implantation with several hammer blows to the top of the Tibial Impactor. Then use a Curette to remove all extruded cement.

ATTENTION: Ensure that excess bone cement is completely removed and no loose bone cement particles remain, especially in the posterior part of the joint.



Instruments



445-310/00 Tibial Impactor, for metal tray

2 Femoral Component Implantation

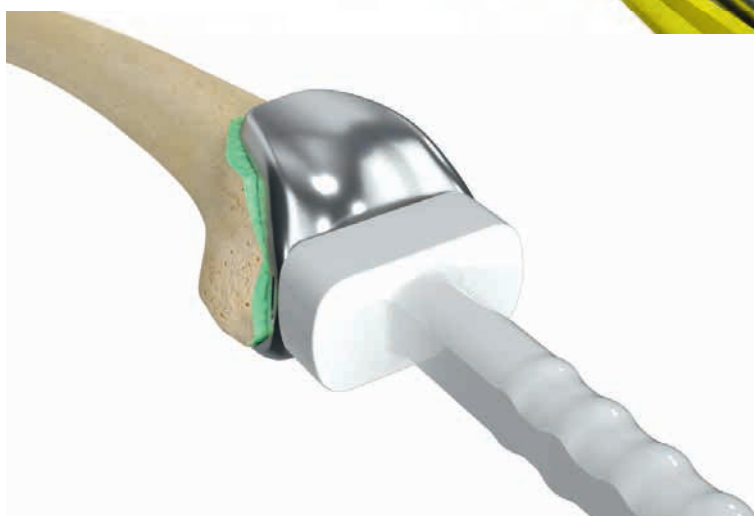
The bone cement is prepared following the specific manufacturer’s instructions.

Apply a layer of bone cement to the back of the Femoral Component, on the bone, or both.

Place the selected Femoral Component onto the bone by hand or, if preferred, use the Femoral Inserter /Extractor. Implant the Femoral Component by engaging the Femoral Lugs in the lug holes of the distal femur, and deliver several hammer blows to the Femoral Inserter/Extractor (**104**).



104



Release the Femoral Inserter/Extractor and use the Femoral Impactor to complete the component impaction (**105**). Then use a Curette to remove all extruded cement.

105

ATTENTION: Ensure that excess bone cement is completely removed and no loose bone cement particles remain, especially in the posterior part of the joint.

Instruments



445-210/00 Femoral Inserter/Extractor



445-209/00 Femoral Impactor

3 Fixed Bearing PE Articulating Surface

OPTIONAL: A trial reduction may be performed using a Trial Plateau (106).



The Fixed Bearing PE Articulating Surface (Fixed Bearing CR or Fixed Bearing PS) corresponding to the Femoral Component is selected.

Select the appropriate size of the Fixed Bearing PE Articulating Surface. The following table shows the GEMINI SL possible size combinations:

Compatibility: Femoral/Tibial Components

		Femoral Components							
		1	1B	2	2A	2B	3	4	5
PE Articulating Surfaces		1	1B	2	2A/B		3	4	5
Tibial Components	1	XX	X	X	-	-	-	-	-
	2	XX	XX	XX	X	X	X	-	-
	3	XX	XX	XX	XX	XX	XX	X	-
	4	XX	XX	XX	XX	XX	XX	XX	X
	5	XX	XX	XX	XX	XX	XX	XX	XX

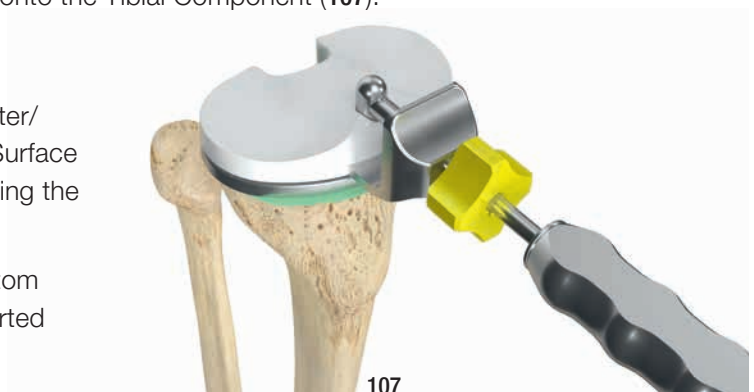
XX = unrestricted compatibility
 XX = recommended combination
 X = restricted compatibility, depending on the patient's soft tissue situation in relation to the articulating surface
 - = prohibited combination

Select the appropriate thickness of the Fixed Bearing PE Articulating Surface.

After removing the Locking Screw from the definitive Mobil Tibial Component, use the Articular Surface Inserter/Extractor to place the PE Articulating Surface onto the Tibial Component (107).

ATTENTION: Keep the Articular Surface Inserter/Extractor pushed against the PE Articulating Surface to ensure firm connection. It can be locked using the golden knob.

Ensure that the two securing pegs on the bottom surface of the PE Articulating Surface are inserted into the recesses of the Tibial Component.



Instruments



445-603/10 Trial Plateau, Fixed Bearing PS



445-309/00 Articular Surface Inserter/Extractor

Secure the PE Articulating Surface to the Tibial Component, fully tightening the locking screw using the Screwdriver (Ø 8.0 mm 322-145/01) (108).



ATTENTION: The Locking Screw is supplied and pre-assembled together with the Tibial Component.

Instruments

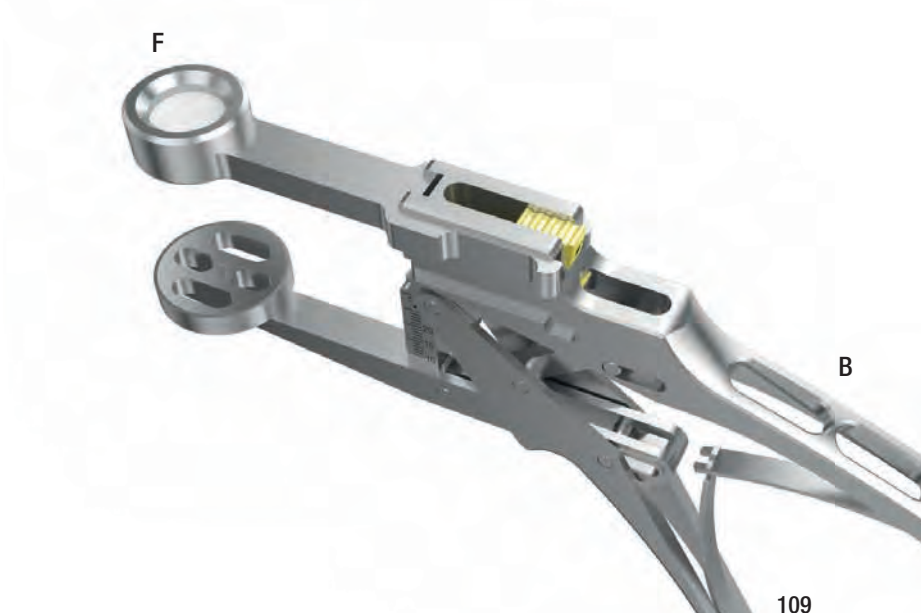


322-145/01 Screwdriver, Ø 8 mm

Patella Implantation

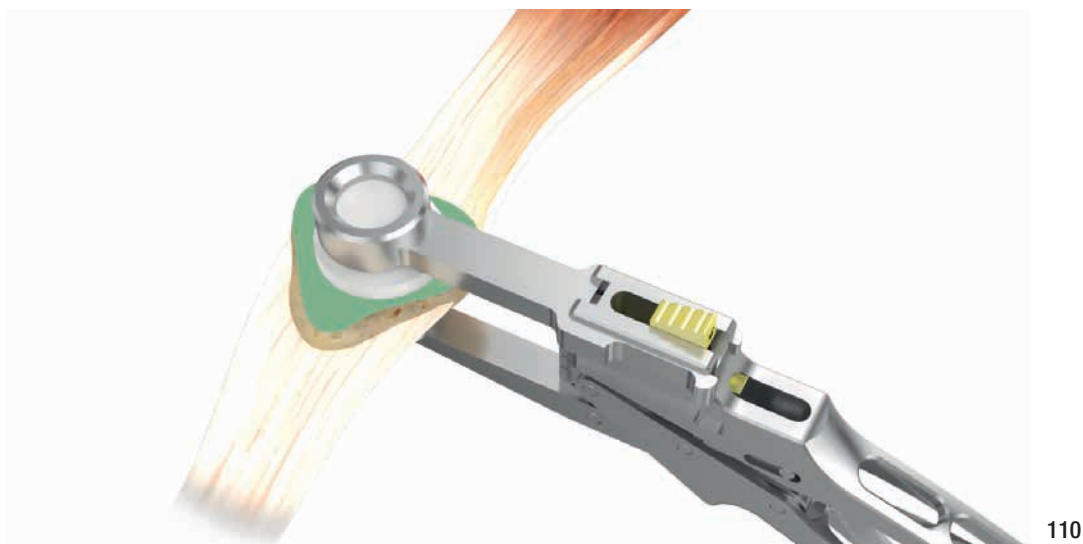
Insert the Clamp Arm (F) into the first slot from the top of the Patella Clamp Handle (B) (109).

Note: Please ensure that the pusher inserter is assembled with the Clamp Arm.



The bone cement is prepared following the specific manufacturer's instructions. Following extensive rinsing and removal of all impeding soft tissue, the bone cement is applied to the back of the implant, and the implant is placed by hand and pressed on using the Patella Clamp Handle with the Clamp Arm (110).

ATTENTION: Ensure that excess bone cement is completely removed and no loose bone cement particles remain in the joint.



Instruments



445-902/00 Patella Clamp, Handle



445-904/00 Patella Clamp, Arm

Functional Test

Perform a final functional test through an entire range of motion to check that all components are properly positioned, and also to check for proper ligament tension and patella tracking (111, 112).



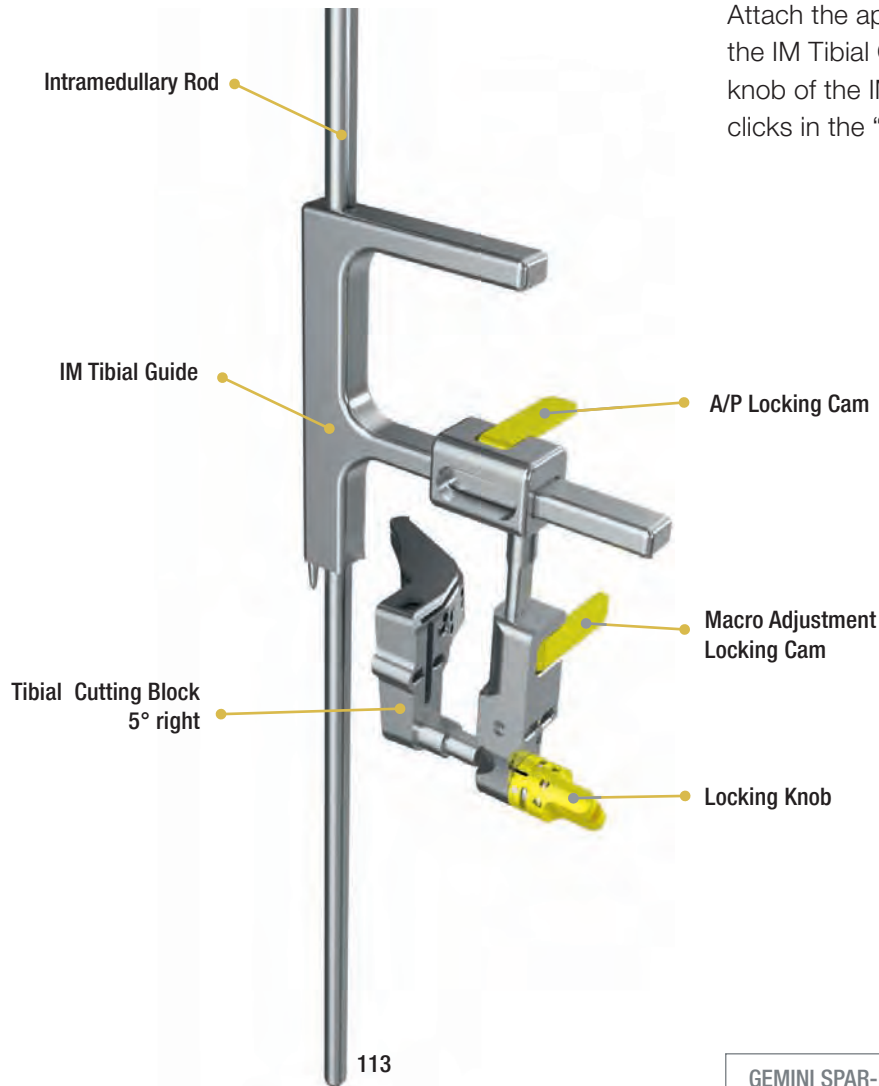
GEMINI SL Fixed Bearing CR
(Cruciate Retaining).



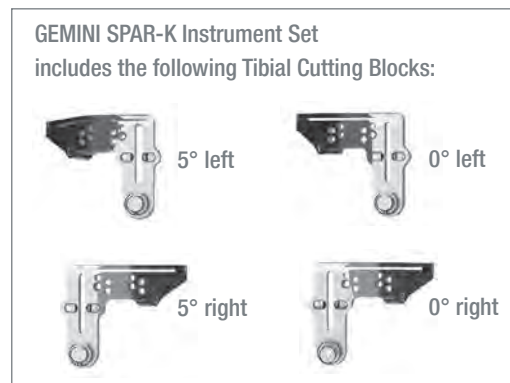
GEMINI SL Fixed Bearing PS
(Posterior Stabilized).

Appendix 1, Intramedullary Tibial Guide

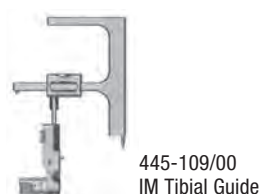
Intramedullary Tibial Guide Assembly



Attach the appropriate Tibial Cutting Block to the IM Tibial Guide and lock it by twisting the knob of the IM Tibial Guide clockwise until it clicks in the “lock position” (113).



Instruments



Intramedullary Tibial Guide Alignment

Open the tibial canal using the Step Drill. Insert the IM Tibial Guide assembly together with the Intramedullary Rod into the tibia (114).

OPTIONAL: To assess tibial alignment, attach the Quick Connect Handle to the IM Tibial Guide, and insert the Alignment Rod. Rotation and alignment can be checked by ensuring that the Alignment Rod remains parallel with the tibial axis.



Impact the IM Tibial Guide onto the proximal tibia.

Instruments



445-101/00 Intramedullary Rod
Alignment Rod:
445-113/10 short



445-109/00
IM Tibial Guide



445-112/00 Handle,
quick connect



445-110/40 Tibial
Cutting Block, 5° right

Setting the Tibial Resection Level

Insert the foot of the Adjustable Stylus into the slot of the Tibial Cutting Block and adjust it to the appropriate level. Release the Locking Cam on IM Tibial Guide allowing for macro-adjusting the height of the Tibial Cutting Block (115).



115

The scale on the body of the Adjustable Stylus indicates the amount of bone and residual cartilage to be resected.

ATTENTION:

- **GEMINI SL Fixed CR and Fixed PS** configurations have a minimum tibial component thickness of 10 mm (tibial baseplate + articulating surface).

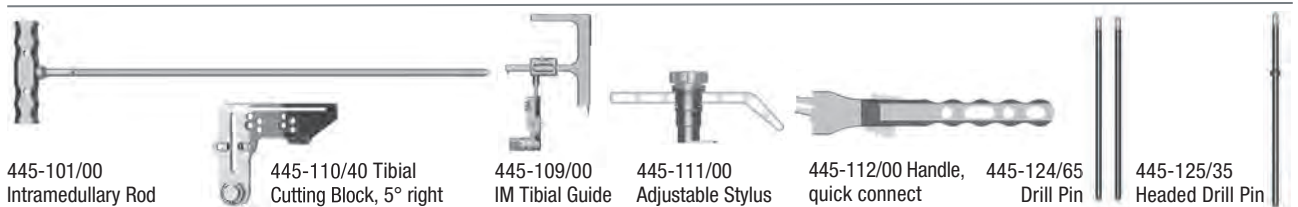
Set the Adjustable Stylus according to the patient's anatomy, avoiding excessive tibial resection. After the Tibial resection level has been set, close the Marco Adjustment Locking Cam on the IM Tibial Guide and pin the Tibial Cutting Block through the anterior parallel „0“ holes, using two Drill Pins.

Disconnect and remove the IM Tibial Guide and resect the tibia. The resection level can be adjusted by using the distal or proximal pin holes, which move the block 2 mm more proximal, 2 mm more distal or 4 mm more distal. If desired, the Cutting Block can be more securely fixed with an additional Headed Drill Pin placed through the distal angled hole (116).



116

Instruments



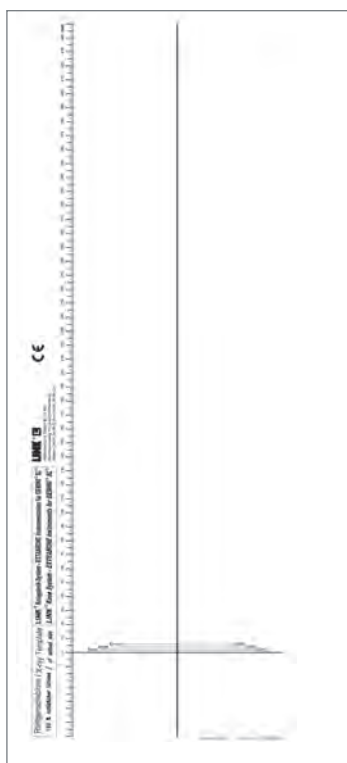
Appendix 2, EXTRABONE – Extramedullary Femoral Referencing

EXTRABONE is an instrument which allows for extramedullary femur referencing. It eliminates the need to open the femoral canal as a means of alignment orientation.

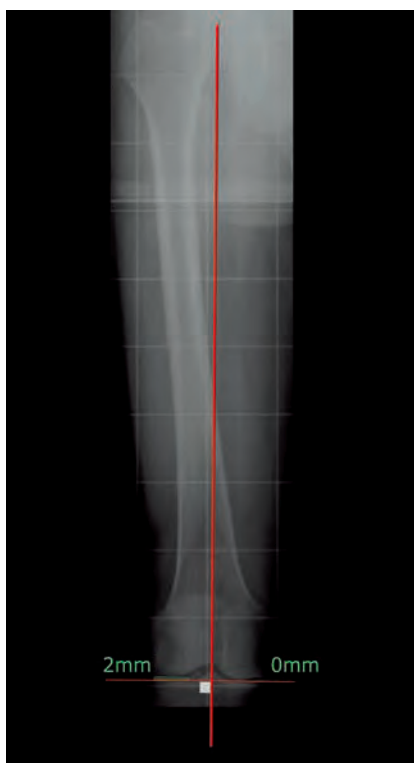
Preoperative Planning

With EXTRABONE, the position and alignment of the distal femoral resection plane are planned on the A/P femoral X-ray. A special X-ray template (117) is available for this purpose. The long axis is aligned to the head of the femur. The short axis is applied tangentially to the widest point of the distal femoral condyle. Then the distance to the shorter femoral condyle is determined as the difference. In the example (118, 119) there is a 2 mm offset between the medial and lateral femoral condyles. With this method, the cartilage layer is not taken into account, as it is not visualized by the imaging technique. Therefore the cartilage layer has to be removed intraoperatively in order to create the same preoperative condition.

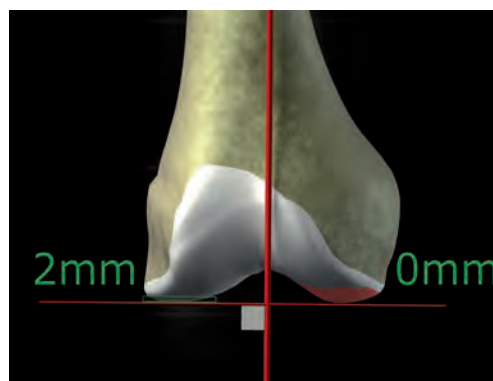
ATTENTION: The basis for a correct technique is accurate preplanning based on an X-ray of the total femur.



117

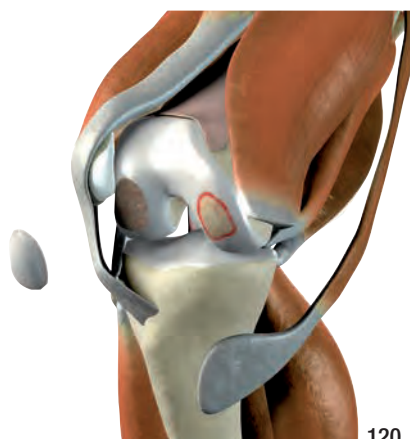


118



119

As the cartilage was not taken into account in the preceding radiological planning, the cartilage layer (if still present) has to be removed (120).



120

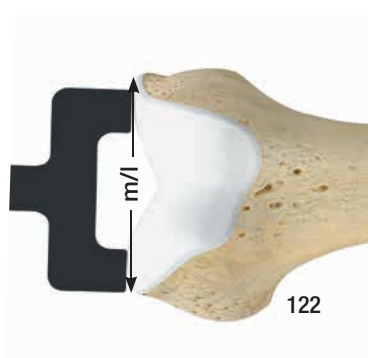
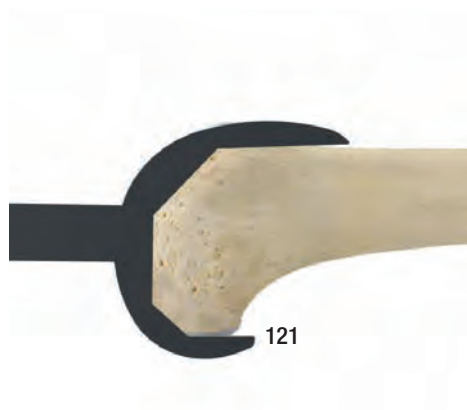
Determination of the Femoral Resection Level

The Femoral Template is used to verify the femoral size determined in preoperative planning and to determine the femoral resection level.

The femoral size is determined by holding the Femoral Template against the bone. The contour shown corresponds to size 3 (121).

- If the femur profile is a perfect fit or larger, the Distal Femoral Cutting Block is left in the “0” hole position (large femur, size 3 to 5).
- If the femur profile is smaller, the Distal Femoral Cutting Block should be later re-positioned in the -2 holes (small femur, size 1 to 2B).

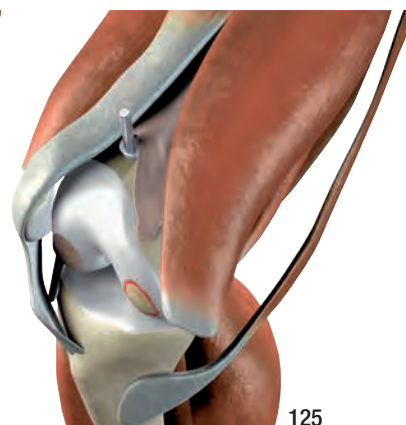
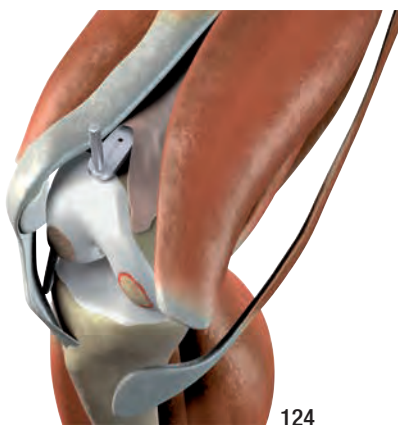
The M/L dimension can be checked in addition (122).



ATTENTION: The final size of the Femoral Component is not assessed during this step, and will be addressed later in the technique.

Extramedullary Femoral Referencing

The Guide for flexion/extension alignment is placed on the anterior bone (123, 124, 125).



Instruments

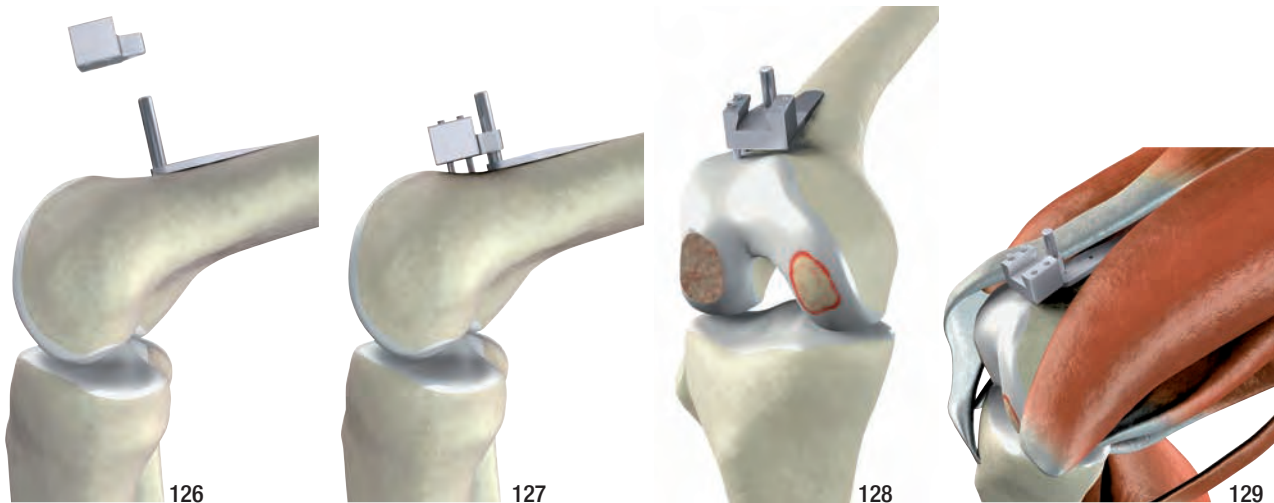


317-845/00 Femoral Sizer/Template



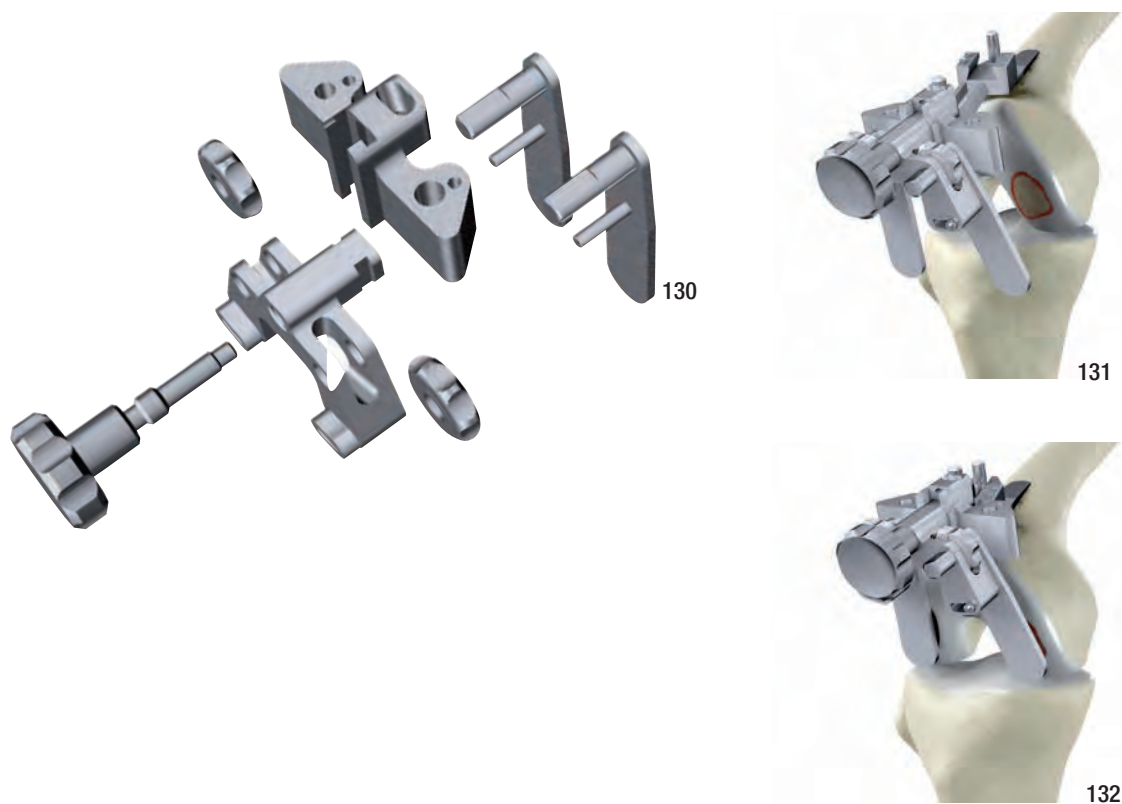
317-825/00 Guide

The Positioner Guide is placed vertically onto the guide and fixed with two Drill Pins (126, 127, 128, 129).



The Alignment Instrument for holding the Distal Cutting Block is attached with the Connector piece (130) and inserted into the Positioner Guide (131). The Alignment Instrument is inserted far enough that the two condyle stop plates rest against the distal medial and lateral femoral condyles (132).

The condyle stop plates can be swiveled from 0° to 25° to ensure that they are precisely positioned.



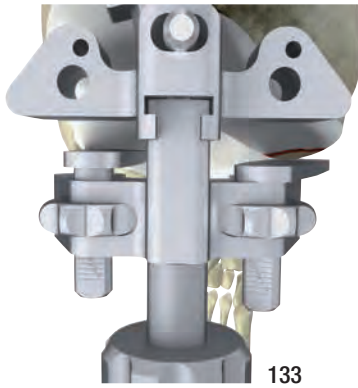
Instruments



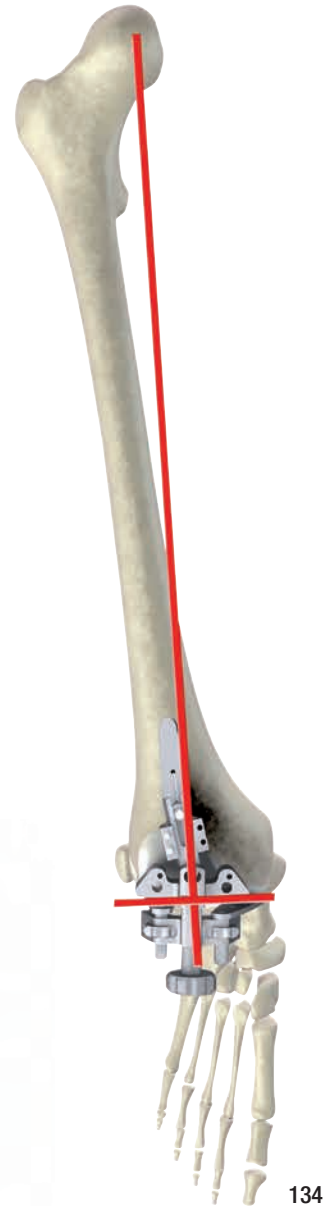
The Alignment Instrument has a setting screw and scale medially and laterally (**133**) for transferring the preoperative planning data for the offset of the distal femoral condyles to the distal femur.

The varus/valgus orientation of the resection is achieved by adjusting the condyle stop plates using the medial and lateral setting screws.

This alignment can be verified intraoperatively with the Axial Alignment Guide and an Alignment Rod (**134**).



133



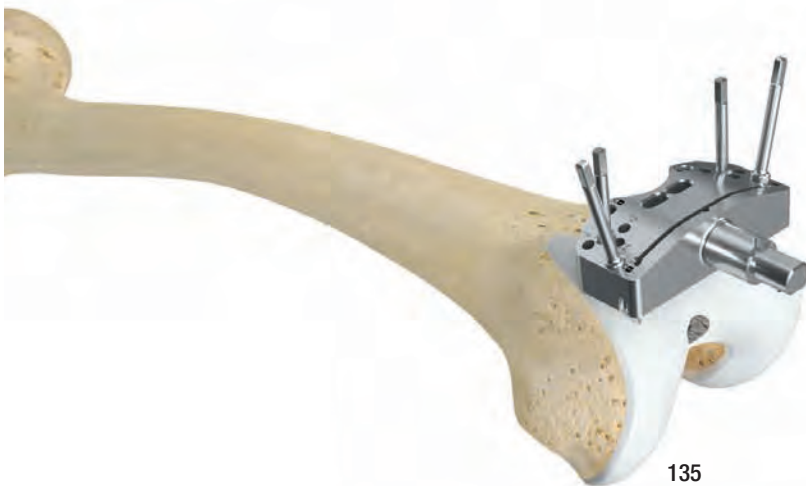
134

Two Drill Pins are inserted for referencing the position of the Distal Femoral Cutting Block.

According to the previously measured femoral size, the Distal Femoral Cutting Block is:

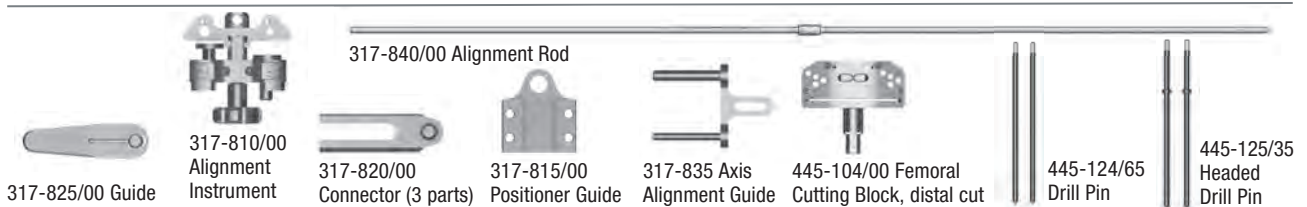
- left in the "0" hole position (large femur, size 3 to 5).
- re-positioned in the -2 holes (small femur, size 1 to 2B).

To fully secure Distal Femoral Cutting Block to the femur, 2 Headed Drill Pins are inserted into oblique holes (**135**).



135

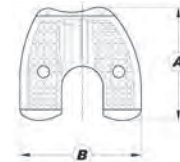
Instruments



GEMINI SL Femoral Components – Fixed Bearing CR

to be used with Fixed Bearing CR PE Articulating Surfaces

cemented



MAT CoCrMo **MAT** CoCrMo **MAT** CoCrMo/TiNbN

SMS* REF	SpheroGrip REF	SMS*/LINK PorEx** REF	Size	Side	A mm	B mm	Identification
318-102/01	318-402/01	318-206/01	x-small	right	52	55	R1
318-102/16	318-402/16	318-206/16	x-small plus	right	55	62	R1B
318-102/02	318-402/02	318-206/02	small	right	59	62	R2
318-102/25	318-402/25	318-206/25	medium small	right	59	69	R2A
318-102/26	318-402/26	318-206/26	medium small plus	right	62	69	R2B
318-102/03	318-402/03	318-206/03	medium	right	65	69	R3
318-102/04	318-402/04	318-206/04	large	right	67	72	R4
318-102/05	318-402/05	318-206/05	x-large	right	72	76	R5
318-103/01	318-403/01	318-207/01	x-small	left	52	55	L1
318-103/16	318-403/16	318-207/16	x-small plus	left	55	62	L1B
318-103/02	318-403/02	318-207/02	small	left	59	62	L2
318-103/25	318-403/25	318-207/25	medium small	left	59	69	L2A
318-103/26	318-403/26	318-207/26	medium small plus	left	62	69	L2B
318-103/03	318-403/03	318-207/03	medium	left	65	69	L3
318-103/04	318-403/04	318-207/04	large	left	67	72	L4
318-103/05	318-403/05	318-207/05	x-large	left	72	76	L5

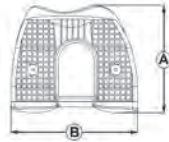
* SMS: Squarical Monobloc Structure.

** LINK PorEx: TiNbN = Titanium Niobium Nitride (gold color).

GEMINI SL Femoral Components – PS

to be used with Fixed Bearing PS PE Articulating Surfaces

cemented



MAT CoCrMo **MAT** CoCrMo **MAT** CoCrMo/TiNbN

SMS* REF	Spherogrip REF	SMS*/LINK PorEx** REF	Size	Side	A mm	B mm	Identi- fication
318-112/01	318-412/01	318-214/01	x-small	right	52	55	R1
318-112/16	318-412/16	318-214/16	x-small plus	right	55	62	R1B
318-112/02	318-412/02	318-214/02	small	right	59	62	R2
318-112/25	318-412/25	318-214/25	medium small	right	59	69	R2A
318-112/26	318-412/26	318-214/26	medium small plus	right	62	69	R2B
318-112/03	318-412/03	318-214/03	medium	right	65	69	R3
318-112/04	318-412/04	318-214/04	large	right	67	72	R4
318-112/05	318-412/05	318-214/05	x-large	right	72	76	R5
318-113/01	318-413/01	318-215/01	x-small	left	52	55	L1
318-113/16	318-413/16	318-215/16	x-small plus	left	55	62	L1B
318-113/02	318-413/02	318-215/02	small	left	59	62	L2
318-113/25	318-413/25	318-215/25	medium small	left	59	69	L2A
318-113/26	318-413/26	318-215/26	medium small plus	left	62	69	L2B
318-113/03	318-413/03	318-215/03	medium	left	65	69	L3
318-113/04	318-413/04	318-215/04	large	left	67	72	L4
318-113/05	318-413/05	318-215/05	x-large	left	72	76	L5

* SMS: Squarical Monobloc Structure.

** LINK PorEx: TiNbN = Titanium Niobium Nitride (gold color).

GEMINI SL Tibial Components – Fixed Bearing

to be used with Fixed Bearing CR and PS PE Articulating Surfaces

cemented



MAT CoCrMo **MAT** CoCrMo **MAT** CoCrMo/TiNbN

SMS* REF	SpheroGrip REF	SMS*/LINK PorEx** REF	Size	Side	A mm	B mm	Identi- fication
318-372/01	318-482/01	318-328/01	x-small	right	42	62	R1
318-372/02	318-482/02	318-328/02	small	right	46	69	R2
318-372/03	318-482/03	318-328/03	medium	right	47	74	R3
318-372/04	318-482/04	318-328/04	large	right	53	78	R4
318-372/05	318-482/05	318-328/05	x-large	right	56	85	R5
318-373/01	318-483/01	318-329/01	x-small	left	42	62	L1
318-373/02	318-483/02	318-329/02	small	left	46	69	L2
318-373/03	318-483/03	318-329/03	medium	left	47	74	L3
318-373/04	318-483/04	318-329/04	large	left	53	78	L4
318-373/05	318-483/05	318-329/05	x-large	left	56	85	L5

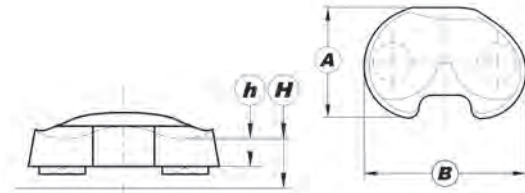
incl. Locking Screw for PE Articulating Surface

* SMS: Squarical Monobloc Structure.

** LINK PorEx: TiNbN = Titanium Niobium Nitride (gold color).

GEMINI SL Tibial Components – Fixed Bearing CR

to be used with Femoral Components CR (Cruciate Retaining) and Fixed Bearing Tibial Components



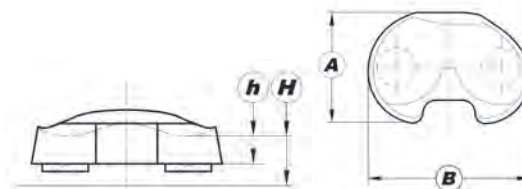
Fixed Bearing CR - PE Articulating Surfaces

MAT UHMWPE

REF	Size	Side	H mm	h mm	A mm	B mm	Identification
318-231/10	x-small	right	10	6	42	62	R1
318-238/10	x-small plus	right	10	6	46	69	R1B
318-232/10	small	right	10	6	46	69	R2
318-237/10	medium small / medium small plus	right	10	6	47	74	R2A / R2B
318-233/10	medium	right	10	6	47	74	R3
318-234/10	large	right	10	6	53	78	R4
318-235/10	x-large	right	10	6	56	85	R5
318-241/10	x-small	left	10	6	42	62	L1
318-248/10	x-small plus	left	10	6	46	69	L1B
318-242/10	small	left	10	6	46	69	L2
318-247/10	medium small / medium small plus	left	10	6	47	74	L2A / L2B
318-243/10	medium	left	10	6	47	74	L3
318-244/10	large	left	10	6	53	78	L4
318-245/10	x-large	left	10	6	56	85	L5
318-231/12	x-small	right	12	8	42	62	R1
318-238/12	x-small plus	right	12	8	46	69	R1B
318-232/12	small	right	12	8	46	69	R2
318-237/12	medium small / medium small plus	right	12	8	47	74	R2A / R2B
318-233/12	medium	right	12	8	47	74	R3
318-234/12	large	right	12	8	53	78	R4
318-235/12	x-large	right	12	8	56	85	R5
318-241/12	x-small	left	12	8	42	62	L1
318-248/12	x-small plus	left	12	8	46	69	L1B
318-242/12	small	left	12	8	46	69	L2
318-247/12	medium small / medium small plus	left	12	8	47	74	L2A / L2B
318-243/12	medium	left	12	8	47	74	L3
318-244/12	large	left	12	8	53	78	L4
318-245/12	x-large	left	12	8	56	85	L5
318-231/14	x-small	right	14	10	42	62	R1
318-238/14	x-small plus	right	14	10	46	69	R1B
318-232/14	small	right	14	10	46	69	R2
318-237/14	medium small / medium small plus	right	14	10	47	74	R2A / R2B
318-233/14	medium	right	14	10	47	74	R3
318-234/14	large	right	14	10	53	78	R4
318-235/14	x-large	right	14	10	56	85	R5

Fixed Bearing CR - PE Articulating Surfaces

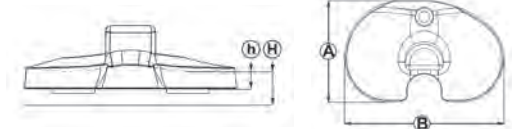
MAT UHMWPE



REF	Size	Side	H mm	h mm	A mm	B mm	Identi- fication
318-241/14	x-small	left	14	10	42	62	L1
318-248/14	x-small plus	left	14	10	46	69	L1B
318-242/14	small	left	14	10	46	69	L2
318-247/14	medium small / medium small plus	left	14	10	47	74	L2A / L2B
318-243/14	medium	left	14	10	47	74	L3
318-244/14	large	left	14	10	53	78	L4
318-245/14	x-large	left	14	10	56	85	L5
318-231/16	x-small	right	16	12	42	62	R1
318-238/16	x-small plus	right	16	12	46	69	R1B
318-232/16	small	right	16	12	46	69	R2
318-237/16	medium small / medium small plus	right	16	12	47	74	R2A / R2B
318-233/16	medium	right	16	12	47	74	R3
318-234/16	large	right	16	12	53	78	R4
318-235/16	x-large	right	16	12	56	85	R5
318-241/16	x-small	left	16	12	42	62	L1
318-248/16	x-small plus	left	16	12	46	69	L1B
318-242/16	small	left	16	12	46	69	L2
318-247/16	medium small / medium small plus	left	16	12	47	74	L2A / L2B
318-243/16	medium	left	16	12	47	74	L3
318-244/16	large	left	16	12	53	78	L4
318-245/16	x-large	left	16	12	56	85	L5
318-231/18	x-small	right	18	14	42	62	R1
318-238/18	x-small plus	right	18	14	46	69	R1B
318-232/18	small	right	18	14	46	69	R2
318-237/18	medium small / medium small plus	right	18	14	47	74	R2A / R2B
318-233/18	medium	right	18	14	47	74	R3
318-234/18	large	right	18	14	53	78	R4
318-235/18	x-large	right	18	14	56	85	R5
318-241/18	x-small	left	18	14	42	62	L1
318-248/18	x-small plus	left	18	14	46	69	L1B
318-242/18	small	left	18	14	46	69	L2
318-247/18	medium small / medium small plus	left	18	14	47	74	L2A / L2B
318-243/18	medium	left	18	14	47	74	L3
318-244/18	large	left	18	14	53	78	L4
318-245/18	x-large	left	18	14	56	85	L5

GEMINI SL Tibial Components – Fixed Bearing PS

to be used with Femoral Components PS (Posterior Stabilized) and Fixed Bearing Tibial Components



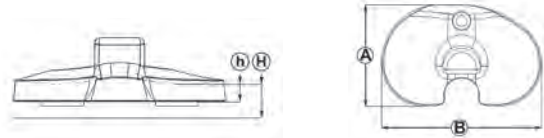
Fixed Bearing PS - PE Articulating Surfaces

MAT UHMWPE

REF	Size	Side	H mm	h mm	A mm	B mm	Identification
318-251/10	x-small	right	10	6	42	62	R1
318-258/10	x-small plus	right	10	6	46	69	R1B
318-252/10	small	right	10	6	46	69	R2
318-256/10	medium small / medium small plus	right	10	6	47	74	R2A / R2B
318-253/10	medium	right	10	6	47	74	R3
318-254/10	large	right	10	6	53	78	R4
318-255/10	x-large	right	10	6	56	85	R5
318-261/10	x-small	left	10	6	42	62	L1
318-268/10	x-small plus	left	10	6	46	69	L1B
318-262/10	small	left	10	6	46	69	L2
318-266/10	medium small / medium small plus	left	10	6	47	74	L2A / L2B
318-263/10	medium	left	10	6	47	74	L3
318-264/10	large	left	10	6	53	78	L4
318-265/10	x-large	left	10	6	56	85	L5
318-251/12	x-small	right	12	8	42	62	R1
318-258/12	x-small plus	right	12	8	46	69	R1B
318-252/12	small	right	12	8	46	69	R2
318-256/12	medium small / medium small plus	right	12	8	47	74	R2A / R2B
318-253/12	medium	right	12	8	47	74	R3
318-254/12	large	right	12	8	53	78	R4
318-255/12	x-large	right	12	8	56	85	R5
318-261/12	x-small	left	12	8	42	62	L1
318-268/12	x-small plus	left	12	8	46	69	L1B
318-262/12	small	left	12	8	46	69	L2
318-266/12	medium small / medium small plus	left	12	8	47	74	L2A / L2B
318-263/12	medium	left	12	8	47	74	L3
318-264/12	large	left	12	8	53	78	L4
318-265/12	x-large	left	12	8	56	85	L5

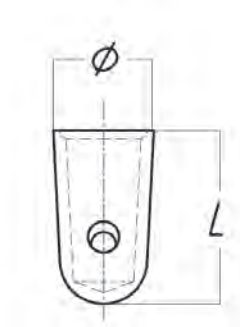
Fixed Bearing PS - PE Articulating Surfaces

MAT UHMWPE



REF	Size	Side	H mm	h mm	A mm	B mm	Identification
318-251/14	x-small	right	14	10	42	62	R1
318-258/14	x-small plus	right	14	10	46	69	R1B
318-252/14	small	right	14	10	46	69	R2
318-256/14	medium small / medium small plus	right	14	10	47	74	R2A / R2B
318-253/14	medium	right	14	10	47	74	R3
318-254/14	large	right	14	10	53	78	R4
318-255/14	x-large	right	14	10	56	85	R5
318-261/14	x-small	left	14	10	42	62	L1
318-268/14	x-small plus	left	14	10	46	69	L1B
318-262/14	small	left	14	10	46	69	L2
318-266/14	medium small / medium small plus	left	14	10	47	74	L2A / L2B
318-263/14	medium	left	14	10	47	74	L3
318-264/14	large	left	14	10	53	78	L4
318-265/14	x-large	left	14	10	56	85	L5
318-251/16	x-small	right	16	12	42	62	R1
318-258/16	x-small plus	right	16	12	46	69	R1B
318-252/16	small	right	16	12	46	69	R2
318-256/16	medium small / medium small plus	right	16	12	47	74	R2A / R2B
318-253/16	medium	right	16	12	47	74	R3
318-254/16	large	right	16	12	53	78	R4
318-255/16	x-large	right	16	12	56	85	R5
318-261/16	x-small	left	16	12	42	62	L1
318-268/16	x-small plus	left	16	12	46	69	L1B
318-262/16	small	left	16	12	46	69	L2
318-266/16	medium small / medium small plus	left	16	12	47	74	L2A / L2B
318-263/16	medium	left	16	12	47	74	L3
318-264/16	large	left	16	12	53	78	L4
318-265/16	x-large	left	16	12	56	85	L5
318-251/18	x-small	right	18	14	42	62	R1
318-258/18	x-small plus	right	18	14	46	69	R1B
318-252/18	small	right	18	14	46	69	R2
318-256/18	medium small / medium small plus	right	18	14	47	74	R2A / R2B
318-253/18	medium	right	18	14	47	74	R3
318-254/18	large	right	18	14	53	78	R4
318-255/18	x-large	right	18	14	56	85	R5
318-261/18	x-small	left	18	14	42	62	L1
318-268/18	x-small plus	left	18	14	46	69	L1B
318-262/18	small	left	18	14	46	69	L2
318-266/18	medium small / medium small plus	left	18	14	47	74	L2A / L2B
318-263/18	medium	left	18	14	47	74	L3
318-264/18	large	left	18	14	53	78	L4
318-265/18	x-large	left	18	14	56	85	L5

GEMINI SL Total Knee System



Taper Caps for Tibial Components

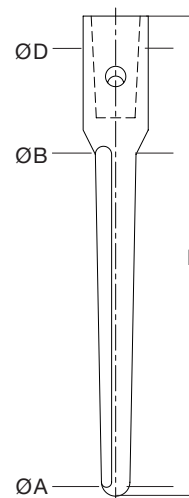
cemented	
REF	MAT CoCrMo
318-314	Ø 16 mm, length (L) 28 mm

cementless	
REF	MAT Ti6Al4V (Tilastan)
318-315	Ø 16 mm, length (L) 28 mm

The taper of the tibial component for coupling with modular stems can be covered with the taper cap, thus providing a short prosthesis stem (overall length = 49 mm). The cap is fixed to the taper by means of a hex screw using a hex screwdriver (hex. 2.0 mm). The cap is provided separately in sterile packaging.

Tibial Stems,
MAT Ti6Al4V (Tilastan)

cemented					
REF	Ø A mm	Ø B mm	Ø D mm	L mm	LT mm
318-190/07	7	10	16	50	70
318-190/10	7	10	16	80	100
318-190/14	7	10	16	120	140



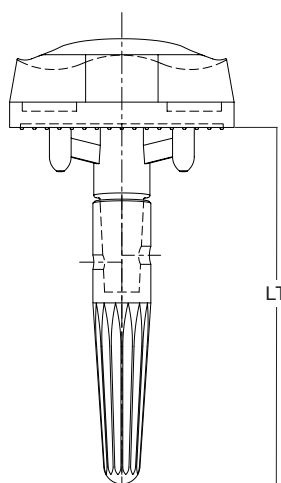
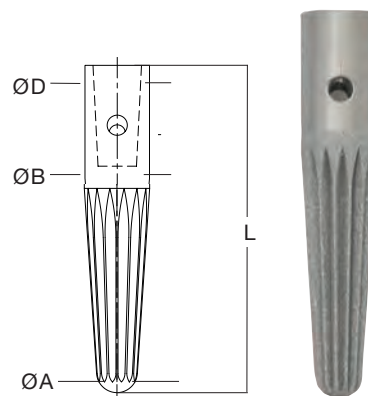
GEMINI SL Total Knee System

Tibial Stems,

MAT Ti6Al4V (Tilastan)

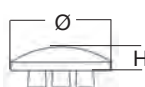
cementless

REF	Ø A mm	Ø B mm	Ø D mm	L mm	LT mm
318-191/07	10	16	16	50	70
318-191/10	10	16	16	80	100
318-191/14	10	16	16	120	140



Patella Resurfacing Components, 3-peg,

MAT UHMWPE

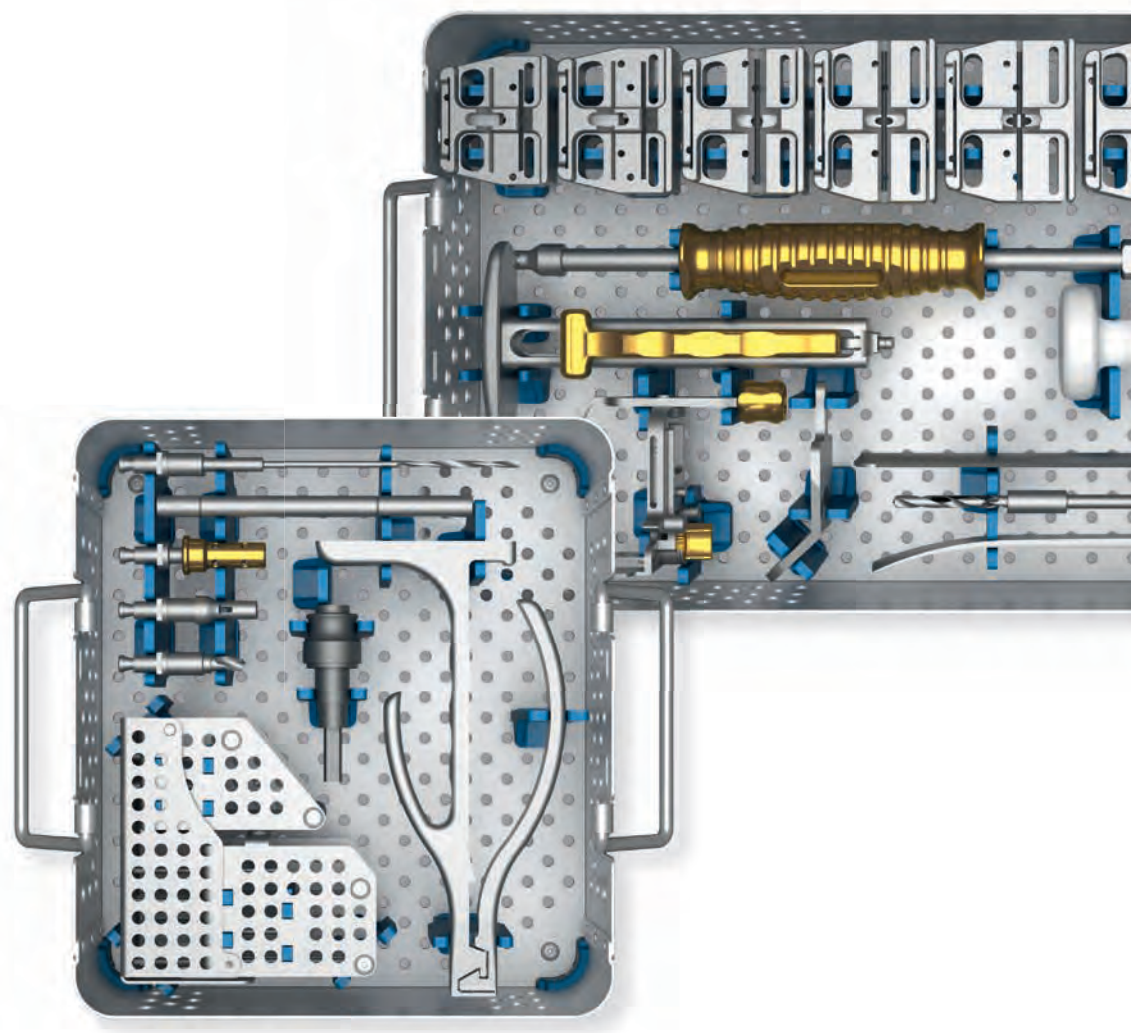


REF	Size	Ø mm	Height mm
318-401/25	1	25	7
318-401/28	2	28	8
318-401/31	3	31	9
318-401/34	4	34	10



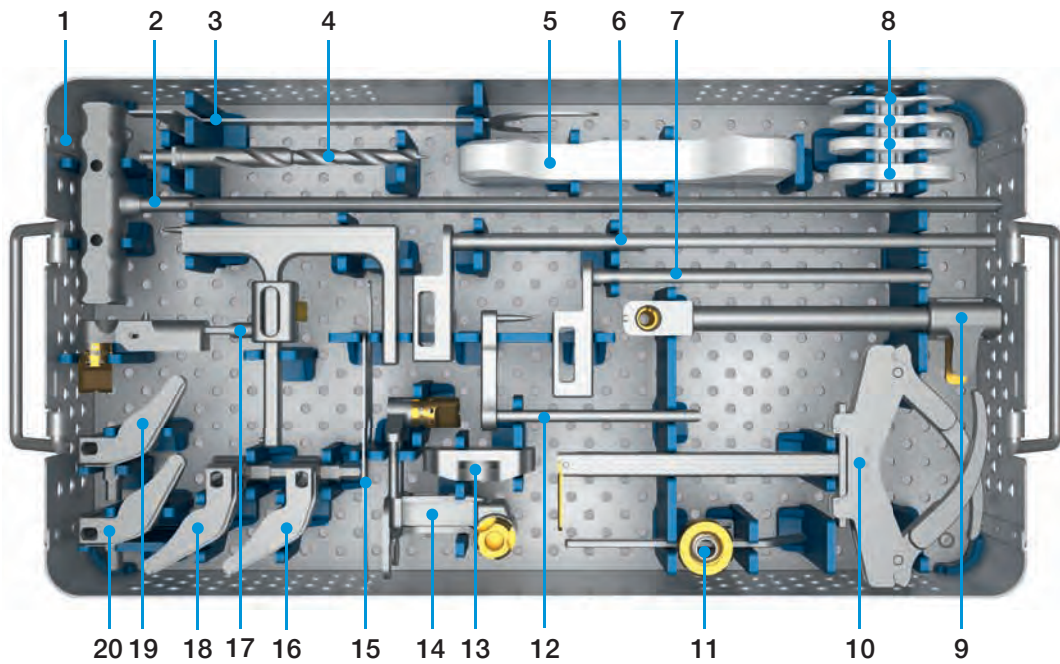
Instrument Set for Patella Components are available on request.

GEMINI SPAR-K Instrument Set



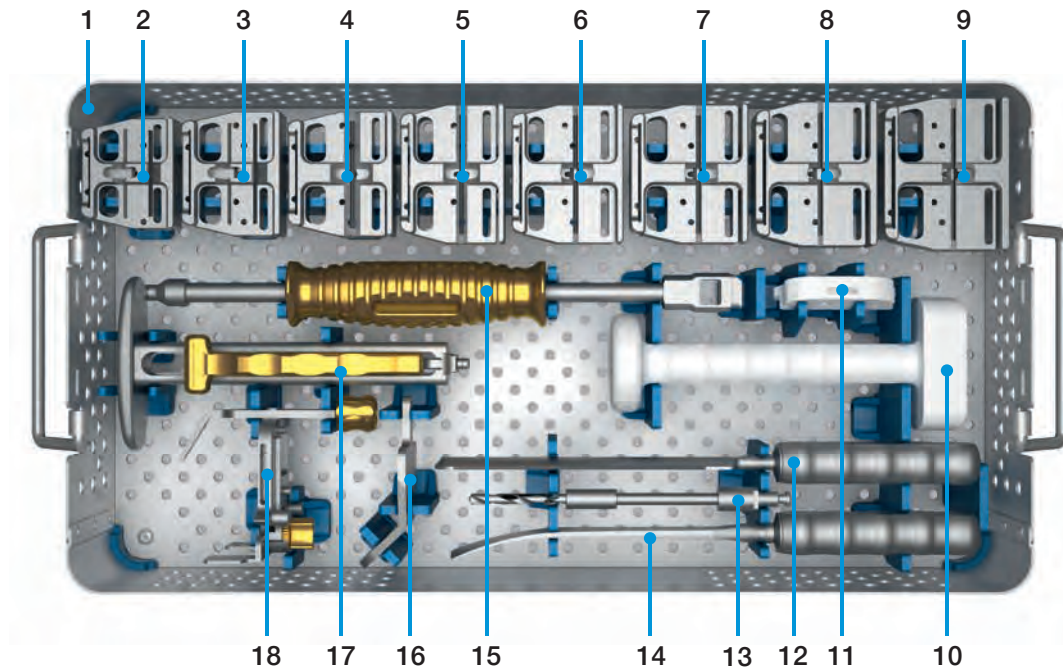
REF		GEMINI SPAR-K Instrument Set:	Fixed Bearing CR	Fixed Bearing PS
445-001/00	Case 1	Femoral/Tibial Resection Instruments	X	X
445-002/00	Case 2	Femoral General Instruments	X	X
445-003/00	Case 3	Tibial General Instruments	X	X
445-004/00	Case 4	Fixed Bearing CR Instruments	X	
445-006/00	Case 5	Fixed Bearing PS Instruments		X
445-007/00	Case 6	Pins & General Instruments	X	X
445-008/00	Case 7	Femoral Trial Prostheses Instruments	X	X
		Additional Instrument Sets:		
445-009/00	Case 8	Patella Instruments - Upon request only		
317-800/00		EXTRABONE Instruments - Upon request only		

445-001/00 Case 1 – Femoral/Tibial Resection Instruments



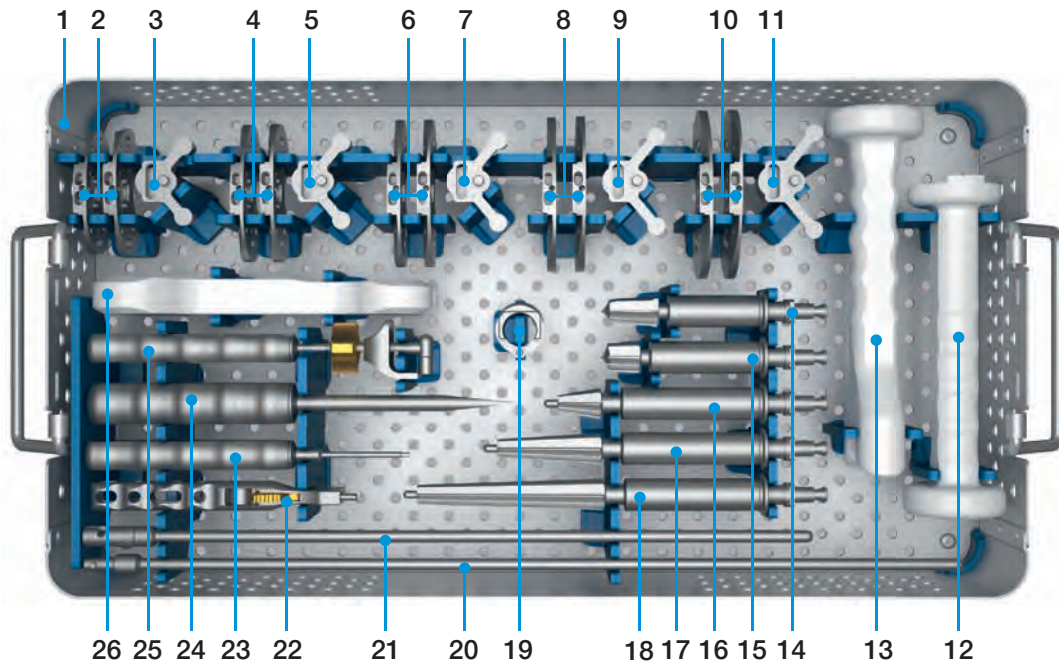
1	445-010/00	Instrument Tray 1, empty, 485 x 253 x 100 mm (incl. lid)
2	445-101/00	IM Rod, Ø 8.0 mm
3	317-845/00	Femoral Sizer/Template
4	319-505/00B	Step Drill, with Hudson Fitting (B)
5	445-114/08	Spacer, height: 10 mm, extension
6	445-106/20	EM Tibial Guide, distal rod, long
7	445-106/10	EM Tibial Guide, distal rod, short
		Shims
	445-115/12	Height: 12 mm
8	445-115/14	Height: 14 mm
	445-115/16	Height: 16 mm
	445-115/18	Height: 18 mm
9	445-107/00	EM Tibial Guide, proximal tube
10	445-105/00	EM Tibial Guide, ankle clamp
11	445-111/00	Stylus, adjustable
12	445-108/00	EM Tibial Guide, spike rod
13	445-104/00	Femoral Cutting Block, distal cut
14	445-102/00	Femoral Alignment Guide, varus/valgus adjustment
15	317-802/53	Cutting Template
16	445-110/30	Tibial Cutting Block, 5° left
17	445-109/00	IM Tibial Guide
18	445-110/10	Tibial Cutting Block, 0° left
19	445-110/40	Tibial Cutting Block, 5° right
20	445-110/20	Tibial Cutting Block, 0° right

445-002/00 Case 2 – Femoral General Instruments



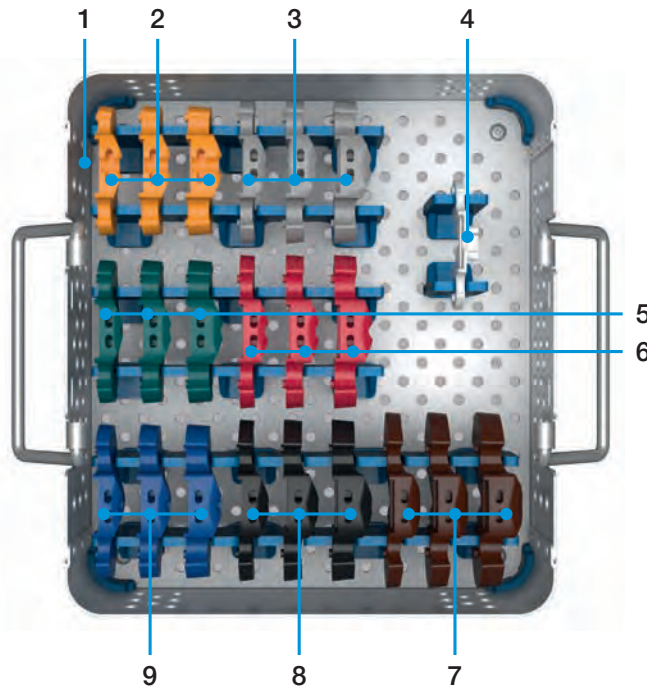
1	445-020/00	Instrument Tray 2, empty, 485 x 253 x 100 mm (incl. lid)
4-in-1 Femoral Cutting Blocks		
2	445-202/01	Size 1
3	445-202/16	Size 1B
4	445-202/02	Size 2
5	445-202/25	Size 2A
6	445-202/26	Size 2B
7	445-202/03	Size 3
8	445-202/04	Size 4
9	445-202/05	Size 5
10	445-209/00	Femoral Impactor
11	445-203/10	Flexion Spacer, H = 10 mm
12	317-643	Femoral Rasp, L = 285 mm
13	317-649/08B	Twist Drill, L = 160 mm, Ø 5.5 mm, with Hudson Fitting (B)
14	445-208/00	Femoral Chisel
15	445-206/00	Slaphammer
16	445-204/00	Femoral Sulcus Template
17	445-207/00	Impactor/Extractor Handle
18	445-201/00	Femoral Sizer

445-003/00 Case 3 – Tibial General Instruments



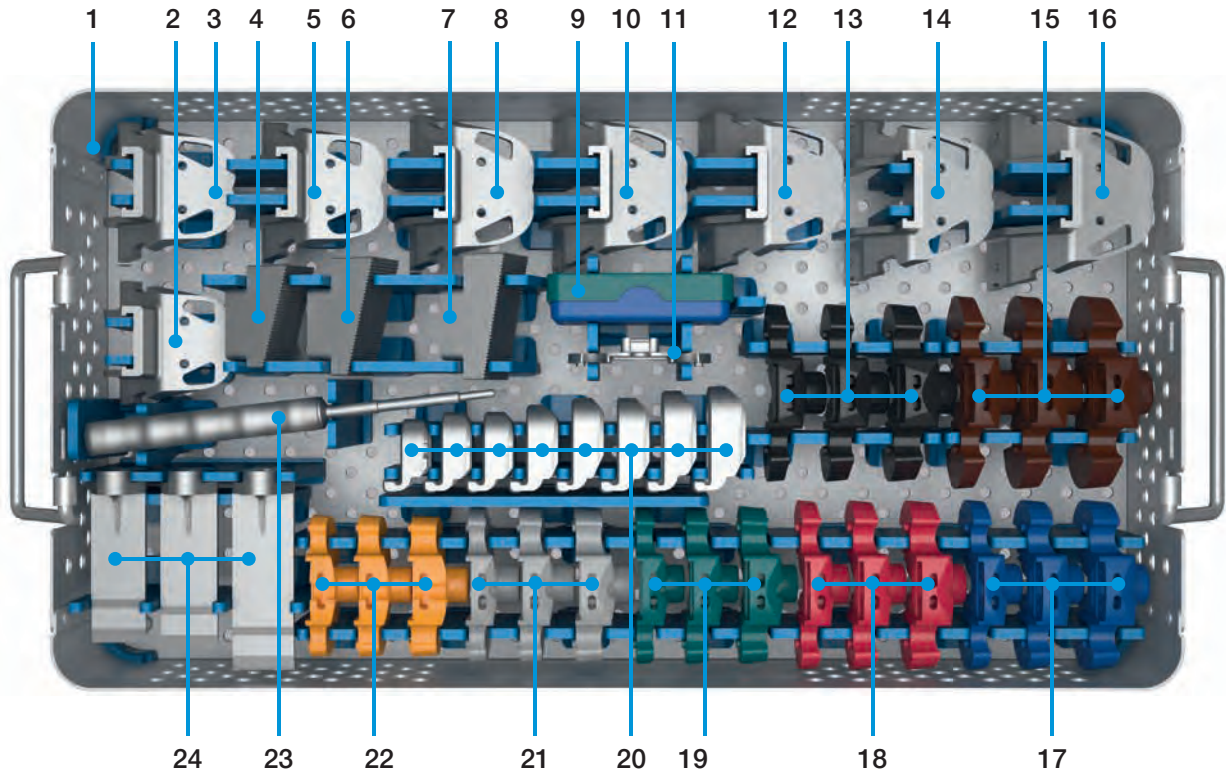
1	445-030/00	Instrument Tray 3, empty, 485 x 253 x 100 mm (incl. lid)
2	445-301/01 445-302/01	Tibial Preparation Plate, size 1, left Tibial Preparation Plate, size 1, right
3	445-305/01	Tibial Keel Punch, size 1
4	445-301/02 445-302/02	Tibial Preparation Plate, size 2, left Tibial Preparation Plate, size 2, right
5	445-305/02	Tibial Keel Punch, size 2
6	445-301/03 445-302/03	Tibial Preparation Plate, size 3, left Tibial Preparation Plate, size 3, right
7	445-305/03	Tibial Keel Punch, size 3
8	445-301/04 445-302/04	Tibial Preparation Plate, size 4, left Tibial Preparation Plate, size 4, right
9	445-305/04	Tibial Keel Punch, size 4
10	445-301/05 445-302/05	Tibial Preparation Plate, size 5, left Tibial Preparation Plate, size 5, right
11	445-305/05	Tibial Keel Punch, size 5
12	445-310/00	Tibial Impactor, metal tray
13	445-308/00	Tibial Impactor
14	445-304/10	Tapered Reamer, Assignment SpheroGrip Tibia, Hudson Fitting (B)
15	445-304/20	Tapered Reamer, Assignment Taper Cap, Hudson Fitting (B)
16	445-304/30	Tapered Reamer, L = 50 mm, Assignment Stem Extension, Hudson Fitting (B)
17	445-304/40	Tapered Reamer, L = 80 mm, Assignment Stem Extension, Hudson Fitting (B)
18	445-304/50	Tapered Reamer, L = 120 mm, Assignment Stem Extension, Hudson Fitting (B)
19	445-303/00	Tibial Reamer Guide
20	445-113/20	Alignment Rod, long
21	445-113/10	Alignment Rod, short
22	445-112/00	Handle, quick connect
23	64-1181/06	Hex Screwdriver, L = 175 mm, hex. 2 mm
24	322-145/01	Screwdriver, Ø 8.0 mm
25	445-309/00	Articular Surface Inserter/Extractor
26	445-114/10	Spacer, H = 10 mm, flexion

445-004/00 Case 4 – Fixed Bearing CR Instruments



1	445-040/00	Instrument Tray 4, empty, 228 x 253 x 100 mm (incl. lid)
2	445-401/10 445-401/12 445-401/14	Trial Plateau Fixed Bearing CR, size 1, H = 10 mm (yellow) Trial Plateau Fixed Bearing CR, size 1, H = 12 mm (yellow) Trial Plateau Fixed Bearing CR, size 1, H = 14 mm (yellow)
3	445-416/10 445-416/12 445-416/14	Trial Plateau Fixed Bearing CR, size 1B, H = 10 mm (grey) Trial Plateau Fixed Bearing CR, size 1B, H = 12 mm (grey) Trial Plateau Fixed Bearing CR, size 1B, H = 14 mm (grey)
4	445-400/00	Shim Trial Plateau, H = +4 mm
5	445-402/10 445-402/12 445-402/14	Trial Plateau Fixed Bearing CR, size 2, H = 10 mm (green) Trial Plateau Fixed Bearing CR, size 2, H = 12 mm (green) Trial Plateau Fixed Bearing CR, size 2, H = 14 mm (green)
6	445-425/10 445-425/12 445-425/14	Trial Plateau Fixed Bearing CR, size 2A/2B, H = 10 mm (red) Trial Plateau Fixed Bearing CR, size 2A/2B, H = 12 mm (red) Trial Plateau Fixed Bearing CR, size 2A/2B, H = 14 mm (red)
7	445-405/10 445-405/12 445-405/14	Trial Plateau Fixed Bearing CR, size 5, H = 10 mm (brown) Trial Plateau Fixed Bearing CR, size 5, H = 12 mm (brown) Trial Plateau Fixed Bearing CR, size 5, H = 14 mm (brown)
8	445-404/10 445-404/12 445-404/14	Trial Plateau Fixed Bearing CR, size 4, H = 10 mm (black) Trial Plateau Fixed Bearing CR, size 4, H = 12 mm (black) Trial Plateau Fixed Bearing CR, size 4, H = 14 mm (black)
9	445-403/10 445-403/12 445-403/14	Trial Plateau Fixed Bearing CR, size 3, H = 10 mm (blue) Trial Plateau Fixed Bearing CR, size 3, H = 12 mm (blue) Trial Plateau Fixed Bearing CR, size 3, H = 14 mm (blue)

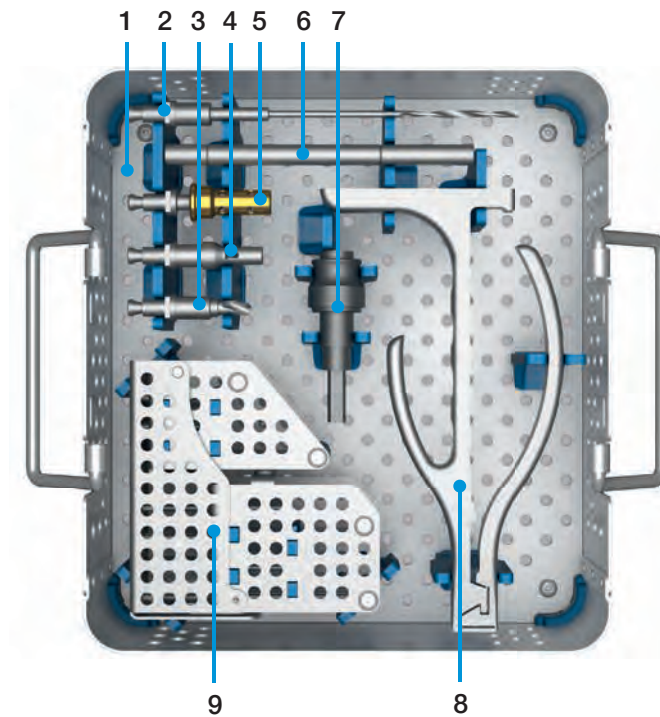
445-006/00 Case 5 – Fixed Bearing PS Instruments



1	445-060/00	Instrument Tray 5, empty, 485 x 253 x 100 mm (incl. lid)
2	445-650/01	Femoral PS Box Guide, size 1
3	445-650/16	Femoral PS Box Guide, size 1B
4	445-652/10	Femoral PS Box Gauge, small
5	445-650/02	Femoral PS Box Guide, size 2
6	445-652/20	Femoral PS Box Gauge, medium
7	445-652/30	Femoral PS Box Gauge, large
8	445-650/25	Femoral PS Box Guide, size 2A
9	319-601/30 317-668 (4x)	Sterilizing Box, L = 79.5 mm, Fixation Screw
10	445-650/26	Femoral PS Box Guide, size 2B
11	445-400/00	Shim Trial Plateau, H = +4 mm
12	445-650/03	Femoral PS Box Guide, size 3
13	445-604/10 445-604/12 445-604/14	Trial Plateau Fixed Bearing PS, size 4, H = 10 mm (black) Trial Plateau Fixed Bearing PS, size 4, H = 12 mm (black) Trial Plateau Fixed Bearing PS, size 4, H = 14 mm (black)
14	445-650/04	Femoral PS Box Guide, size 4
15	445-605/10 445-605/12 445-605/14	Trial Plateau Fixed Bearing PS, size 5, H = 10 mm (brown) Trial Plateau Fixed Bearing PS, size 5, H = 12 mm (brown) Trial Plateau Fixed Bearing PS, size 5, H = 14 mm (brown)
16	445-650/05	Femoral PS Box Guide, size 5

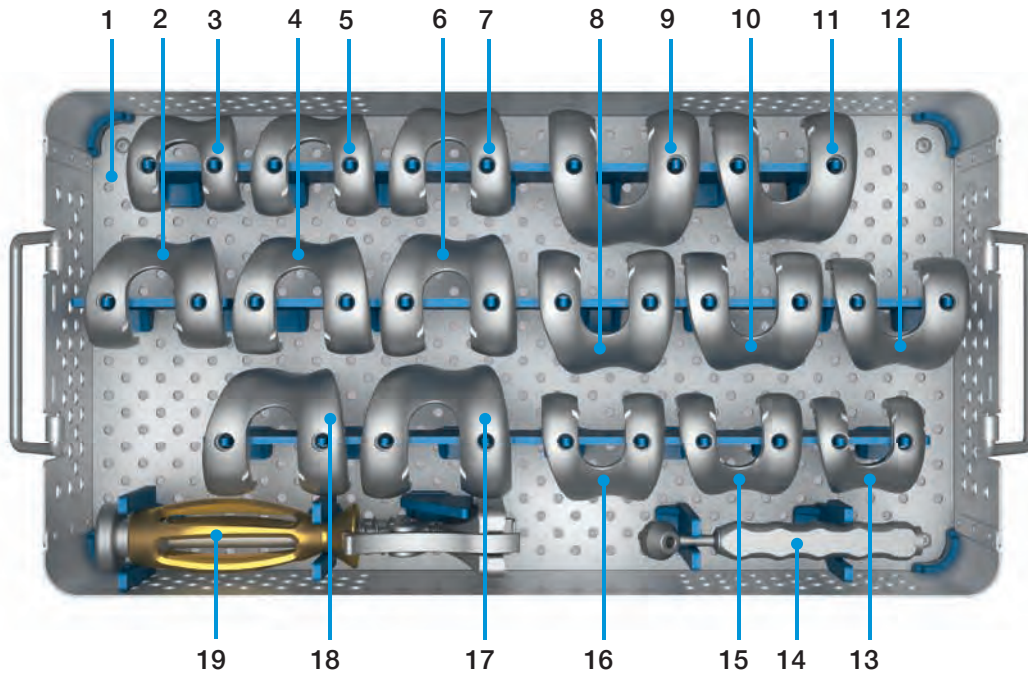
17	445-603/10	Trial Plateau Fixed Bearing PS , size 3, H = 10 mm (blue)
	445-603/12	Trial Plateau Fixed Bearing PS , size 3, H = 12 mm (blue)
	445-603/14	Trial Plateau Fixed Bearing PS , size 3, H = 14 mm (blue)
18	445-625/10	Trial Plateau Fixed Bearing PS , size 2A/2B, H = 10 mm (red)
	445-625/12	Trial Plateau Fixed Bearing PS , size 2A/2B, H = 12 mm (red)
	445-625/14	Trial Plateau Fixed Bearing PS , size 2A/2B, H = 14 mm (red)
19	445-602/10	Trial Plateau Fixed Bearing PS , size 2, H = 10 mm (green)
	445-602/12	Trial Plateau Fixed Bearing PS , size 2, H = 12 mm (green)
	445-602/14	Trial Plateau Fixed Bearing PS , size 2, H = 14 mm (green)
20	317-669/01	Femoral Trial Box , size 1
	317-669/16	Femoral Trial Box , size 1B
	317-669/02	Femoral Trial Box , size 2
	317-669/25	Femoral Trial Box , size 2A
	317-669/26	Femoral Trial Box , size 2B
	317-669/03	Femoral Trial Box , size 3
	317-669/04	Femoral Trial Box , size 4
317-669/05	Femoral Trial Box , size 5	
21	445-616/10	Trial Plateau Fixed Bearing PS , size 1B, H = 10 mm (grey)
	445-616/12	Trial Plateau Fixed Bearing PS , size 1B, H = 12 mm (grey)
	445-616/14	Trial Plateau Fixed Bearing PS , size 1B, H = 14 mm (grey)
22	445-601/10	Trial Plateau Fixed Bearing PS , size 1, H = 10 mm (yellow)
	445-601/12	Trial Plateau Fixed Bearing PS , size 1, H = 12 mm (yellow)
	445-601/14	Trial Plateau Fixed Bearing PS , size 1, H = 14 mm (yellow)
23	10-5373	Hex Screwdriver , L = 180 mm, hex 2.5 mm
24	445-651/10	Femoral Chisel , small
	445-651/20	Femoral Chisel , medium
	445-651/30	Femoral Chisel , large

445-007/00 Case 6 – Pins & General Instruments



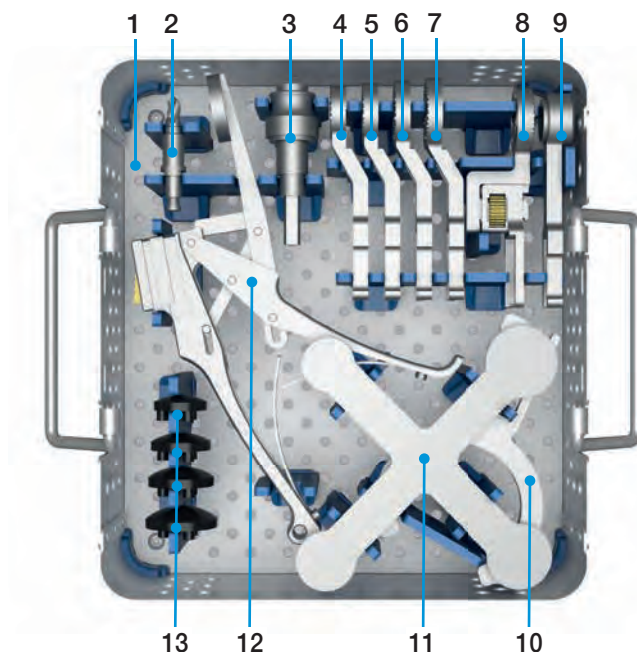
1	445-070/00	Instrument Tray 6, empty, 228 x 253 x 100 mm (incl. lid)
2	15-2040/02B	Twist Drill, Ø 3.0 mm, 160 mm (Hudson Fitting B)
3	445-905/00	Patella Drill, Ø 6.3 mm (Hudson Fitting B)
4	445-122/00	Power Driver (Hudson Fitting B)
5	445-122/10	Power Driver, snap lock (Hudson Fitting B)
6	445-121/00	Pin Inserter, universal
7	16-3283/01	Adapter, Hudson/Jacobs-Fitting (E)
8	445-120/00	Pin Inserter/Extractor, universal
9	445-123/00 1x	Pin Box
	445-124/65 4x	Drill Pin, L = 65 mm, Ø 3.0 mm
	445-124/95 4x	Drill Pin, L = 95 mm, Ø 3.0 mm
	445-125/35 4x	Headed Drill Pin, L = 35 mm, Ø 3.0 mm
	445-125/65 4x	Headed Drill Pin, L = 65 mm, Ø 3.0 mm
	445-128/25 4x	Bone Nail, L = 25 mm, Ø 3.0 mm
	445-128/35 4x	Bone Nail, L = 35 mm, Ø 3.0 mm
	445-128/65 4x	Bone Nail, L = 65 mm, Ø 3.0 mm

445-008/00 Case 7 – Femoral Trial Prostheses Instruments



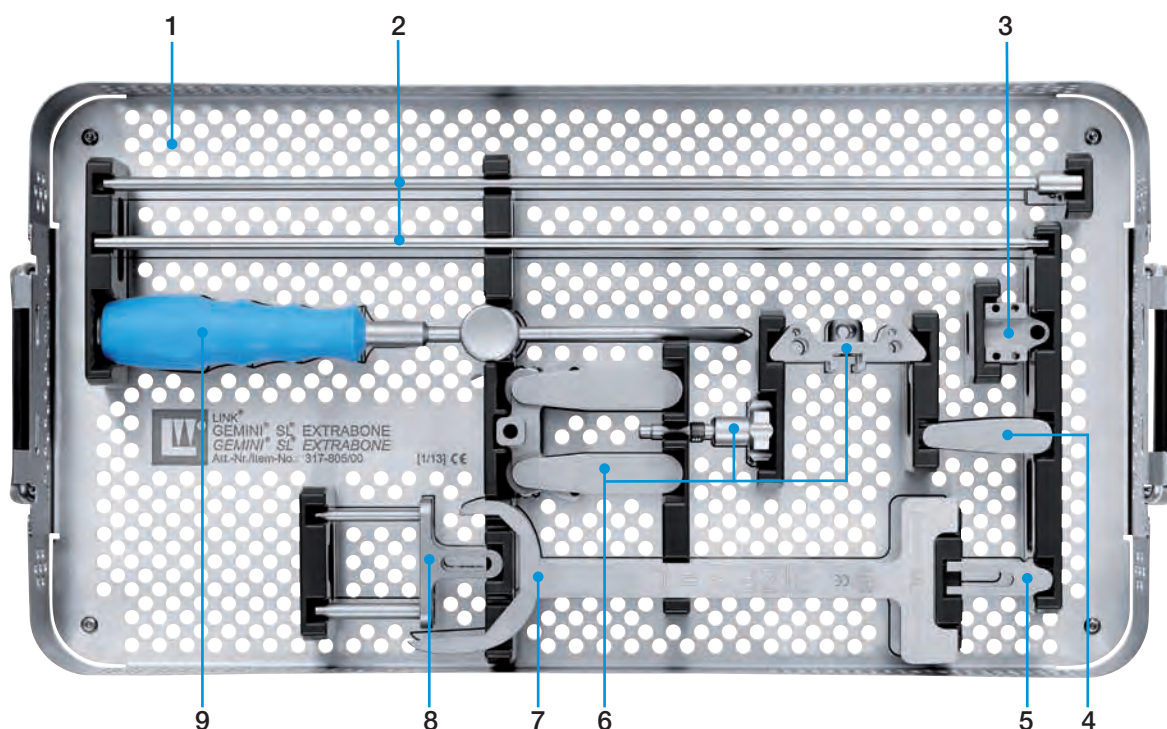
1	445-080/00	Instrument Tray 7, empty, 485 x 253 x 100 mm (incl. lid)
2	317-668/25	Femoral Trial, left, size 2A
3	317-668/01	Femoral Trial, left, size 1
4	317-668/26	Femoral Trial, left, size 2B
5	317-668/16	Femoral Trial, left, size 1B
6	317-668/03	Femoral Trial, left, size 3
7	317-668/02	Femoral Trial, left, size 2
8	317-667/03	Femoral Trial, right, size 3
9	317-667/05	Femoral Trial, right, size 5
10	317-667/26	Femoral Trial, right, size 2B
11	317-667/04	Femoral Trial, right, size 4
12	317-667/25	Femoral Trial, right, size 2A
13	317-667/01	Femoral Trial, right, size 1
14	445-205/00	Drill Template, Ø 5.5 mm
15	317-667/16	Femoral Trial, right, size 1B
16	317-667/02	Femoral Trial, right, size 2
17	317-668/05	Femoral Trial, left, size 5
18	317-668/04	Femoral Trial, left, size 4
19	445-210/00	Femoral Inserter/Extractor

445-009/00 Case 8 – Patella Instruments



1	445-090/00	Instrument Tray 8 , empty, 228 x 253 x 100 mm (incl. lid)	
2	445-905/00	Patella Drill , Ø 6.3 mm, Hudson Fitting (A), for patella resurfacing 3-peg	
3	16-3283/01	Adapter , Ø 6.3 mm, tool shaft Hudson, with Jacobs Fitting (E), for Patella Component 3-peg	
4	445-901/25	Patella Clamp , drill guide, Ø 25 mm, for implant 318-401/25	
5	445-901/28	Patella Clamp , drill guide, Ø 28 mm, for implant 318-401/28	
6	445-901/31	Patella Clamp , drill guide, Ø 31 mm, for implant 318-401/31	
7	445-901/34	Patella Clamp , drill guide, Ø 34 mm, for implant 318-401/34	
8	445-907/00	Patella Clamp , depth gauge, for patella resurfacing 3-peg	
9	445-904/00	Patella Clamp , clamp arm	
10	445-903/00	Patella Clamp , resection guide	
11	340-010	Patella Sizing Template , for patella resurfacing 3-peg	
12	445-902/00	Patella Clamp , handle	
		Patella Trial Prostheses	
13	340-325	Size 1	Ø 25 mm, for implant 318-401/25
14	340-328	Size 2	Ø 28 mm, for implant 318-401/28
15	340-331	Size 3	Ø 31 mm, for implant 318-401/31
16	340-334	Size 4	Ø 34 mm, for implant 318-401/34

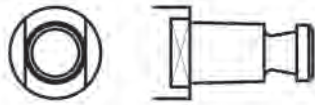
317-800/00 EXTRABONE Instruments



1	317-805/00	Instrument Tray, empty, 485 x 253 x 120 mm (incl. lid)
2	317-840/00	Alignment Rod
3	317-815/00	Positioner Guide
4	317-825/00	Guide
5	317-820/00	Connector (3 parts)
6	317-810/00	Alignment Instrument
7	317-845/00	Femoral Sizer
8	317-835/00	Axis Alignment Guide
9	317-830/00	Positioner




Additional Instruments

Hudson-Fitting (B)
Standard tool connection.



Adapter for power tool chuck

Different adapters are available to ensure compatibility to allow various connections:

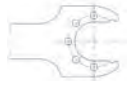
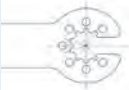


REF	Attachment	
16-3283/01	Jacobs-Fitting (E)	
16-3284/00	AO-Fitting (D)	
16-3285/00	Harris-Fitting (C)	

Additional Instruments



Sawblades,

without offset teeth, 1.24 mm thick

Width (A) 25 mm REF	Width (A) 13 mm REF	Fitting
317-654/10	317-656/10	Synthes 
317-654/11	317-656/11	Aesculap Combi 
317-654/13	317-656/13	Zimmer / Hall Combi 
317-654/14	317-656/14	Stryker System 4 

Thread Pins*,

(optional threaded pins are also available upon request)

REF	Description
445-126/65	L = 65 mm, Ø 3.0 mm
445-126/95	L = 95 mm, Ø 3.0 mm
445-127/35	Headed, L = 35 mm, Ø 3.0 mm
445-127/65	Headed, L = 65 mm, Ø 3.0 mm



* only upon request

68-3000

PCL Protector

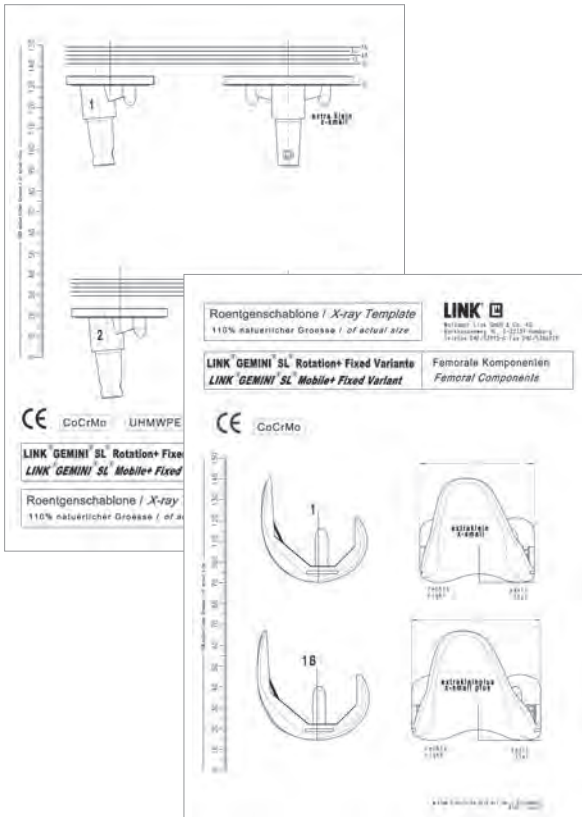
Instrument for protection of the posterior cruciate ligament when resecting the tibia.



317-684/01

X-ray Templates for GEMINI SL,

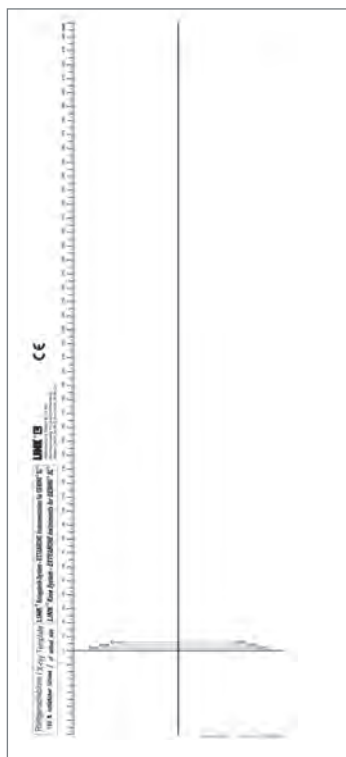
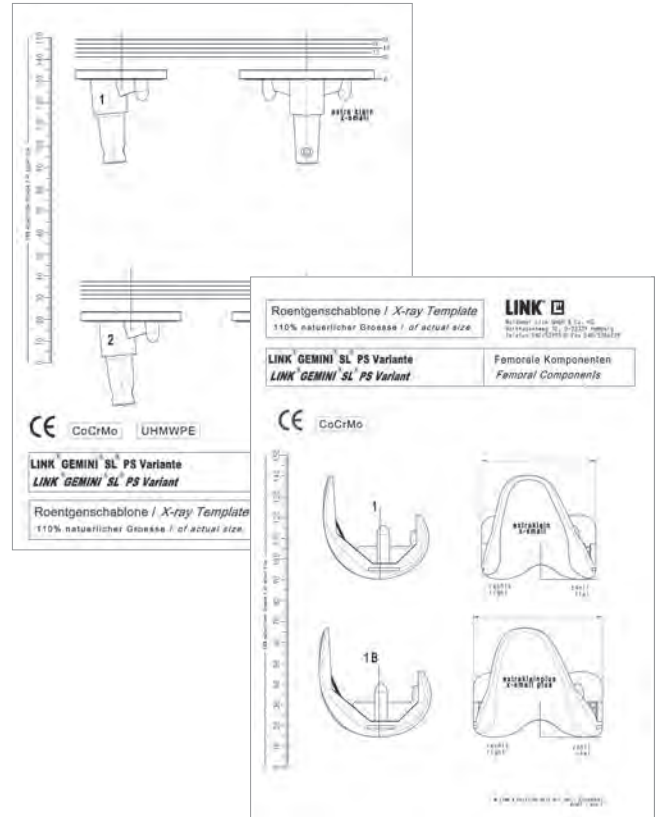
Set contains femoral and tibial implants (Fixed Bearing), 110% actual size, 1 set of 7 sheets



317-683/01

X-ray Templates for GEMINI SL – PS version,

Set contains femoral and tibial implants PS (Posterior Stabilized), 110% actual size, 1 set of 7 sheets



317-658/00

X-ray Templates for GEMINI SL EXTRABONE,

110% actual size, 1 sheet

Specified indications and contraindications: GEMINI SL Total Knee Replacement

Indications:

The LINK GEMINI SL Total Knee System is indicated for patients suffering from disability due to:

- Degenerative, post-traumatic or rheumatoid arthritis;
- Avascular necrosis of the femoral condyle;
- Post-traumatic loss of joint configuration, particularly when there is patellofemoral erosion, dysfunction or prior patellectomy;
- Moderate valgus, varus or flexion deformities.

This device may also be indicated in the salvage of previously failed surgical attempts.

The device is intended for cemented use. Only cementless labeled modular stems are indicated for uncemented use.

Contraindications:

The LINK GEMINI SL Total Knee System is contraindicated where there is:

- Infection (or a history of infection), acute or chronic, local or systemic;
- Insufficient bone quality which may affect the stability of the implant;
- Muscular, neurological or vascular deficiencies, which compromise the affected extremity;
- Obesity;
- Alcoholism or other addictions;
- Materials sensitivity;
- Loss of ligamentous structures;
- High levels of physical activity (e.g. competitive sports, heavy physical labor);
- Pregnancy.

Please note:

These indications/contraindications refer to standard cases. The ultimate decision on whether or not an implant is suitable for a patient must be made by the surgeon based on his/her individual analysis and his/her experience.



For more information please register for our LINK Media Library (linkorthopaedics.com)

Please note the following regarding the use of our implants:

1. Choosing the right implant is very important.

The size and shape of the human bone determines the size and shape of the implant and also limits the load capacity. Implants are not designed to withstand unlimited physical stress. Demands should not exceed normal functional loads.

2. Correct handling of the implant is very important.

Under no circumstances should the shape of a finished implant be altered, as this shortens its life span. Our implants must not be combined with implants from other manufacturers. The instruments indicated in the Surgical Technique must be used to ensure safe implantation of the components.

3. Implants must not be reused.

Implants are supplied sterile and are intended for single use only. Used implants must not be used again.

4. After-treatment is also very important.

The patient must be informed of the limitations of the implant. The load capacity of an implant cannot compare with that of healthy bone!

5. Unless otherwise indicated, implants are supplied in sterile packaging.

Note the following conditions for storage of packaged implants:

- Avoid extreme or sudden changes in temperature.
- Sterile implants in their original, intact protective packaging may be stored in permanent buildings up until the "Use by" date indicated on the packaging.
- They must not be exposed to frost, dampness or direct sunlight, or mechanical damage.
- Implants may be stored in their original packaging for up to 5 years after the date of manufacture. The "Use by" date is indicated on the product label.
- Do not use an implant if the packaging is damaged.

6. Traceability is important.

Please use the documentation stickers provided to ensure traceability.

7. Further information on the material composition is available on request from the manufacturer.

Follow the instructions for use!

Waldemar Link GmbH & Co. KG, Hamburg

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