



acs®  
knee system  
advanced coated system



**ACS® SC**  
**Mobile Bearing**  
**surgical technique**

implantcast 



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Note: The described surgical technique is the suggested treatment for the uncomplicated procedure. In the final analysis the preferred treatment is that which addresses the needs of the individual patient.

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## ACS®- advanced coated system

### History

The clinical experience for decades of years makes the ACS®-system to a worldwide proven knee joint replacement. Beginning with the introduction of the ceramic coated primary mobile-bearing system continuous design optimizations were carried out in collaboration with several clinical partners. The developments of the fixed bearing and the unicondylar knee joint replacement, manufactured from an established orthopaedic implant material, followed. Finally the system is complemented by multiple options for revision cases.



### Flexibility

The ACS®-system offers an optimal solution individually for every patient, whether mobile- or fixed-bearing version, for primary interventions to the point of complex revision cases. The components are each available as cemented or cementless as well as coated or uncoated version. The same geometry of the articulating surface of the femoral component from uni to revision, as well as an identical inner contour of the femoral component from primary to revision allow for a high degree of intraoperative flexibility and for maximum preservation of bone stock. The instrumentation guarantees a simple, intuitive surgical technique.



### Modularity

The ACS®-system -a flexible, versatile system- has various femoral and tibial sizes available for an excellent fit of the components and an optimal bone coverage. Due to its modularity the system offers manifold options. The primary mobile-bearing and fixed-bearing tibia allow for the use of stem extensions. For revision cases a specific mobile-bearing SC tibial component is available, whereas the identical fixed-bearing tibia can be used in primary as well as revision cases. For the compensation of bone defects, femoral as well as tibial spacer of different thicknesses are available. Femorally and tibially it is possible to use stems of several lengths and different diameters as well as offsets via appropriate adapters.



# ACS® MB SC compatibility

Patella component

PE-Patella

size:



26 mm    29 mm    32 mm    35 mm

compatible with all femoral sizes

**Femoral Spacer**  
Height 5mm and 10mm



**Offset adapter**  
0, 2, 4 and 6mm



**Stems**  
Ø12-22mm  
Length 100-200mm



Femoral component



size 2

size 2,5 /  
size 3

size 4

size 5

size 6



size 2

size 3

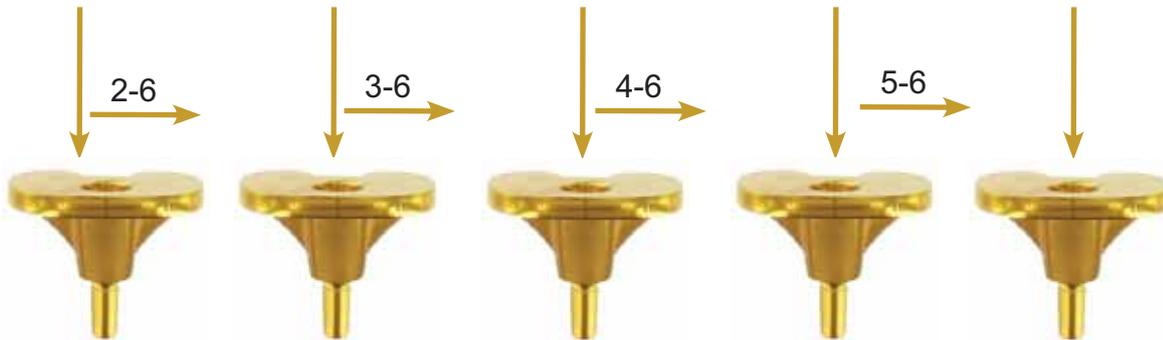
size 4

size 5

size 6

\* all PE-inserts are available in heights 10,0mm, 12,5mm, 15,0mm, 17,5mm and 20,0mm

Tibial-PE-insert\*  
symmetrical



Size 2

Size 3

Size 4

Size 5

Size 6

Tibial component  
symmetrical

**Tibial Spacer**  
Height 5mm and 10mm



**Offset adapter**  
2mm and 4mm



**Stems**  
Ø12-22mm  
Length 100-200mm



→ compatible with



## Pre-operative planning

For a pre-operative planning x-ray templates of the single components are available. The templates allow for an exact planning in terms of dimensioning of the prostheses as well as the positioning of the implant components in the bone. X-ray templates of the single components are shown below with a tibial size 3 as an example.

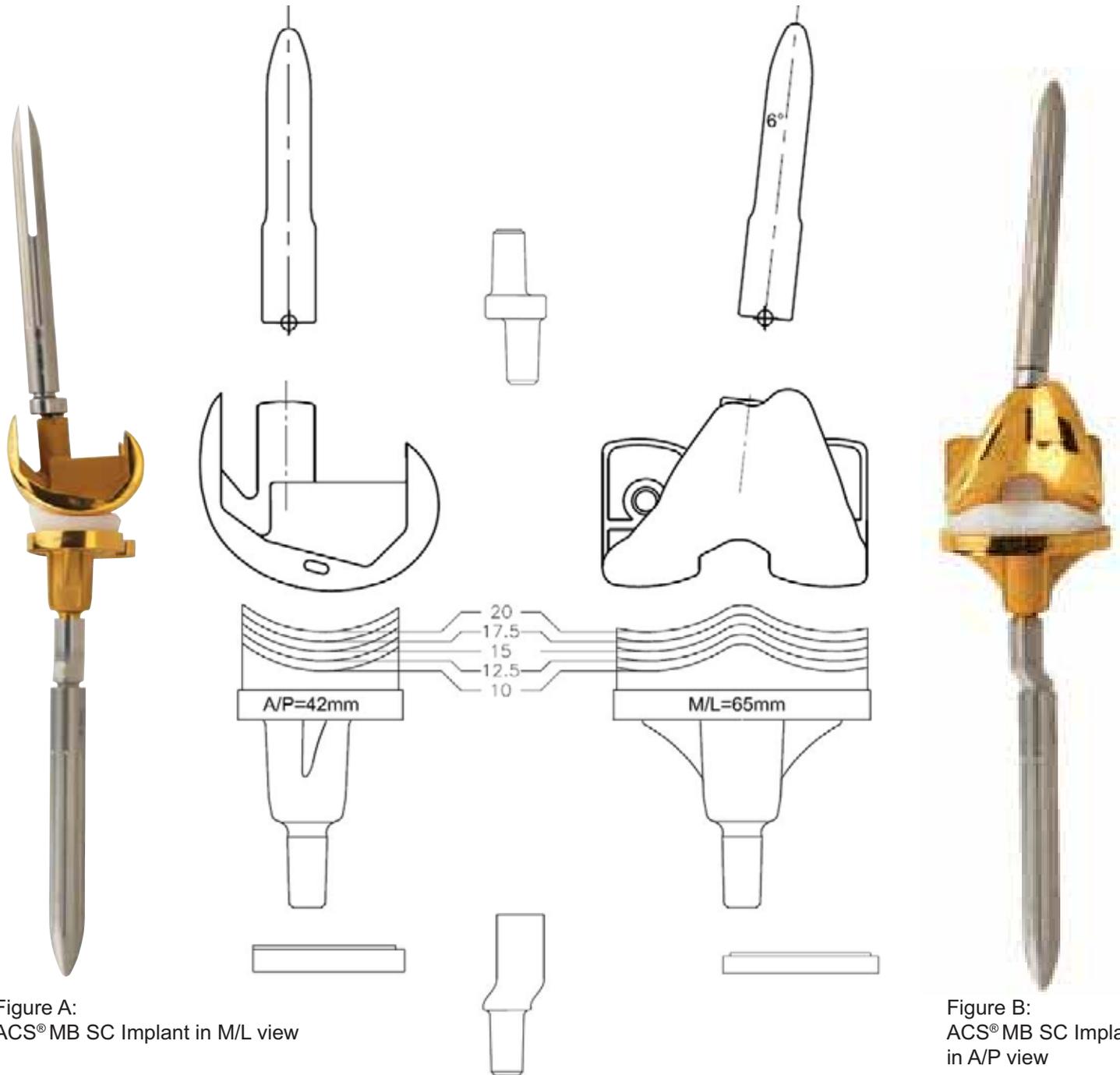


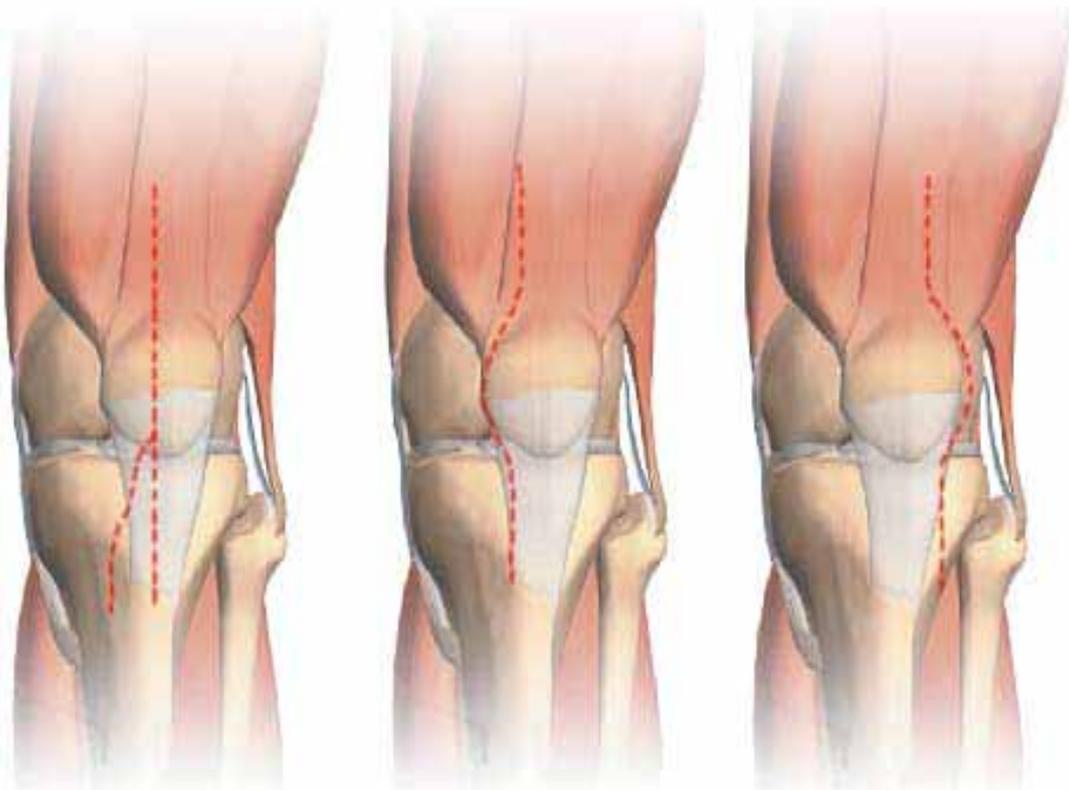
Figure A:  
ACS® MB SC Implant in M/L view

Figure B:  
ACS® MB SC Implant  
in A/P view

Further prior to surgery the following should be ensured:

- all needed components are available during surgery. An adequate number of various implant components should be available for surgery. It should be determined whether the implantation should be done with or without the use of bone cement.
- All instruments for the implantation are present and are matching the corresponding implants. The insertion instruments must be adapted to the implant. The implants may only be used with the instruments of the implantcast GmbH. An exception are exclusively the standardized instruments used during surgery.

## Surgical approach

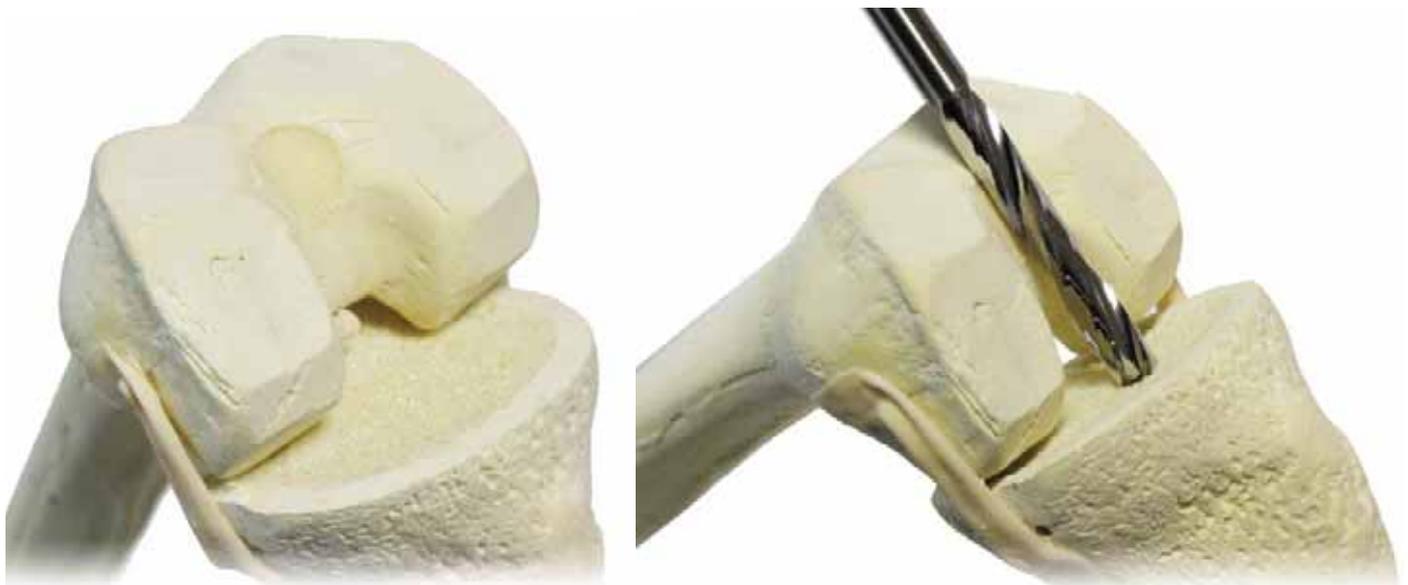


Make a central skin incision across the patella. Then choose the preferred medial or lateral approach to open the knee joint. For the skin incision take note of scarring of previous surgeries. Invert the patella and remove the medial respectively the lateral periosteal structures.

For an improved exposure a preliminary resection of the patella back side could be helpful.

Remove all femoral and tibial implant components of the prosthesis, which needs to be revised.

## Tibial preparation



Flex the knee joint to 90°. If necessary, open the tibial medullary canal with the 9mm initiator drill. The entry point should be set 1/3 ventrally and 2/3 dorsally relative to the eminentia intercondylaris to open the centre of the medullary canal.

Ream with the rigid drills till the preoperatively determined stem diameter and stem length is reached.

For planned stem lengths larger than 100mm place the drill sleeve of the corresponding drill diameter and the planned stem length over the rigid drill. Make sure that the sleeve is countersink in the medullary canal while reaming. Thus the rigid drill is centered over its whole length in the medullary canal.

The drill diameter, as well as the sleeve diameter if applicable, is increased stepwise till the pre-operatively determined stem diameter and stem length is reached.

For optimal anchorage of the stem in the medullary canal, you should drill till cortical contact occurs at the drill tip.

To ensure an adequate reaming depth, the marking on the drill should correspond with the upper tibial edge. The stem lengths of 100mm, 150mm and 200mm describe the length from the resection level and not the effective stem length.

**Advise for reaming depth:**

Please take notice of the next table in case of using cementless stems:

Stem	without Offsetadapter	with Offsetadapter
100mm	leave ca. 1.5cm of the reamer outside	till the 115mm marking
150 mm	135mm	165 mm
200 mm	185mm	215 mm

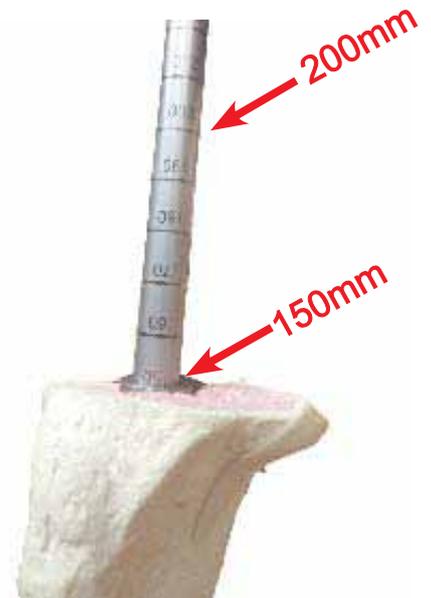
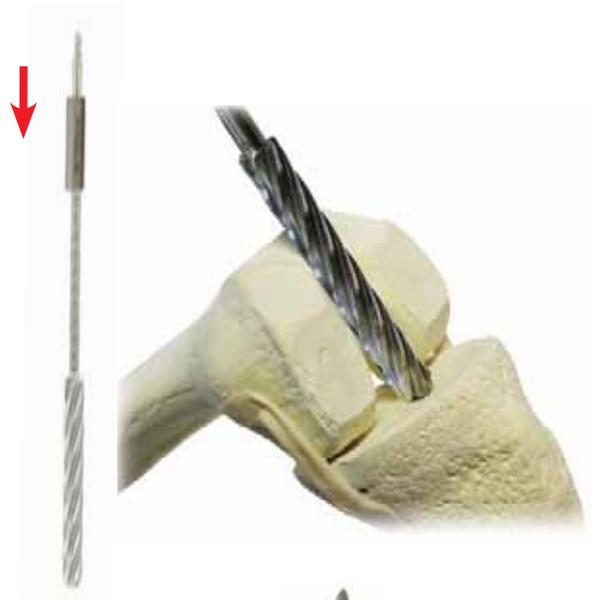
**In case of using a cemented stem the reaming depth has to be increased by 25mm to ensure enough place for a cement stopper**

Leave the lastly used rigid drill (the largest used drill diameter) in the medullary canal as well as the sleeve, if applicable.

This drill indicates the implant diameter to choose for a cementless respectively a cemented stem implantation.

Make sure that the largest used drill diameter is an even number (table 1), if an ACS® stem should be used. Thus there is space for 1mm cement in case of a cemented implantation; in case of a cementless implantation the stem will touch exactly the prepared bone.

If an ACS® stem cementless HA is used, make sure that the largest used drill is of an uneven diameter. Thus a 1mm-pressfit is achieved during implantation (table 2).



## Tibial alignment

drill Ø	ACS® stem	
	cemented	cementless
12mm	-	12mm
14mm	12mm	14mm
16mm	14mm	16mm
18mm	16mm	18mm
20mm	18mm	20mm
22mm	20mm	22mm

Table 1: Use of the ACS® stem



drill Ø	ACS® stem cementless HA
11mm	12mm
13mm	14mm
15mm	16mm
17mm	18mm
19mm	20mm
21mm	22mm

Table 2: Use of the ACS® stem cementless HA



Note: Implants and instruments are sent out for stems up to Ø18mm by default to reduce shipment volume. If larger stem diameters are needed, please specify when placing the order.

## Alignment of the tibial cutting block

The tibial alignment is carried out intramedullary. Fix the tibia cutting block revision 0° to the I/M tibial alignment guide. Slide the tibial alignment guide over the drill in the medullary canal and adjust the desired rotation of the instruments. Fix the position by impacting the proximal pins of the tibial alignment guide into the tibial bone.

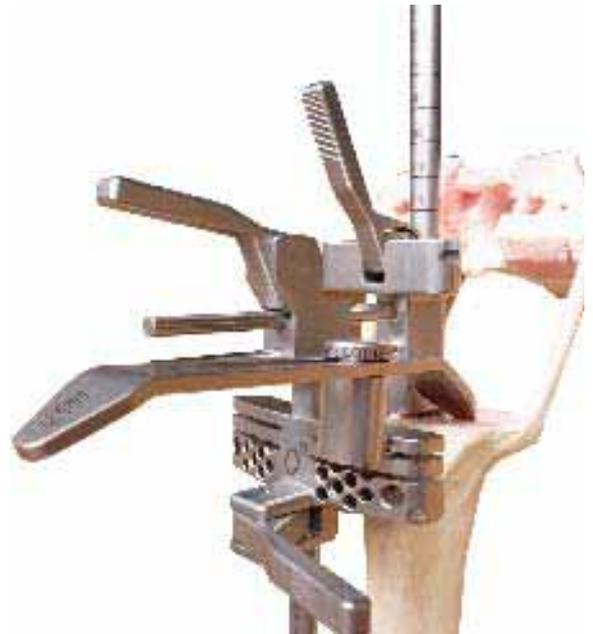
Fix the tibial cutting block with two pins. It is recommended to use the two countersunk holes. Thus shifting of the block in both directions is possible in case of a tibial resection, respectively a decrease of the planned resection.



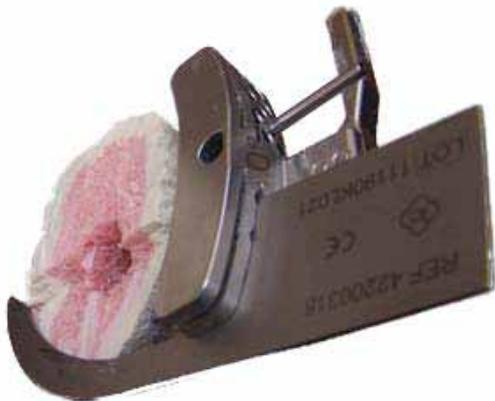
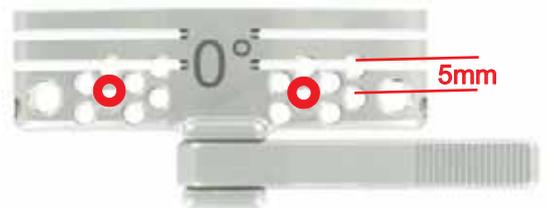
## Tibial resection

The tibial resection height is adjusted by means of the tibial stylus. Use the stylus tip with the 2mm marking **1** for gauging the tibial plateau to resect 2mm below the pre-operated tibial surface. Attach the tibial stylus to the tibial cutting block; use the proximal slot of the cutting block.

The stylus and the connected cutting block need to be lowered till the tip of the stylus touches the deepest point of the tibial surface. The cutting block is fixed in this position to the alignment guide. Use the stylus tip with the 12,5mm marking **2** for gauging the highest tibial point of the less affected joint side in case of a primary implantation. Thus an adequate tibial resection height is ensured for primary implantation of the tibial component.



The resection plane is checked with the long resection check; perform the tibial cut. If required, insert a third oblique pin to secure the position of the tibial cutting block **1**.



The tibial cutting block allows for preparation for spacer to compensate tibial defects.

For 5mm tibial spacer 5mm are resected accordingly; use the more distal one of both slots of the affected side for this.

If the tibia needs to be prepared for 10mm spacer, use the pin holes of the lower row for fixation of the cutting block. Thus the cutting block can be shifted downwards via the pins and the distal one of the two slots is used for preparation.

After resection the pins and the tibial cutting are removed.

## Femoral preparation

Open the femoral intramedullary canal by use of the 9mm initiator drill.

Ream with the rigid drills till the preoperatively determined stem diameter and stem length is reached.

For planned stem lengths larger than 100mm place the drill sleeve of the corresponding drill diameter and the planned stem length over the rigid drill. Make sure that the sleeve is countersink in the medullary canal while reaming. Thus the rigid drill is centered over its whole length in the medullary canal.

The drill diameter, as well as the sleeve diameter if applicable, is increased stepwise till the pre-operatively determined stem diameter and stem length is reached.

For optimal anchorage of the stem in the medullary canal, you should drill till cortical contact occurs at the drill tip.

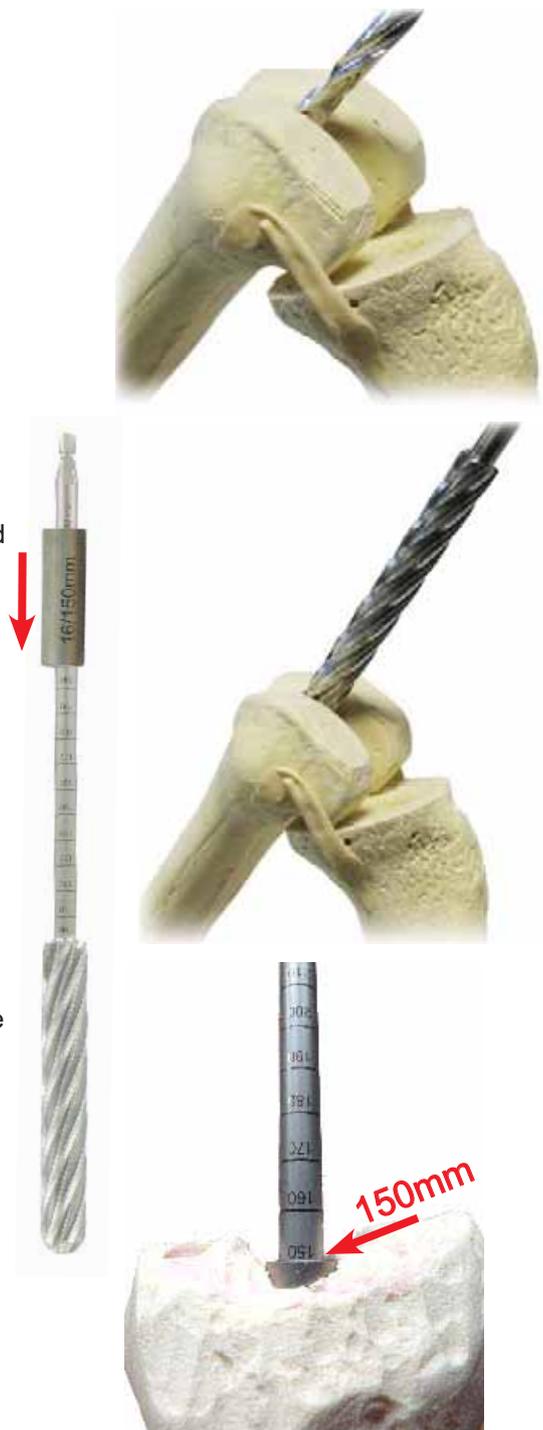
To ensure an adequate reaming depth, the marking on the drill should correspond with the distal femoral bone level. The stem lengths of 100mm, 150mm and 200mm describe the length from the resection level and not the effective stem length.

Leave the lastly used rigid drill (the largest used drill diameter) in the medullary canal as well as the sleeve, if applicable.

This drill indicates the implant diameter to choose for a cementless respectively a cemented stem implantation.

Make sure that the largest used drill diameter is an even number (table 1), if an ACS® stem should be used. Thus there is space for 1mm cement in case of a cemented implantation; in case of a cementless implantation the stem will touch exactly the prepared bone.

If an ACS® stem cementless HA is used, make sure that the largest used drill is of an uneven diameter. Thus a 1mm-pressfit is achieved during implantation (table 2).



drill Ø	ACS® stem	
	cemented	cementless
12mm	-	12mm
14mm	12mm	14mm
16mm	14mm	16mm
18mm	16mm	18mm
20mm	18mm	20mm
22mm	20mm	22mm



drill Ø	ACS® stem cementless HA
11mm	12mm
13mm	14mm
15mm	16mm
17mm	18mm
19mm	20mm
21mm	22mm



Note: Implants and instruments are sent out for stems up to Ø18mm by default to reduce shipment volume. If larger stem diameters are needed, please specify when placing the order.

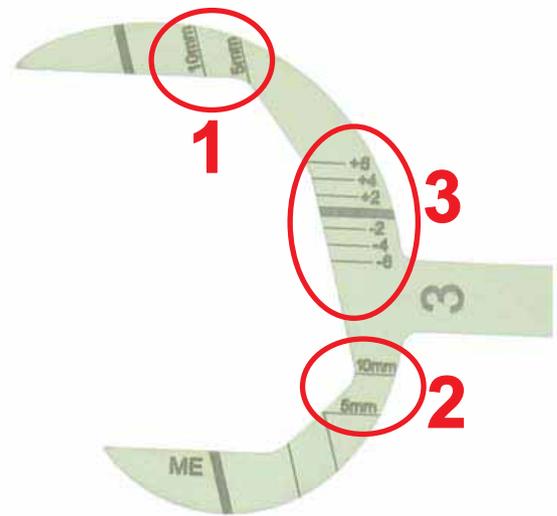
## Determination of femoral size

For size determination of the femoral component the femoral sizing template of the supposed size is applied to the femoral bone. The inner contours of the template correspond to the femoral implant component of the respective size. The anterior inner edge of the template should be aligned parallel to the anterior femoral cortex.



The femoral sizing template further allows for the evaluation if femoral spacer (distal **1** or posterior **2**) will be needed. Furthermore a potentially needed offset can be read off **3**; slide the offset indicator over the rigid drill for that. The indicator blade should point to medial and it should be aligned in parallel with the epicondylar line. The indicator blade points to the scale to read off the preliminary offset.

Remove the indicator and the sizing template afterwards.



## Femoral alignment

To set the valgus angle, push the adjusting lever of the femoral alignment guide to release the locking mechanism. For locking release the adjusting lever at the desired position. It is recommended to adjust a valgus angle of  $6^\circ$  of the side to operate on since the cone of the femoral component has a valgus of  $6^\circ$  implemented. Thus the femoral stem will be positioned in the intramedullary axis.



Attach the femoral alignment guide to the rigid drill/rod. By use of the revision rotation guide neutral the rotation can be adjusted by referencing the posterior condyles.



Optionally, the joint space gauge can be used for tibial rotational alignment. Afterwards attach the distal femoral cutting block to the alignment guide. The coupling is correct, when the implantcast logo (ic-cloverleaf) of the alignment guide is visible through the central hole on the anterior side of the distal femoral cutting block.



Lower the cutting block till it contacts the anterior femoral bone.

With the 4in1 femoral resection guide 1,5mm can be gauged to perform a distal refreshment resection. The resection guide is attached to the distal slot, whereas the „bone“ marked surface rests on the femoral bone and the „distal“ marked surface is visible.



In the proximal slot the epicondylar line can be checked with help of the resection check.

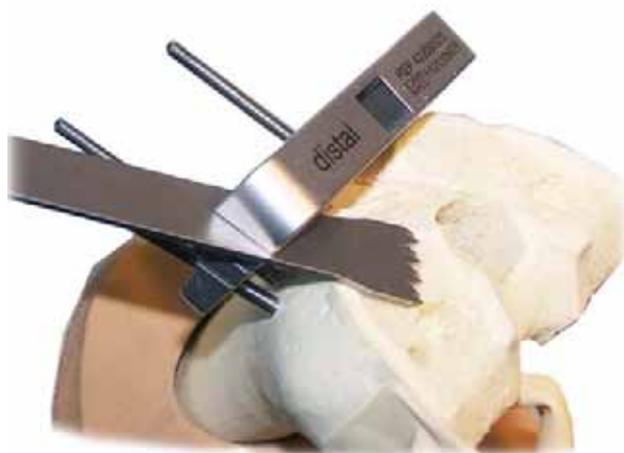


## Distal femoral resection

Fix the distal cutting block with two pins to the anterior femur. Afterwards remove the rigid drill and the femoral alignment guide. For increased stability a third oblique pin **1** should be inserted.



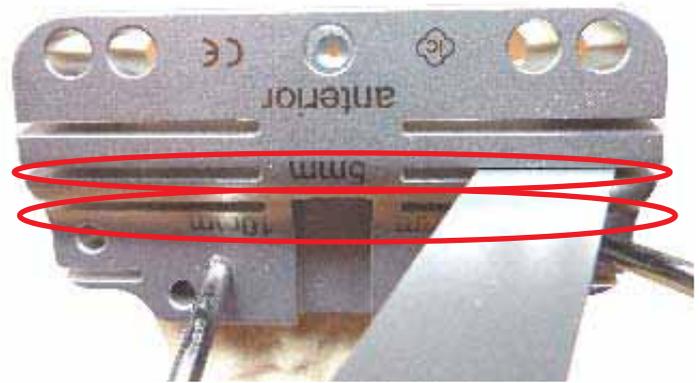
Resect the distal femur through the distal slot of the cutting block.



By use of the middle slot further 5mm can be resected to prepare the femur for distal spacer.  
 For 10mm spacer the proximal one of the three slots is used.

In the shown case the femur is prepared medially for a 5mm distal spacer.

Afterwards the pins as well as the cutting block are removed.

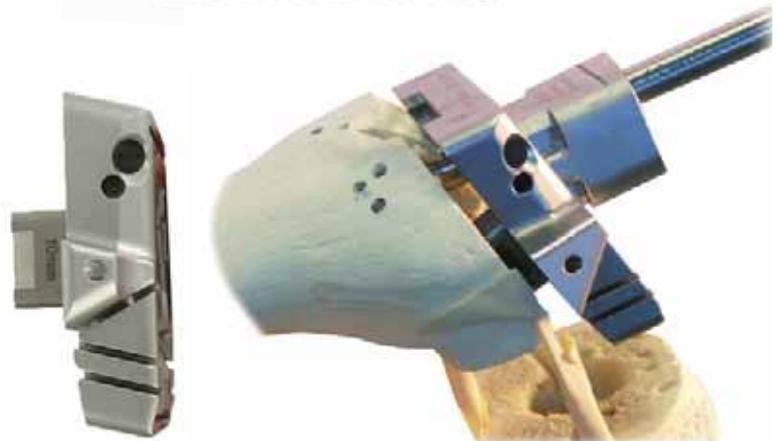


## Determination of the femoral offset

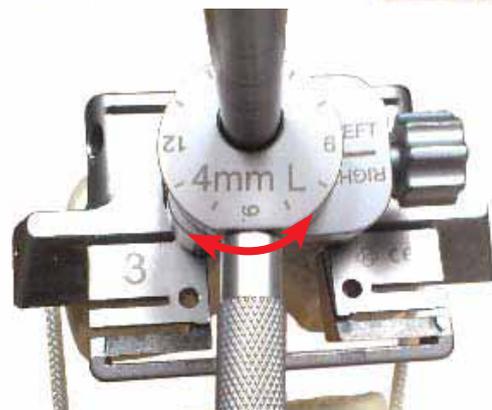
Reinsert the lastly used rigid drill (together with the according drill sleeve if applicable).  
 Connect the 4in1 femoral cutting block of the afore determined size to the long stem sleeve offset. In doing so the etching for the affected side „left“ respectively „right“ of the long stem sleeve offset should be legible anteriorly in case of topview on the cutting block. Attach the cutting block and the sleeve to the rigid drill till the cutting block rests flush on the distal femur.  
 For an eased positioning modular handles can be fixed to the 4in1 cutting block.



If the femur is prepared for femoral spacer the magnetic distal distance adapter of the respective thickness (5mm or 10mm) can be attached for stabilisation.



Insert the offset sleeve 0, 2, 4 or 6mm of the affected side into to the long stem sleeve offset. A „fast fix“ handle can be applied to the offset sleeve for manipulation. The position of the cutting block is adjusted by rotating the offset sleeve.  
 Note: The use of an offset might influence the flexion gap.



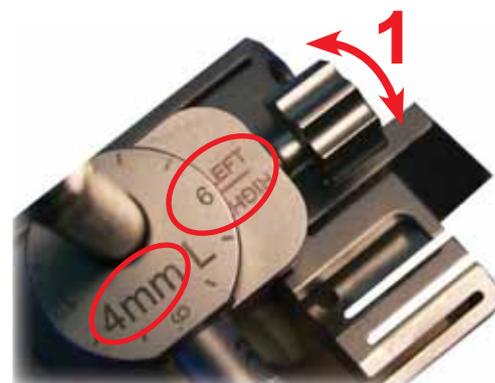
Check the anterior and posterior resection plane with the resection check.



With the femoral positioner the rotational alignment is adjusted in relation to the resected tibia. Attach the femoral positioner in the distal slot of the cutting block; the femoral positioner should be positioned flush on the resected tibia. Additional spacer shims are available, if no sufficient collateral ligament tension is achieved or if there are tibial defects. These adapters are fixed to the femoral positioner.



Is the optimal position of the 4in1 cutting block defined, fix the set-up with the lateral screw **1** of the long stem sleeve offset. Keep in mind the offset position and the offset sleeve (in the shown case 4mm offset sleeve and position 6) for assembling the trial as well as the implant components.



Fix the 4in1 cutting block with two pins to the femur; use the highlighted holes **1** for that. The frontal holes **2** are used if a change in femoral size is planned. Then the cutting block is removed via the two pins and afterwards the cutting block of another size is applied.

Note: In case of changing the femoral size the position of the anterior cut remains unchanged.



There are different holes available to secure the 4in1 block with pins on the femur . Whichever medullary drill and which offset is used , the 4in1 cutting block may need to be removed via pins temporarily to remove the drill and the offset sleeve. The table below indicates with which combination of offset sleeve and drill the 4in1 cutting block can be left on the bone (✓) or when it must be removed (✗) fixing the block with pins.

Offset 0 mm	Offset 2 mm	Offset 4 mm	Offset 6 mm	rigid drill Ø [mm]
✓	✓	✓	✓	10
✓	✓	✓	✓	11
✓	✓	✓	✓	12
✓	✓	✓	✗	13
✓	✓	✓	✗	14
✓	✓	✓	✗	15
✓	✓	✓	✗	16
✓	✓	✗	✗	17
✓	✓	✗	✗	18
✓	✓	✗	✗	19
✓	✓	✗	✗	20
✓	✗	✗	✗	21
✓	✗	✗	✗	22
✓	✗	✗	✗	23
✓	✗	✗	✗	24
✗	✗	✗	✗	25
✗	✗	✗	✗	26
✗	✗	✗	✗	27

If the 4 in 1 cutting block can rest on the bone (indicated by the table above), use the lateral oblique holes **1** to fix the cutting block .

If the block has to be removed , use the front-side holes **2** for fixation.

## Femoral preparation 4in1

Resect the anterior and posterior femur through the corresponding slots of the cutting block.

If posterior spacer are needed, the cutting block allows for resection of 5mm respectively 10mm.

For 5mm spacer use the middle one of the three posterior slots and for 10mm spacer use the anterior of the three slots.

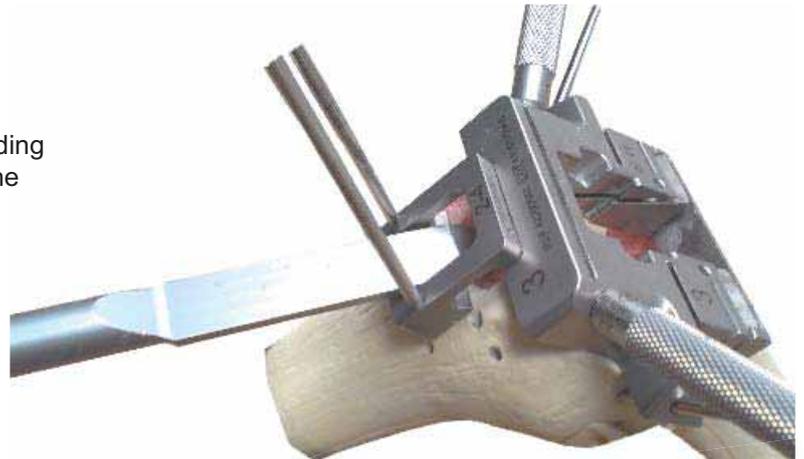
The shown case prepares for a 5mm medial spacer.

Afterwards remove the rigid drill and the long stem sleeve offset.



Attach the 4in1 notch preparation of the corresponding size to the cutting block and fix it with two pins to the femur.

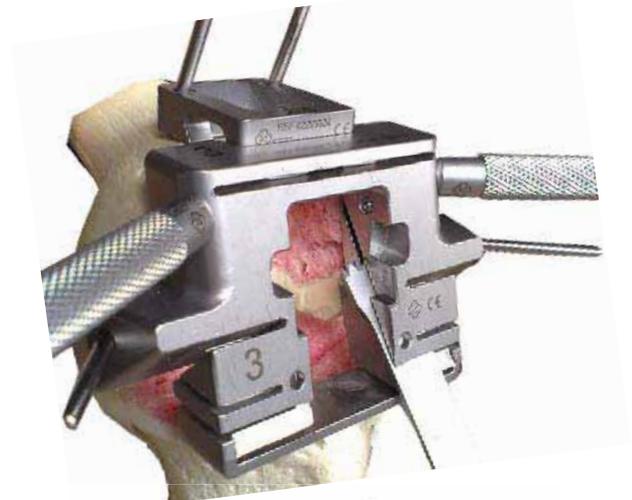
Use the osteotom to prepare the anterior notch.



Perform the posterior and anterior chamfer cuts through the corresponding slots of the 4in1 cutting block.

Avoid interference of the sawblade and the attachment notch preparation while resecting the anterior chamfer.

Remove the attachment notch preparation where required.

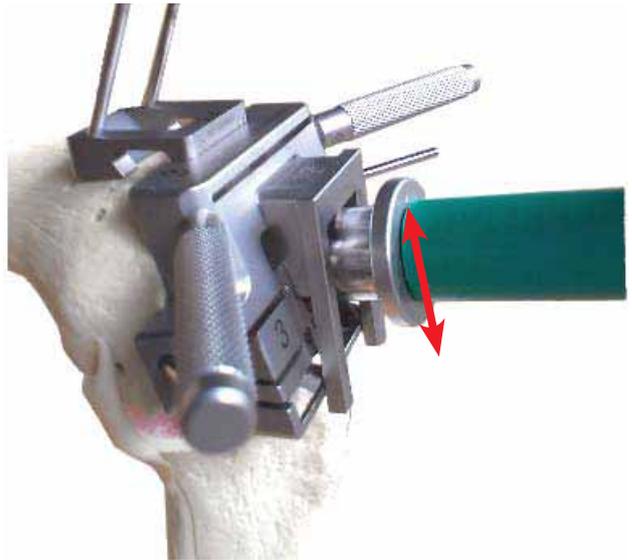


Insert the femoral drill guide 14mm into the long stem sleeve offset. Ream with the rigid drill Ø14mm till the end of the cutting flutes is aligned with the femoral drill guide. This step prepares the transition stem-offset adapter.



## Femoral box preparation

Attach the SC box reamer guide to the cutting block. Ream firstly anterior with the SC box reamer till the stop. Repeat the reaming process posteriorly and guide the reamer anteriorly and posteriorly to prepare the elongated box.



Finalize the box preparation by use of the box chisel. Apply the box chisel anteriorly and posteriorly through the reamer guide till the stop.



Afterwards remove the 4in1 cutting block and the attachment notch preparation.

## Check of the joint space



Assemble the adapter and the joint space gauger **1** to check the joint space. Since the MB SC tibial component is 2,5mm thicker than the primary MB tibial component the spacer shims are assembled to the joint space gauger **2** as followed for simulation of the PE thickness.

used spacer shim corresponds to simulated PE thickness:

12,5mm.....	10mm
15mm.....	12,5mm
17,5mm.....	15mm
20mm.....	17,5mm



If tibial spacer are used tibial trial spacer can be applied to the joint space gauger.

Insert the spacer block into the flexion and extension gap to check the ligament situation and to make some corrections if necessary.

## Final tibial preparation

Insert the lastly used rigid drill (together with the according drill sleeve if applicable) in the tibial medullary canal. Determine the size of the tibial component with help of the SC FB tibial reaming guide of supposed size. Position the reaming guide over the rigid drill onto the tibia. Use the tibial offset alignment (0mm, 2mm, 4mm, 6mm) to check for a potential tibial offset.

Keep in mind the used tibial offset alignment and the offset position, which is read off at the anterior edge of the tibial reaming guide (see marking). It is needed for the assembly of the trial as well as the implant components. If required tibial trial spacer can be attached to the tibial reaming guide.

The rotation can be checked by use of the tibial alignment handle and the external alignment rod.



Fix the position of the tibial reaming guide with two pins to the tibia. Afterwards remove the offset alignment and the rigid drill. Prepare the tibia with the SC tibial reamer by reaming through the reaming guide till the stop.

Then remove the offset alignment, and the rigid drill. Depending on which offset and which drill diameter is used, the tibial reaming guide must be temporarily removed and rigid drill can be taken out of the medullary canal . The table below indicates at what combination of offset and drills the reaming guide can be left (✓) or when it must be removed temporarily through the pins (✗)

Offset 0 mm	Offset 2 mm	Offset 4 mm	Offset 6 mm	rigid drill Ø [mm]
✓	✓	✓	✓	10
✓	✓	✓	✓	11
✓	✓	✓	✓	12
✓	✓	✓	✗	13
✓	✓	✓	✗	14
✓	✓	✓	✗	15
✓	✓	✓	✗	16
✓	✓	✗	✗	17
✓	✓	✗	✗	18
✓	✓	✗	✗	19
✓	✓	✗	✗	20
✓	✗	✗	✗	21
✓	✗	✗	✗	22
✓	✗	✗	✗	23
✓	✗	✗	✗	24
✗	✗	✗	✗	25
✗	✗	✗	✗	26
✗	✗	✗	✗	27

Fix the position of the guide with two pins on the tibia. Then remove the offset alignment, and the medullary drill. Ream then the tibia with the SC Tibireamer till it is stopped by the guide



Insert the femoral reamer sleeve 14mm into the reaming guide and ream with the rigid drill 14mm, that 10mm of the cutting flutes remain visible. Thus the transition from the stem to the offset adapter is prepared.



For the fin preparation connect the handle for fin punch to the tibial fin punch of the determined size.

Punch till the stop through the tibial reaming guide.



The anterior markings of the tibial reaming guide can be used as reference for the rotational alignment. The markings are consistent with the anterior marking of the implant. The rotational alignment can be marked on the anterior edge of the tibia with Methylene Blue.

The bone preparation is herewith completed and fin punch, bone pins and tibial reaming guide are removed.



## Trial reposition

For a trial reduction the components are assembled as followed.

Connect the MB SC tibial trial component and the MB trial offset adapter of the afore determined offset with help of the hexagon screwdriver short 3,5mm.

Pay attention to the correct position of the offset adapter.

The marking of the offset adapter should be consistent with the afore determined offset position.

Afterwards the trial stem of the determined diameter and length can be screwed to the trial offset adapter.



The size of the trial stem depends on the planned use of the implant stem (refer to table 1 for use of the ACS<sup>®</sup> stem and table 2 for use of the ACS<sup>®</sup> stem cementless HA).

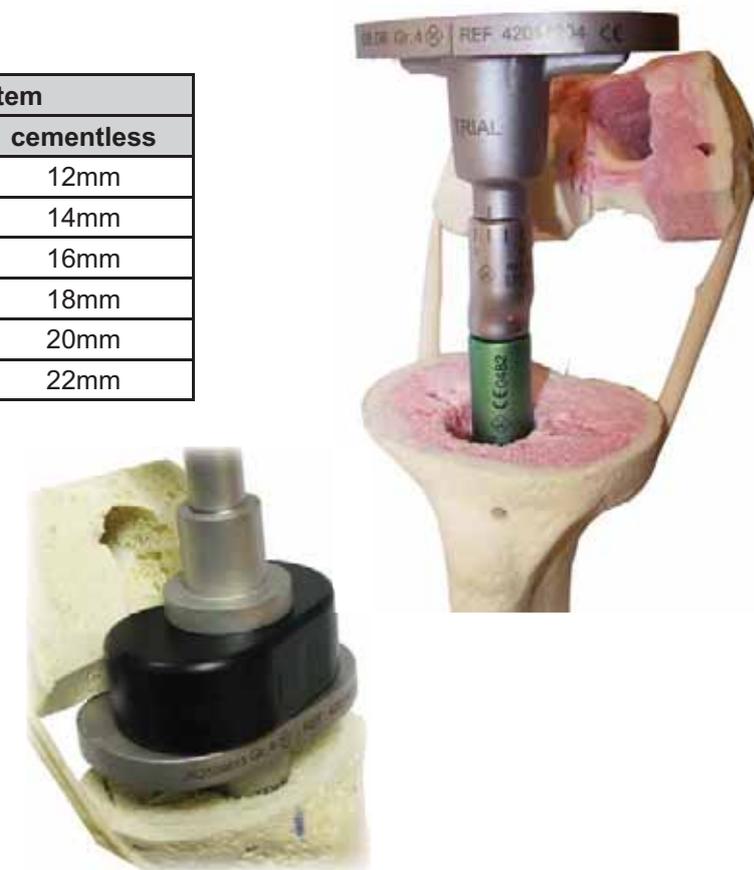
For simulation of spacer tibial trial spacer of the determined size can be attached to the tibial trial component.

drill Ø	trial stem Ø	ACS <sup>®</sup> stem	
		cemented	cementless
12mm	12mm	-	12mm
14mm	14mm	12mm	14mm
16mm	16mm	14mm	16mm
18mm	18mm	16mm	18mm
20mm	20mm	18mm	20mm
22mm	22mm	20mm	22mm

Table 1: Use of the ACS<sup>®</sup> stem

drill Ø	trial stem Ø	ACS <sup>®</sup> stem cementless HA
11mm	-	12mm
13mm	12mm	14mm
15mm	14mm	16mm
17mm	16mm	18mm
19mm	18mm	20mm
21mm	20mm	22mm

Table 2: Use of the ACS<sup>®</sup> stem cementless HA

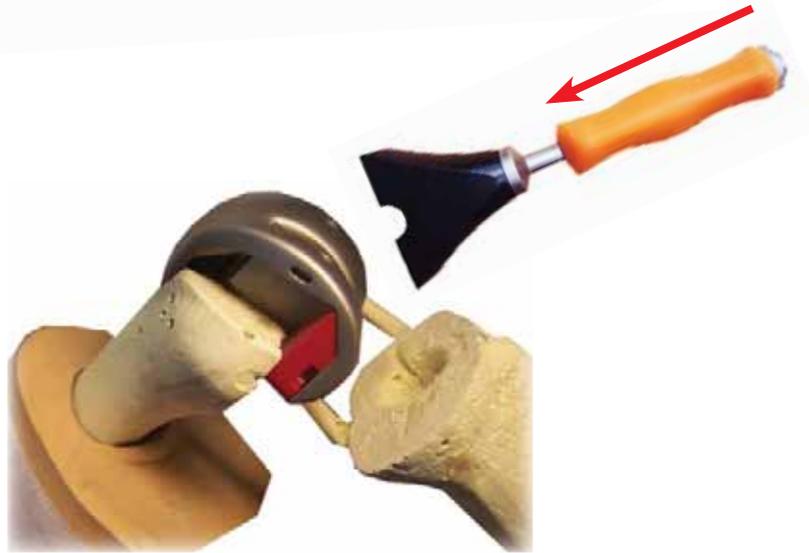


Note: Implants and instruments are sent out for stems up to Ø18mm by default to reduce shipment volume. If larger stem diameters are needed, please specify when placing the order.

On the femoral side you also connect the corresponding trial offset adapter of the determined offset to the femoral trial component. Pay attention to the correct position of the offset adapter and fix the adapter with the hexagon screwdriver short 3,5mm. Afterwards the corresponding trial stem can be attached to the trial offset adapter. The size of the trial stem depends on the planned use of the implant stem (refer to previous page table 1 for use of the ACS® stem and table 2 for use of the ACS® stem cementless HA).



Using femoral spacer attach the posterior femoral trial spacer first to the femoral trial component and than the distal femoral trial spacer of the determined size. Insert the femoral trial component with help of the femoral impactor.



Insert the SC tibial trial keel of the corresponding size into the tibial trial component.



Select the tibial trial PE insert of the corresponding size (the size corresponds to the size of the femoral component). Trial inserts in heights 10mm and 12,5mm are included as complete trial inserts in the instrument container. For simulation of PE inserts with increased thickness there are corresponding adapters available, which need to be combined with the trial PE-insert of height 10mm. Control the correct placement of the trial components and check the joint stability in flexion and extension. Afterwards all trial components are removed with help of the short slap hammer.



## Assembly of the components

Depending on the choice of the implant components (cementless or cemented) an adequate amount of bone cement needs to be kept ready for the cemented components.

The tibial component should be implanted first. The adjustment of the offset adapter is carried out with help of the MB SC tibial offset assembly. Place the offset alignment on the bottom side of the tibial component and align the offset adapter via the etched line to the correct number.



1



2



For fixation of the connection between tibial component and offset adapter the taper connector can be attached. In the fitting block for stems the connection between offset adapter and stem can be fixed additionally **1**.

Tibial spacer of the corresponding size can be fixed to the tibial component via a screw (the screw is packaged together with the spacer) **2**.

Note: The fixation of spacer is only possible for the cemented components.

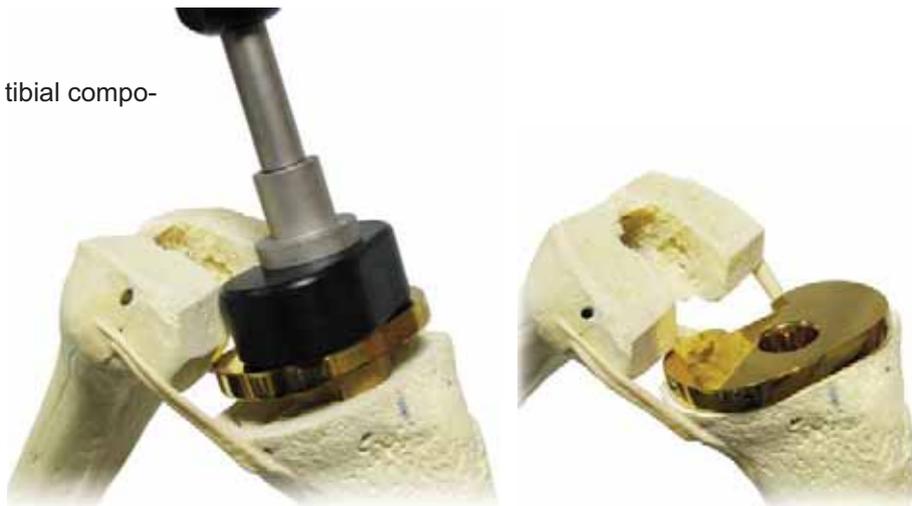
Proceed the same way for the assembly of the femoral components. Femoral spacer are fixed with a screw (the screw is packaged together with the spacer) to the cemented femoral component. For that purpose use the hexagon screw driver 3,5mm respectively the flexible screw driver 3,5mm.

Note: The fixation of spacer is only possible for the cemented components.



## Implantation of the components

Use the short tibial impactor to insert the tibial components into the tibia.



Insert the femoral component of the determined size with the femoral impactor.



Afterwards insert the tibial PE insert of the determined size and thickness into the tibial component.



It is recommended to take final x-rays, to check the fit of the implant components in the bone.

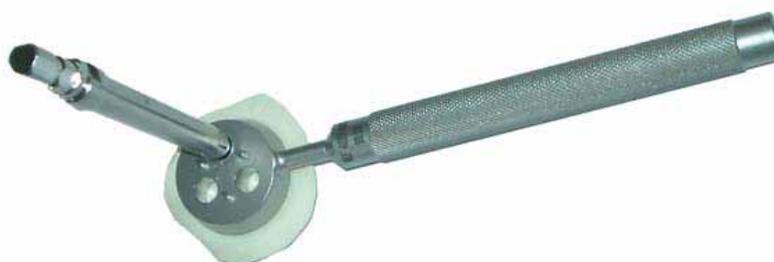


## Patella preparation for PE patella implant

Note: The description of the patella preparation is restricted to the preparation of the PE patella implants. The surgical technique for the rotating patella implants is available upon request.



Use the patella resection guide to prepare the patella dome. For preparation of the PE patella implants the resection height should be set to 9mm, the thickness of all PE patella components. Resect the patella dome by using an ACS® Saw blade through the Saw capture of the guide. Remove the patella resection guide and determine the size of the patella implant by application of the patella drill guide.



Apply the patella drill guide to determine the size of the patella implant. If necessary vary the sizes (all sizes of the PE patella implants are compatible with all sizes of the femoral components) and drill with the patella drill till the stop to prepare the three anchorage holes.



Remove the patella drill guide and insert the trial patella for a trial reposition.



Insert the patella implant of the determined size with cement onto the prepared patella and fixate it with the ic-patella clamp. Leave the clamp fixated till hardening of the cement.

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## **Addition ACS® NC PE-insert**

The NC (non-constrained) PE-insert is intended to be used for revision cases, which provide for adequate ligament stability. Those might be cases for instance, where tibial a revision is required, but the femoral primary component is preserved.

The articulating surface of the NC PE-insert is consistent with the articulating surface of the primary ACS® MB PE-insert; therefore the NC PE-insert is combined with a primary ACS® femoral component and it hence forms a non-constrained joint replacement.

Tibial the NC PE-insert is combined with the ACS® MB SC tibial component.



## **Surgical technique**

The tibial preparation is consistent with the herein described technique, since the ACS® MB SC tibial component is used.

If the femur is supposed to be prepared for a primary ACS® femoral component, the femoral bone is prepared according to the preferred primary technique (4in1 technique distal femur cut first or classic technique Tibia cut first).

For a trial reposition according trial PE-inserts are available.

## **Postoperative Instructions**

Post-operative patient care, patient instructions and warnings are of the utmost importance. The use of external leg support for a limited period of time is recommended to stimulate healing.

Especially active and passive movements of the patients should be monitored.

The post-operative treatment should aim for the prevention of overloading of the joint and stimulation of the healing process.

Regular monitoring of position and condition of the prosthetic components and the surrounding bone is recommended.

## ACS® SC implants



### ACS® SC femoral component, cemented

implavit®, CoCrMo acc. to ISO 5832-4 with TiN-coating

size	Left	Right
2	4200-4302	4200-4312
2,5	4200-4308	4200-4318
3	4200-4303	4200-4313
4	4200-4304	4200-4314
5	4200-4305	4200-4315
6	4200-4306	4200-4316



### ACS® SC femoral component, cementless porous coated

implavit®, CoCrMo acc. to ISO 5832-4 with TiN-coating and porous coating

size	Left	Right
2	4200-4202	4200-4212
2,5	4200-4208	4200-4218
3	4200-4203	4200-4213
4	4200-4204	4200-4214
5	4200-4205	4200-4215
6	4200-4206	4200-4216



### ACS® MB SC tibial component, cemented

implavit®, CoCrMo acc. to ISO 5832-4 with TiN-coating

size	
2	4201-4002
3	4201-4003
4	4201-4004
5	4201-4005
6	4201-4006



### ACS® MB SC tibial component, cementless porous coated

implavit®, CoCrMo acc. to ISO 5832-4 with TiN-coating and porous coating

size	
2	4201-4102
3	4201-4103
4	4201-4104
5	4201-4105
6	4201-4106

### ACS® stems, femoral and tibial

implatan®, TiAl<sub>6</sub>V<sub>4</sub> - acc. to ISO 5832-3



diameter	L: 100mm	L: 150mm	L: 200mm
12mm	4208-1210	4208-1215	4208-1220
14mm	4208-1410	4208-1415*	4208-1420*
16mm	4208-1610	4208-1615*	4208-1620*
18mm	4208-1810	4208-1815*	4208-1820*
20mm	4208-2010	4208-2015*	
22mm	4208-2210	4208-2215*	

\* slotted stems

### ACS® stem cementless HA, femoral and tibial

*implatan®*,  $TiAl_6V_4$ -acc. to ISO 5832-3 with HA-coating

diameter	L: 100mm	L: 150mm	L: 200mm
12mm	4209-1210	4209-1215	4209-1220*
14mm	4209-1410	4209-1415	4209-1420*
16mm	4209-1610	4209-1615	4209-1620*
18mm	4209-1810	4209-1815	4209-1820*
20mm	4209-2010	4209-2015	
22mm	4209-2210	4209-2215	

\* distal holes (Ø5mm) for possible screw fixation



### ACS® double taper

*implatan®*,  $TiAl_6V_4$ -acc. to ISO 5832-3

0 mm	+2 mm	+4 mm	+6 mm
4201-0460	4201-0462	4201-0464	4201-0466



### ACS® MB SC PE-insert

UHMW-PE acc. to ISO 5834-2

size	Implant height				
	10,0 mm	12,5 mm	15,0 mm	17,5 mm	20,0 mm
2	4202-9210	4202-9212	4202-9215	4202-9217	4202-9220
3	4202-9310	4202-9312	4202-9315	4202-9317	4202-9320
4	4202-9410	4202-9412	4202-9415	4202-9417	4202-9420
5	4202-9510	4202-9512	4202-9515	4202-9517	4202-9520
6	4202-9610	4202-9612	4202-9615	4202-9617	4202-9620



### ACS® SC femoral spacer posterior incl. ACS® SC screw for spacer

*implatan®*,  $TiAl_6V_4$ -acc. to ISO 5832-3

size	5mm	10mm
2	4200-0025	4200-0020
2,5	4200-0085	4200-0080
3	4200-0035	4200-0030
4	4200-0045	4200-0040
5	4200-0055	4200-0050
6	4200-0065	4200-0060



### ACS® SC femoral spacer distal incl. ACS® SC screw for spacer

*implatan®*,  $TiAl_6V_4$ -acc. to ISO 5832-3

size	5mm		10mm	
	distal ll/rm	distal rl/lm	distal ll/rm	distal rl/lm
2	4200-0525	4200-0520	4200-1025	4200-1020
2,5	4200-0585	4200-0580	4200-1085	4200-1080
3	4200-0535	4200-0530	4200-1035	4200-1030
4	4200-0545	4200-0540	4200-1045	4200-1040
5	4200-0555	4200-0550	4200-1055	4200-1050
6	4200-0565	4200-0560	4200-1065	4200-1060



### ACS® SC screw for spacer

*implatan®*,  $TiAl_6V_4$ -acc. to ISO 5832-3

4208-0001





**ACS® MB SC tibial spacer incl. ACS® SC screw for spacer**

*implatan®*,  $TiAl_6V_4$ -acc. to ISO 5832-3

size	5mm		10mm	
	LL/RM	LL/RM	RL/LM	RL/LM
2	4208-5052	4208-5102	4208-0052	4208-0102
3	4208-5053	4208-5103	4208-0053	4208-0103
4	4208-5054	4208-5104	4208-0054	4208-0104
5	4208-5055	4208-5105	4208-0055	4208-0105
6	4208-5056	4208-5106	4208-0056	4208-0106



**ACS® MB offsetadapter**

*implatan®*,  $TiAl_6V_4$ -acc. to ISO 5832-3

+2mm	+4mm
4208-3002	4208-3004



**ACS® MB NC PE-insert**

*UHMW-PE* acc. to ISO 5834-2

size	Implant height			
	10,0 mm	12,5 mm	15,0 mm	17,5 mm
2	4202-7210	4202-7212	4202-7215	4202-7217
3	4202-7310	4202-7312	4202-7315	4202-7317
4	4202-7410	4202-7412	4202-7415	4202-7417
5	4202-7510	4202-7512	4202-7515	4202-7517
6	4202-7610	4202-7612	4202-7615	4202-7617

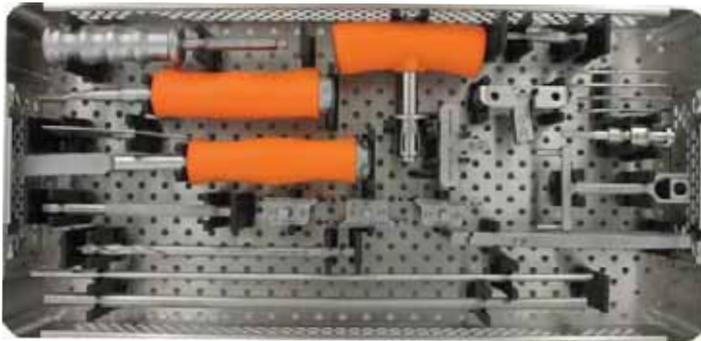


**ACS® PE-patella cemented**

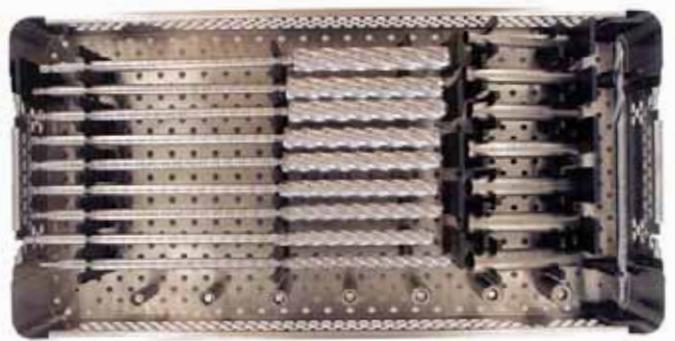
*UHMW-PE* acc. to ISO 5834-2

size	REF
26mm	4203-0326
29mm	4203-0329
32mm	4203-0332
35mm	4203-0335

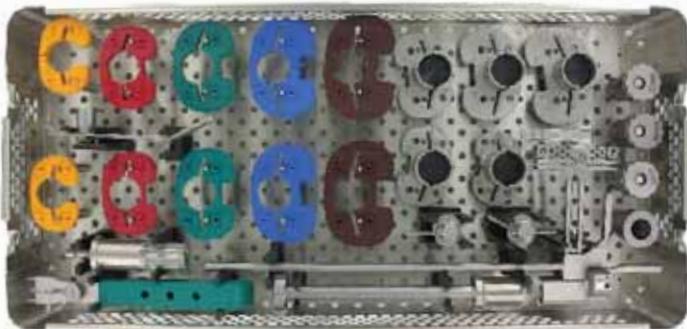
**ACS® MB SC Instruments container**



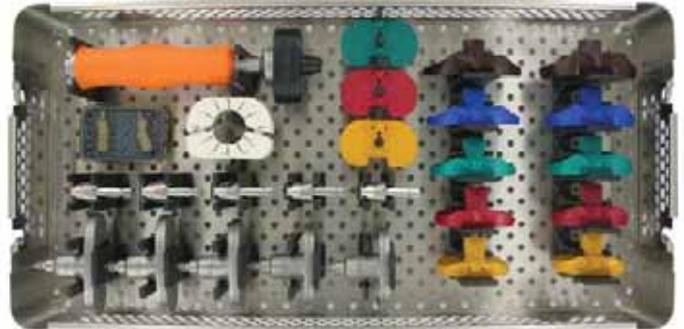
**ACS® SC basic container**  
4223-0430



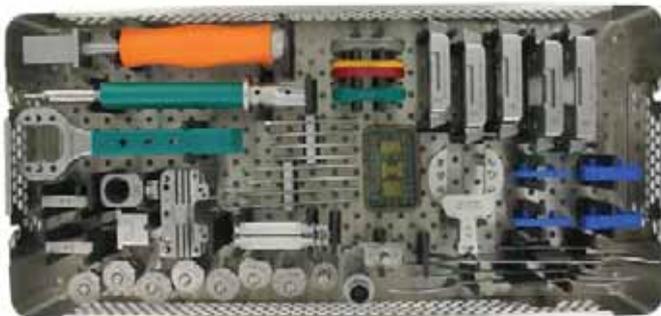
**Rigid drill container 1**  
7999-5771



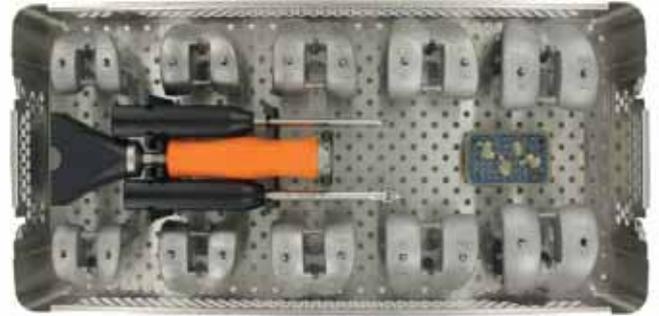
**ACS® MB SC tibia container 2.1**  
4223-0455



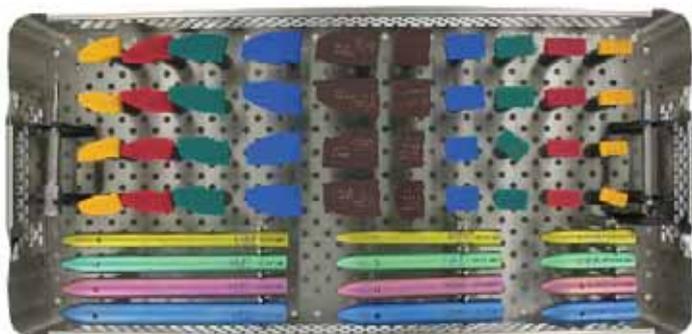
**ACS® MB SC tibial container 3**  
4223-0453



**ACS® SC 4in1 femoral container** incl. size 2,5  
4223-0434 4223-0534



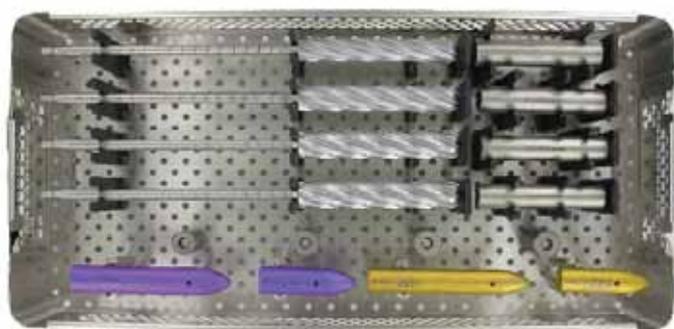
**ACS® SC femoral trial container 1** incl. size 2,5  
4223-0435 4223-0535



**ACS® SC femoral trial container 2.1** incl. size 2,5  
4223-0437 4223-0537

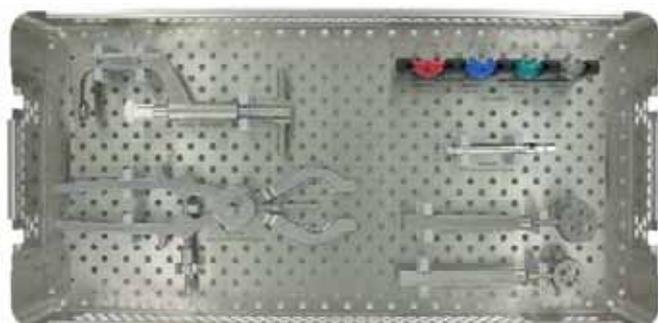


**Stem assembly container**  
7999-5770



**ACS® SC stem container 19-22mm**  
4223-0440

**ACS® Instrument container Patella**



**ACS® PE Patella Resection Container**  
4223-0410

**ACS® Instrument container NC**



**ACS® NC PE trial container**  
4223-0077

**ACS® Patella Instruments**

**ACS® PE Patella Resection Container**  
4223-0410

- ACS® PE patella trial
- 4213-0326 size 26mm
- 4213-0329 size 29mm
- 4213-0332 size 32mm
- 4213-0335 size 35mm



4222-0002  
patella resection guide 1,5mm



ACS® patella drill guide

- 4222-0004 26/29mm
- 4222-0005 32/35mm



4223-0024  
femoral patella drill with stop



7352-0001  
ic- patella clamp



**ACS® NC Instruments**

**ACS® NC PE trial container**  
4223-0077

- ACS® NC tibial trial keel
- 4201-4302 size 2
- 4201-4303 size 3
- 4201-4304 size 4
- 4201-4305 size 5
- 4201-4306 size 6



- ACS® MB trial PE-insert
- 4212-1210 size 2/10mm
- 4212-1212 size 2/12,5mm
- 4212-1310 size 3/10mm
- 4212-1312 size 3/12,5mm
- 4212-1410 size 4/10mm
- 4212-1412 size 4/12,5mm
- 4212-1510 size 5/10mm
- 4212-1512 size 5/12,5mm
- 4212-1610 size 6/10mm
- 4212-1612 size 6/12,5mm



## ACS® MB SC Instruments

### ACS® SC basic container 4223-0430

4220-0318  
resection check long



4220-0880  
femoral alignment 6°



4220-0819  
Distal cutting-block adapter



external rotation guide  
4220-0820 neutral  
4220-0824 3° right  
4220-0825 3° left



4223-0004  
external alignment host



4223-0006  
pin inserter 3,2 mm



4223-0023  
ic- T-handle Zimmer-Jakobs



4223-0031  
slap hammer short



4223-0035  
external alignment rod  
6x400mm



4223-0036  
femoral/tibial extractor



4223-0060  
osteotom size 2-6



4223-0022  
IC-adapter



7512-0800  
pin extractor



4224-0032  
Fixations Pin 3,2mm x 97mm mit 15mm

4224-0033  
Fixations Pin 3,2mm x 77mm mit 15mm



### Rigid drill container 1 7999-5771

4220-0014  
initiator drill 9mm



4211-1512 12/150mm  
4211-1513 13/150mm  
4211-1514 14/150mm  
4211-1515 15/150mm  
4211-1516 16/150mm  
4211-1517 17/150mm  
4211-1518 18/150mm

4211-2012 12/200mm  
4211-2013 13/200mm  
4211-2014 14/200mm  
4211-2015 15/200mm  
4211-2016 16/200mm  
4211-2017 17/200mm  
4211-2018 18/200mm



Rigid drill  
4220-3010 Ø10/330mm  
4220-3011 Ø11/330mm  
4220-3012 Ø12/330mm  
4220-3013 Ø13/330mm  
4220-3014 Ø14/330mm  
4220-3015 Ø15/330mm  
4220-3016 Ø16/330mm  
4220-3017 Ø17/330mm  
4220-3018 Ø18/330mm



## ACS® MB SC Tibia Container 2.1 4223-0455

ACS® SC tibial reamer guide

4210-4212 size 2

4210-4213 size 3

4210-4214 size 4

4210-4215 size 5

4210-4216 size 6



4210-2215

tibial alignment handle



ACS® tibial drill sleeve

4220-5014 14mm



MK tibial offset sleeve

4210-4270 0mm

4210-4261 2mm

4210-4263 4mm



ACS® SC tibial trial spacer  
r/l/m

4212-0052 size 2/5mm

4212-0053 size 3/5mm

4212-0054 size 4/5mm

4212-0055 size 5/5mm

4212-0056 size 6/5mm

4212-0102 size 2/10mm

4212-0103 size 3/10mm

4212-0104 size 4/10mm

4212-0105 size 5/10mm

4212-0106 size 6/10mm

l/r/m

4212-5052 size 2/5mm

4212-5053 size 3/5mm

4212-5054 size 4/5mm

4212-5055 size 5/5mm

4212-5056 size 6/5mm

4212-5102 size 2/10mm

4212-5103 size 3/10mm

4212-5104 size 4/10mm

4212-5105 size 5/10mm

4212-5106 size 6/10mm



4220-0428

tibial stylus 2/12,5mm for slotted resection



7755-0054

tibia cutting block revision 0°



7755-0024

I/M tibial alignment guide



4221-0049

handle for tibial fin punch



tibial fin punch

4221-0050 size 2-4

4221-0051 size 5-7



4210-4220

ACS® SC tibial reamer



## ACS® SC 4in1 femoral container 4223-0434/0534

4210-4300

ACS® joint space gauger



4210-4301

adapter for joint space gauger



ACS® spacer shim

4210-4312 12,5mm

4210-4315 15mm

4210-4317 17,5mm

4210-4320 20mm



MK spacer for femoral positioner

4211-1005 5mm

4211-1010 10mm



4215-0114

ACS® SC femoral drill guide 14mm



distal distance adapter magnetic

4219-0505 5mm

4219-0510 10mm

4219-0515 15mm



4220-0500

rotation guide revision neutral



ACS® SC 4in1 femoral cutting block

4220-0502 size 2

4220-0503 size 3

4220-0504 size 4

4222-0505 size 5

4220-0506 size 6

4220-0508 size 2,5



4220-0515

femoral resection guide 1,5mm



4220-0520

distal femoral cutting block



4220-0521

femoral positioner



4220-0522

long stem sleeve offset



MK 4in1 attachment notch preparation

4220-0624 size 2-4

4220-0565 size 5-6



offset sleeve

4220-0530 0mm

4220-0532 left 2mm

4222-0534 left 4mm

4220-0536 left 6mm

4220-1032 right 2mm

4220-1034 right 4mm

4220-1036 right 6mm



4220-0533

offset indicator



femoral sizing template

4220-4020 size 2

4220-4032 size 2-2,5

4220-4033 size 3-4

4220-4035 size 5-6



4220-4050

ACS® SC box chisel



4220-4051

ACS® SC box reamer



4220-4052

ACS® SC box reamer guide



4221-0019

drill 126x3,2mm



4223-0008

fixation pin 3,2x97mm



4223-0017

modular handle „fast fix“



4223-0029

fixation pin 3,2x77mm



## ACS® MB SC Tibia Container 3 4223-0453

ACS® MB trial PE insert SC

- 4202-1210 2/10mm
- 4202-1212 2/12,5mm
- 4202-1310 3/10mm
- 4202-1312 3/12,5mm
- 4202-1410 4/10mm
- 4202-1412 4/12,5mm
- 4202-1510 5/10mm
- 4202-1512 5/12,5mm
- 4202-1610 6/10mm
- 4202-1612 6/12,5mm



ACS® SC tibial trial keel

- 4210-4242 size 2
- 4210-4243 size 3
- 4210-4244 size 4
- 4210-4245 size 5
- 4210-4246 size 6



ACS® MB SC tibial trial component

- 4210-4252 size 2
- 4210-4253 size 3
- 4210-4254 size 4
- 4210-4255 size 5
- 4210-5256 size 6



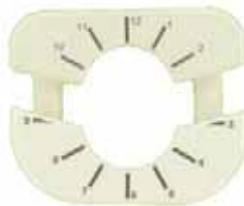
ACS® MB SC trial offset adapter

- 4210-4262 2mm
- 4210-4264 4mm



4210-4265

ACS® MB SC tibial offset assembly



ACS® tibial trial adapter

- 4212-1015 15mm
- 4212-1017 17,5mm
- 4212-1020 20mm



4223-0045

ACS® tibial impactor short



## ACS® SC femoral trial container 1 4223-0435/0535

0270-1000

flexible screwdriver 3,5mm short



0280-1007

hexagon screw driver short 3,5mm



ACS® SC femoral trial component

- 4210-3602 size 2L
- 4210-3603 size 3L
- 4210-3604 size 4L
- 4210-3605 size 5L
- 4210-3606 size 6L
- 4210-3608 size 2,5L



- 4210-3612 size 2R
- 4210-3613 size 3R
- 4210-3614 size 4R
- 4210-3615 size 5R
- 4210-3616 size 6R
- 4210-3618 size 2,5R

ACS® trial offset adapter

- 4215-0060 0mm
- 4215-0062 2mm
- 4215-0064 4mm
- 4215-0066 6mm



4223-0044

ACS® femoral impactor short



## ACS® SC femoral trial container 2.1 4223-0437/0537

### ACS® trial stem

4218-1210 12x100mm  
4218-1215 12x150mm  
4218-1220 12x200mm  
4218-1410 14x100mm  
4218-1415 14x150mm  
4218-1420 14x200mm  
4218-1610 16x100mm  
4218-1615 16x150mm  
4218-1620 16x200mm  
4218-1810 18x100mm  
4218-1815 18x150mm  
4218-1820 18x200mm



### MK trial femoral spacer posterior

7723-2005 2/5mm  
7723-2505 2,5/5mm  
7723-3005 3/5mm  
7723-4005 4/5mm  
7723-5005 5/5mm  
7723-6005 6/5mm  
7723-2010 2/10mm  
7723-2510 2,5/10mm  
7723-3010 3/10mm  
7723-4010 4/10mm  
7723-5010 5/10mm  
7723-6010 6/10mm



### MK trial femoral spacer distal ll/rm

7724-2005 2/5mm  
7724-2505 2,5/5mm  
7724-3005 3/5mm  
7724-4005 4/5mm  
7724-5005 5/5mm  
7724-6005 6/5mm  
7724-2010 2/10mm  
7724-2510 2,5/10mm  
7724-3010 3/10mm  
7724-4010 4/10mm  
7724-5010 5/10mm  
7724-6010 6/10mm



### MK trial femoral spacer distal rl/lm

7725-2005 2/5mm  
7725-2505 2,5/5mm  
7725-3005 3/5mm  
7725-4005 4/5mm  
7725-5005 5/5mm  
7725-6005 6/5mm  
7725-2010 2/10mm  
7725-2510 2,5/10mm  
7725-3010 3/10mm  
7725-4010 4/10mm  
7725-5010 5/10mm  
7725-6010 6/10mm

### 4223-0033 adapter SC for sledge hammer



### 7801-0025 adapter for slap hammer M5



**ACS® SC stem container 19-22mm  
4223-0440**

ACS® trial stem

4218-2010 20x100mm

4218-2015 20x150mm

4218-2210 22x100mm

4218-2215 22x150mm



rigid drill

4220-3019 Ø19/330mm

4220-3020 Ø20/330mm

4220-3021 Ø21/330mm

4220-3022 Ø22/330mm



drill sleeve

4211-1519 19/150mm

4211-1520 20/150mm

4211-1521 21/150mm

4211-1522 22/150mm



4211-2019 19/200mm

4211-2020 20/200mm

4211-2021 21/200mm

4211-2022 22/200mm



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