







LCU Hip System
uncemented & cemented

CE 0482

Explanation of Pictograms			
	Manufacturer		Article number
	Material number		Product meets the applicable requirements, which are regulated in the EU harmonization legislation for the affixing of the CE marking.

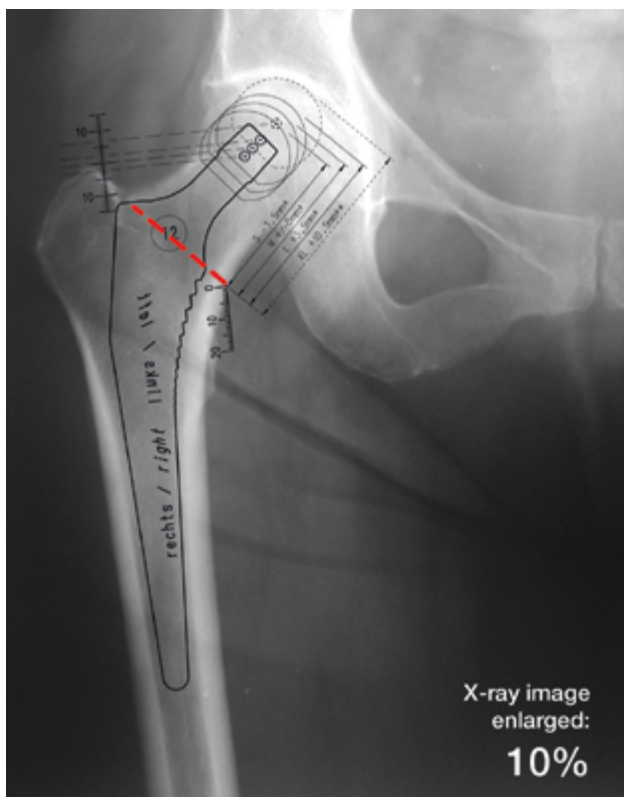
LCU Hip System

uncemented & cemented

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Important Information

Preoperative Planning



Templating aids as a first orientation in terms of implant choice and implant positioning. Planning templates are available for this purpose (Fig. 1).

The templating should be performed using high-quality AP and ML X-rays. Each X-ray should be large enough to apply the whole template.

Choice of stem size and stem type

Select the stem size which achieves mediolateral cortical engagement in the proximal section of the stem. It must be ensured that the stem is suited to the anterior bow of the femur in the sagittal plane.

The stem is fixed proximally and therefore does not need to fit closely in the distal area. In order to restore the proper offset and center of rotation, the acetabular cup center of rotation is matched with the desired head center of rotation of either the standard or lateralized stem.

Lateralized stems are available to achieve an anatomical reconstruction, even in case a high offset (+7 mm compared to standard stem) is required.

The templates for the LCU stem show the center of rotation for different head-neck-lengths.

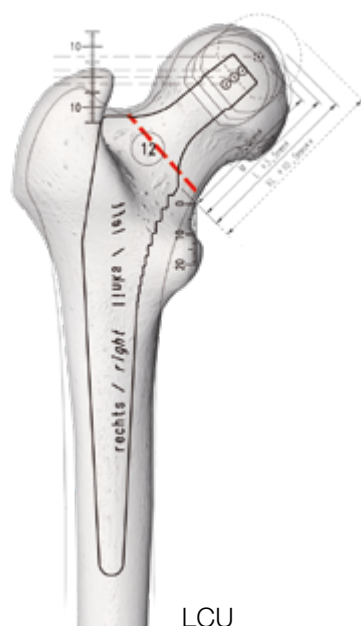


Fig. 1

INFORMATION:

Templating is an important element of the pre-operative planning. However, final decisions regarding implant choice and fit should be made intra-operatively to ensure appropriate leg length and joint stability.

Standing, weight bearing X-rays are recommended.

Both an AP and a lateral X-ray should be used to determine the required stem size.

Account for pelvic tilt to ensure correct positioning of the implants.

Preparation and Implantation

Patient positioning/Surgical approaches

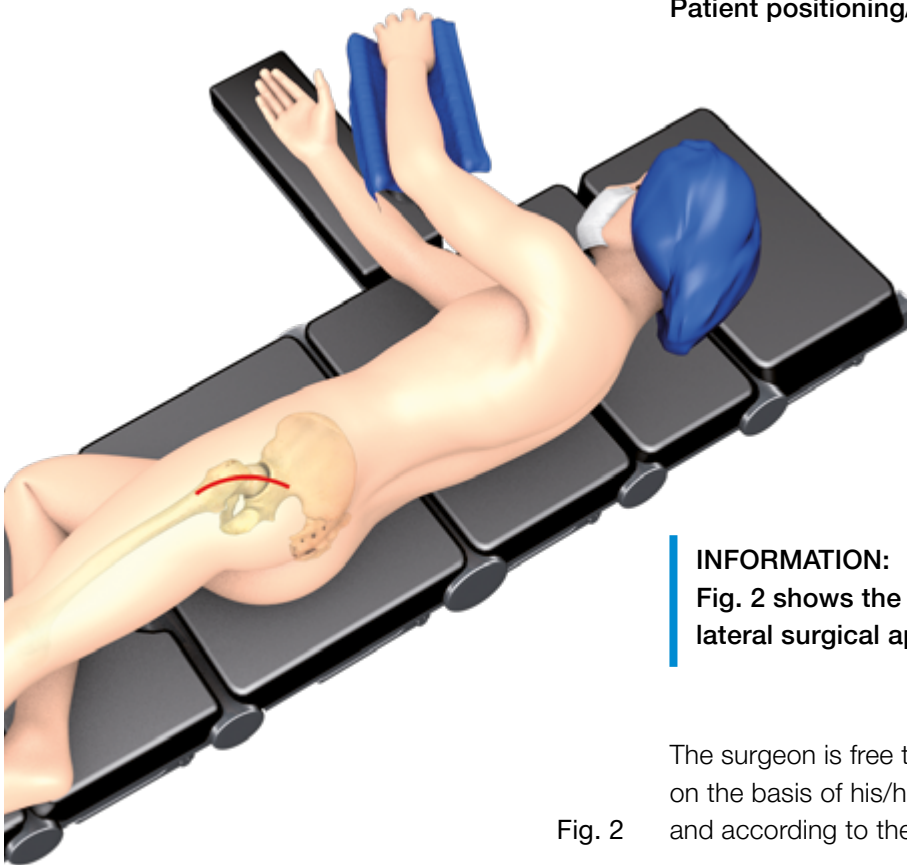
**INFORMATION:**

Fig. 2 shows the usual position for postero-lateral surgical approach.

Fig. 2

The surgeon is free to choose the surgical approach on the basis of his/her experience and judgement, and according to the specific situation.

The procedure described below applies for both the uncemented and cemented version of the LCU Hip System.

Determination of the Resection Level

The standard osteotomy plane is normally at 45° to the axis of the femoral stem.

For purposes of orientation the Resection Guide can be placed on the lesser trochanter in parallel to the longitudinal axis of the femur (Fig. 3). Resection can then be carried out along the slit corresponding to the level selected in preoperative planning.

The Resection Guide indicates both the level and the angle of resection. Care should be taken to ensure that resection is also carried out at 90° to the axis of the femoral neck in the AP plane.

Alternatively, a Bone Compressor can be used to determine the resection level.

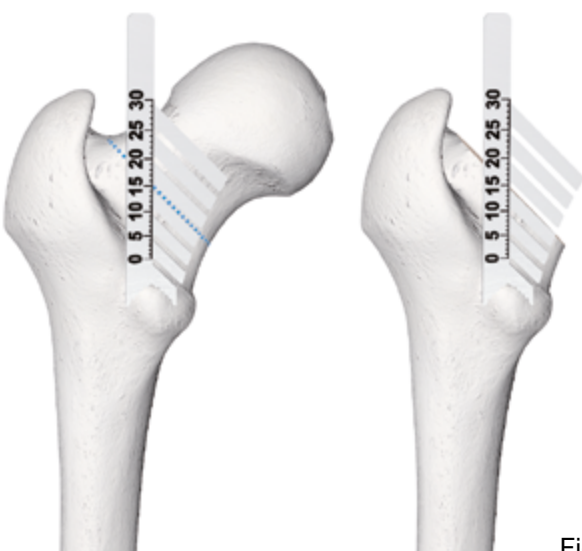


Fig. 3

Resection of the Femoral Neck

Resection is carried out at the planned level (Fig. 4).

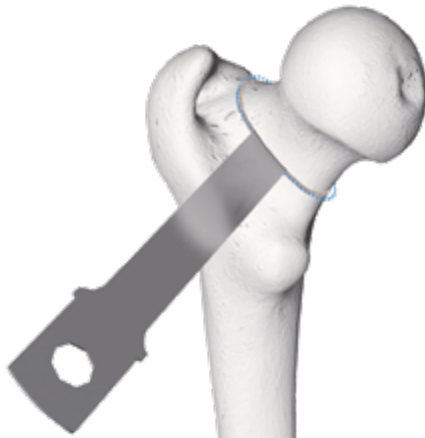


Fig. 4

In most cases, the acetabulum is prepared before the femur.



Fig. 5

Preparation of the Proximal Femur

The medullary canal is opened with the Box Chisel. This is done as laterally as possible to prevent varus positioning of the femoral component.



Fig. 6

To position the Bone Compressor in the center of the canal, preparation is performed with the Opening Awl (Fig. 6).



Fig. 7

To fix the Bone Compressor in the Broach Handle open the lever and insert the Bone Compressor with the medial side in the direction of the lever.

Close the lever. Start with the smallest Bone Compressor. Take into account the anteversion of the stem required (usually 15°).

Lateral compressive stress (which may lead to thigh pain later on) in the distal femur is avoided by inserting the Bone Compressor in an axial direction (Fig. 7).

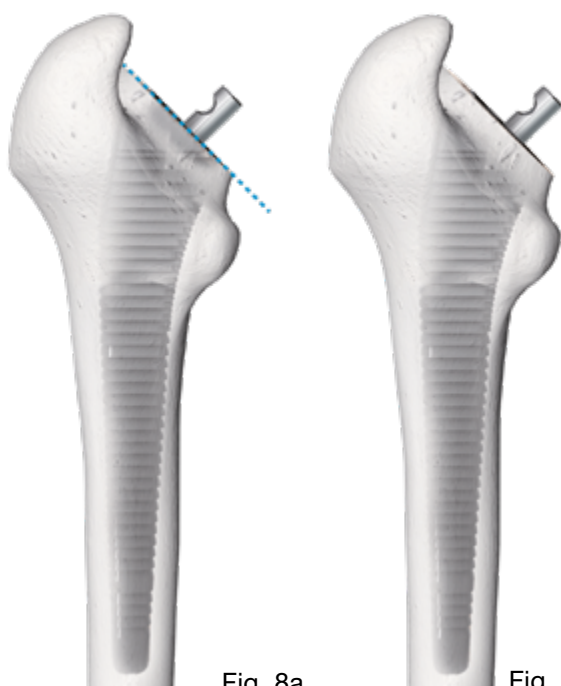


Fig. 8a

Fig. 8b

Drive in the Bone Compressor until the junction surface of the Bone Compressor is flush with the resected neck surface.

INFORMATION:

The resection level is determined during preoperative planning with the aid of the templates. Any deviations must now be taken into consideration (Fig. 8a and 8b).

Continue with progressively larger Bone Compressor sizes until the Bone Compressor is optimally seated in the femur (rotational stability, axial stability, implant level (height of center of rotation)). When the optimal Bone Compressor size is reached (which is not necessarily the same as planned preoperatively) remove the Broach Handle and leave the Bone Compressor in place.

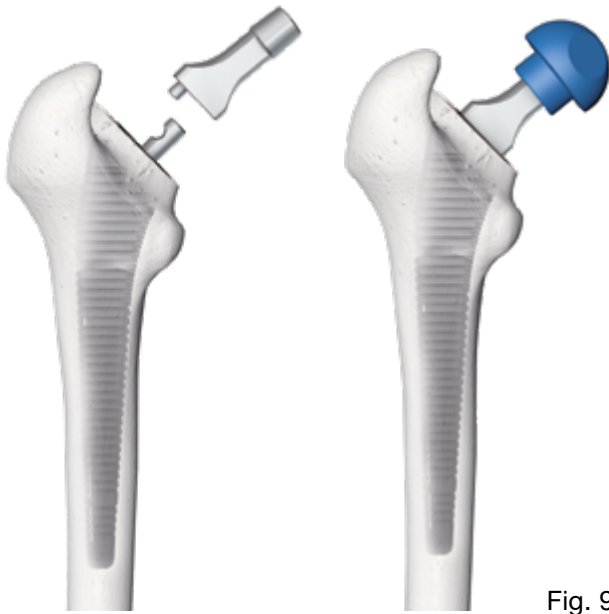


Fig. 9

Trial Reduction

The acetabular cup is usually implanted before the stem. Trial reduction can then be carried out.

The inserted Bone Compressor serves as a trial prosthesis on which the Trial Neck Segment is inserted. Select the appropriate Trial Neck Segment according to the pre-op planning (stem types standard, lateralized). The Plastic Trial Head is then placed on the Trial Neck Segment (Fig. 9).

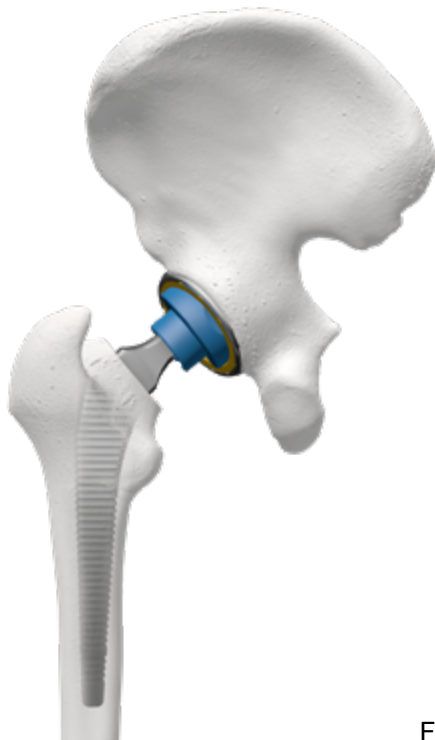


Fig. 10

The stability and range of motion of the joint are examined with the help of the trial components (Fig. 10).

Finally, the Plastic Trial Head and Trial Neck Segment are removed by hand and the Bone Compressor is removed with the help of the Broach Handle.



Fig. 11a

Inserting the Final Stem

Select the appropriate LCU Hip Prosthesis Stem (standard, lateralized type) of the same size as the final Bone Compressor and remove it from the sterile packaging.

Procedure for LCU Hip System, uncemented

Screw the Positioner onto the final stem (Fig. 11a). Drive in the stem with careful and controlled hammer blows until the transition line between the porous surface and the polished neck area corresponds to the profile of the last Bone Compressor used (Fig. 11b).

Remove the Positioner.

The Impactor can also be used instead of the Positioner to introduce the stem.

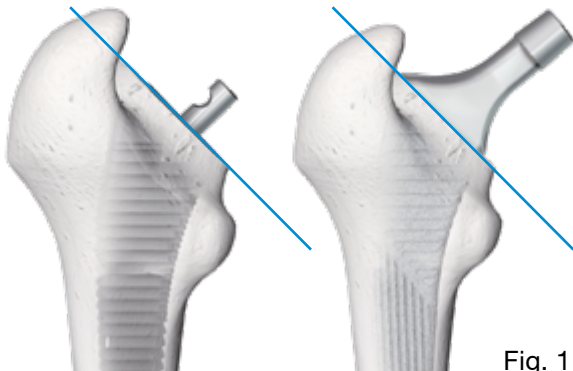


Fig. 11b



Fig. 12



Fig. 13

Procedure for LCU Hip System, cemented

After removing the Bone Compressor, the femoral canal is rinsed thoroughly. Jet lavage is recommended for this purpose.

The femoral canal is then sealed distal to the planned prosthesis tip by means of an Intramedullary Plug (Fig.12). For further information please refer to the separate surgical technique 'Intramedullary Plugs'.

The cement is mixed under vacuum and then inserted into the femoral canal using an applicator syringe with nozzle. Application begins distally. The canal is filled with cement retrogradely and uniformly by slowly pulling out the nozzle while the cement is being applied.

Then the cement is compressed in the femoral canal for approx. 30 seconds, for which a cement compressor should be used.

INFORMATION:

Before filling the femoral canal, check the viscosity of the cement by touching the cement on the tip of the applicator syringe with your finger, while wearing clean gloves. When the cement adheres well to the glove and draws out long, heavy threads, this is the best time to apply the cement.

After cement application, the LCU Hip Prosthesis Stem, cemented is introduced into the femoral cavity as far as possible by using the Insertion Forceps (Fig. 13).



The LCU Hip Prosthesis Stem, cemented is driven into its final position using the Impactor. The surplus of the cement has to be removed. While the cement hardens, the stem is pressed firmly into the cement bed with the tip of the Impactor located in the hemispherical depression on the lateral collar, thus avoiding transmission of the surgeon's movements to the stem (Fig. 14).

Fig. 14

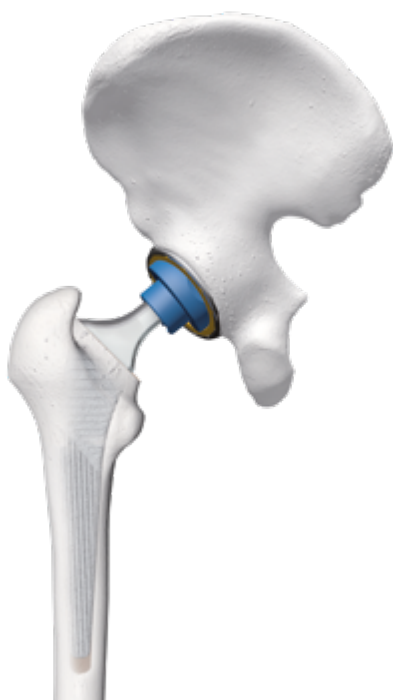


Fig. 15

Final Trial Reduction

At this point the correct head-neck-length can be checked again with the Plastic Trial Heads (Fig. 15).

Remove the appropriate Prosthesis Head (diameter, length, material) from the sterile packaging.

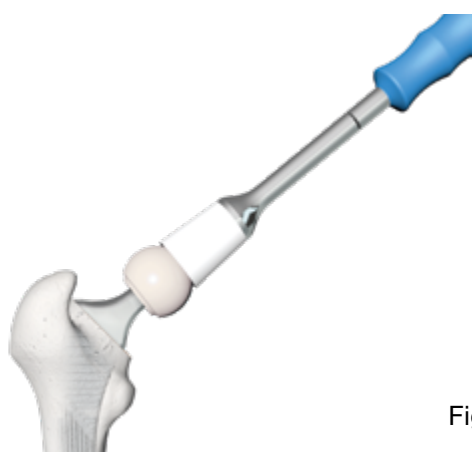


Fig. 16

Attaching the Final Prosthesis Head

Clean and dry the taper of the stem thoroughly. This is particularly important with ceramic heads. Mount the head by hand using axial pressure and a turning motion.

To finish, the Head Impactor is used to gently tap the Prosthesis Head into position (Fig. 16).

Clean the joint surfaces thoroughly and then finally reduce the joint (Fig. 17).



Fig. 17

Removing the Components

Each of the prosthesis components can be removed if necessary.

The Prosthesis Head can be removed in an axial direction using a rod which is placed at the base of the head.

The Positioner can be used to extract the femoral component.

CAUTION:

If a ceramic head has to be replaced with another ceramic head, only ceramic revision heads (with a metal inner taper) should be used.

LCU Hip System

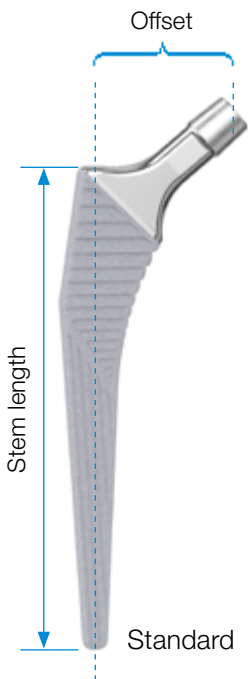
Sizes

The LCU Hip Prosthesis Stem types standard and lateralized are available in 11 sizes each. The dimensions of the stems and the offset increase proportionately with increasing size.

The CCD angles are:

- 130° in standard stem type
- 125° in lateralized stem type

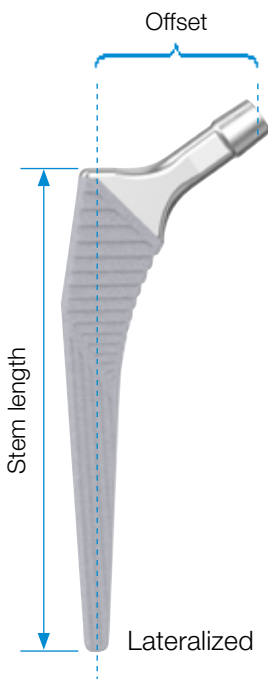
LCU Hip System, uncemented



LCU Hip Prosthesis Stems, uncemented, standard type

MAT Ti6Al4V, HX coating, taper 12/14, CCD angle 130°

REF	Size	Length mm	Offset mm
165-012/26	8	115	38.0
165-013/26	9	130	38.5
165-014/26	10	140	39.2
165-015/26	11	145	40.0
165-016/26	12	150	40.7
165-017/26	13	155	41.5
165-018/26	14	160	42.0
165-019/26	15	165	43.0
165-020/26	16	170	43.5
292-126/26	18	180	44.5
292-127/26	20	190	45.0

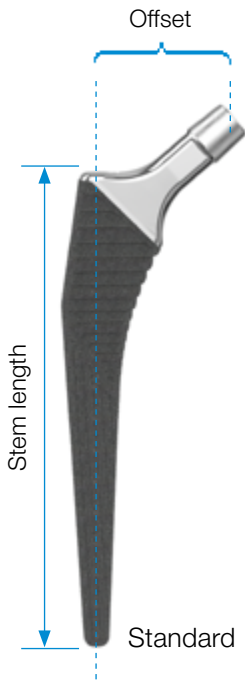


LCU Hip Prosthesis Stems, uncemented, lateralized type, + 7 mm offset

MAT Ti6Al4V, HX coating, taper 12/14, CCD angle 125°

REF	Size	Length mm	Offset mm
165-112/26	8	115	45.0
165-113/26	9	130	45.5
165-114/26	10	140	46.2
165-115/26	11	145	47.0
165-116/26	12	150	47.7
165-117/26	13	155	48.5
165-118/26	14	160	49.0
165-119/26	15	165	50.0
165-120/26	16	170	50.5
292-186/26	18	180	51.5
292-187/26	20	190	52.0

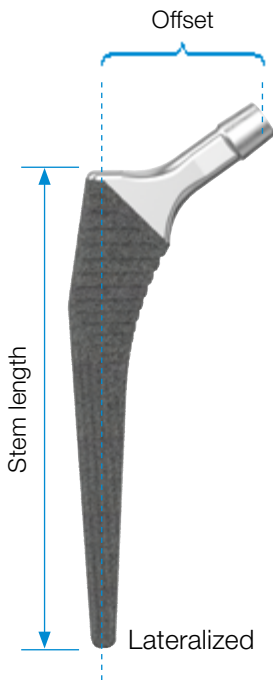
LCU Hip System, uncemented



LCU Hip Prosthesis Stems, uncemented, standard type

MAT Ti6Al4V, PoroLink, taper 12/14, CCD angle 130°

REF	Size	Length mm	Offset mm
165-312/26	8	115	38.0
165-313/26	9	130	38.5
165-314/26	10	140	39.2
165-315/26	11	145	40.0
165-316/26	12	150	40.7
165-317/26	13	155	41.5
165-318/26	14	160	42.0
165-319/26	15	165	43.0
165-320/26	16	170	43.5
165-321/26	18	180	44.5
165-322/26	20	190	45.0

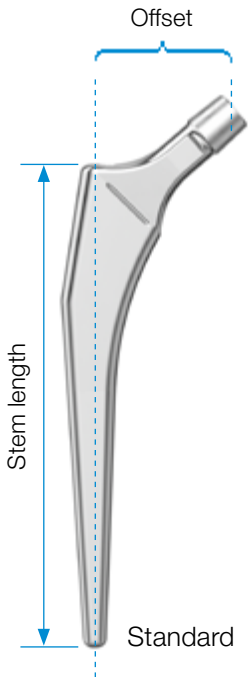


LCU Hip Prosthesis Stems, uncemented, lateralized type, + 7 mm offset

MAT Ti6Al4V, PoroLink, taper 12/14, CCD angle 125°

REF	Size	Length mm	Offset mm
165-412/26	8	115	45.0
165-413/26	9	130	45.5
165-414/26	10	140	46.2
165-415/26	11	145	47.0
165-416/26	12	150	47.7
165-417/26	13	155	48.5
165-418/26	14	160	49.0
165-419/26	15	165	50.0
165-420/26	16	170	50.5
165-421/26	18	180	51.5
165-422/26	20	190	52.0

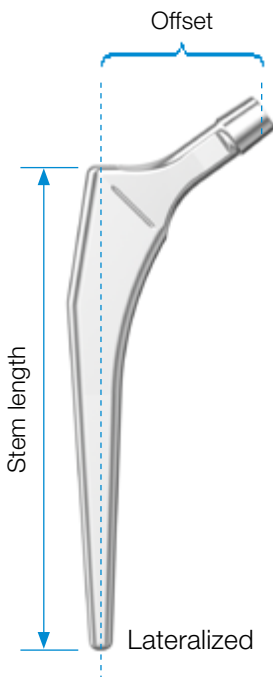
LCU Hip System, cemented



LCU Hip Prosthesis Stems, cemented, standard type

MAT CoCrMo, taper 12/14, CCD angle 130°

REF	Size	Length mm	Offset mm
165-512/26	8	115	38.0
165-513/26	9	130	38.5
165-514/26	10	140	39.2
165-515/26	11	145	40.0
165-516/26	12	150	40.7
165-517/26	13	155	41.5
165-518/26	14	160	42.0
165-519/26	15	165	43.0
165-520/26	16	170	43.5
165-521/26	18	180	44.5
165-522/26	20	190	45.0

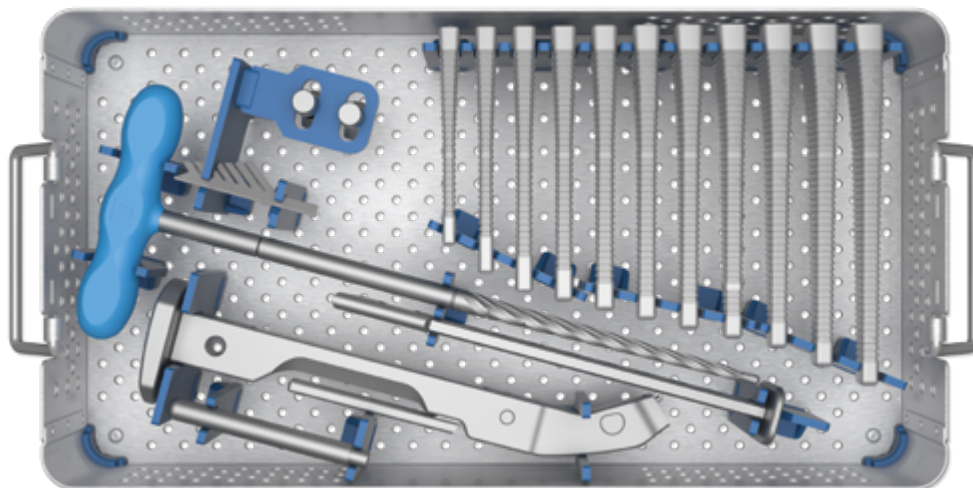


LCU Hip Prosthesis Stems, cemented, lateralized type, + 7 mm offset

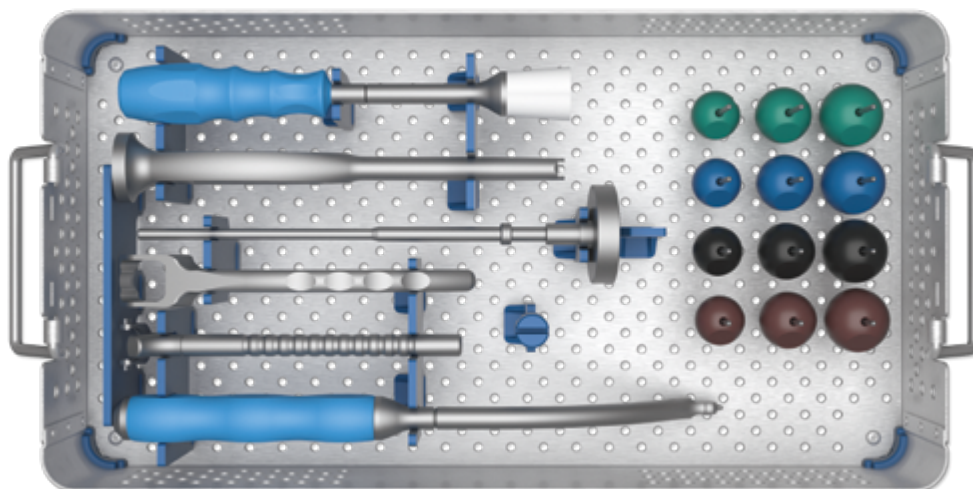
MAT CoCrMo, taper 12/14, CCD angle 125°

REF	Size	Length mm	Offset mm
165-612/26	8	115	45.0
165-613/26	9	130	45.5
165-614/26	10	140	46.2
165-615/26	11	145	47.0
165-616/26	12	150	47.7
165-617/26	13	155	48.5
165-618/26	14	160	49.0
165-619/26	15	165	50.0
165-620/26	16	170	50.5
165-621/26	18	180	51.5
165-622/26	20	190	52.0

Instrument Sets for LCU Hip System

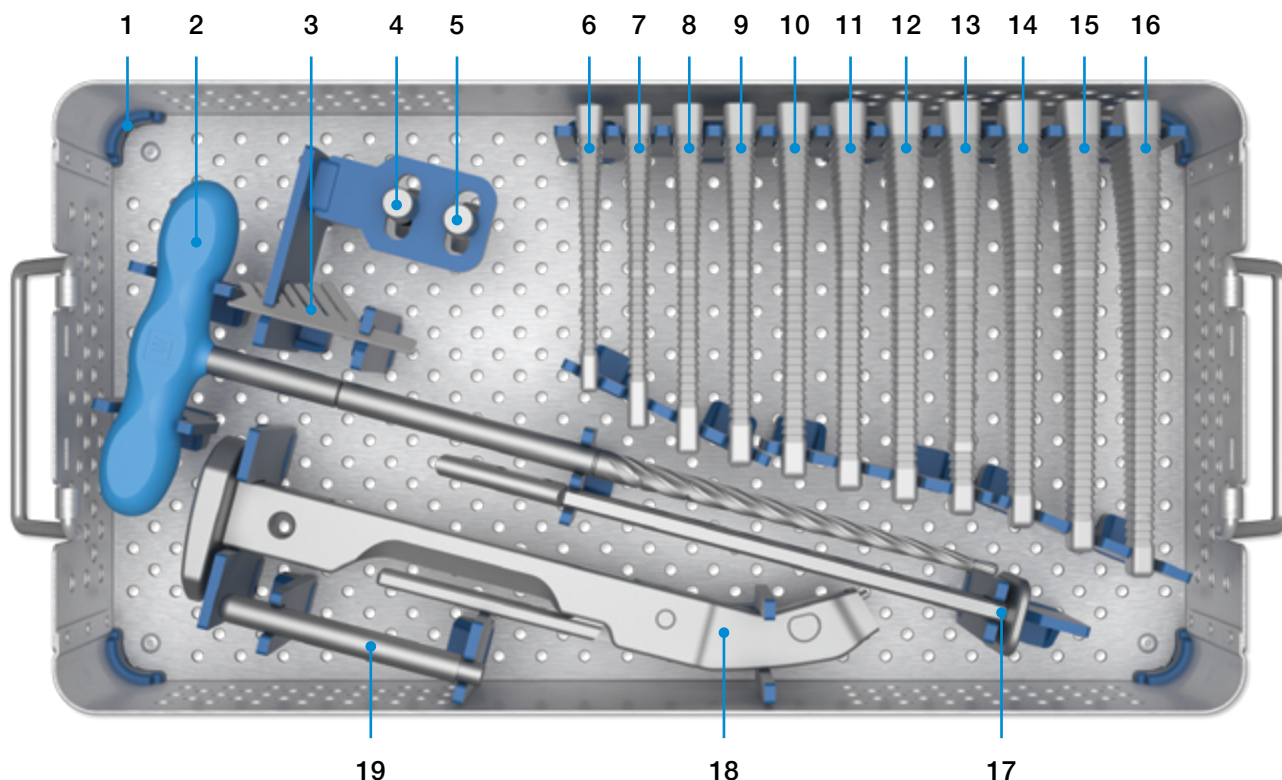


REF	Instrument Set for LCU Hip Prosthesis System
165-100/30	Instrument Set 1 , complete



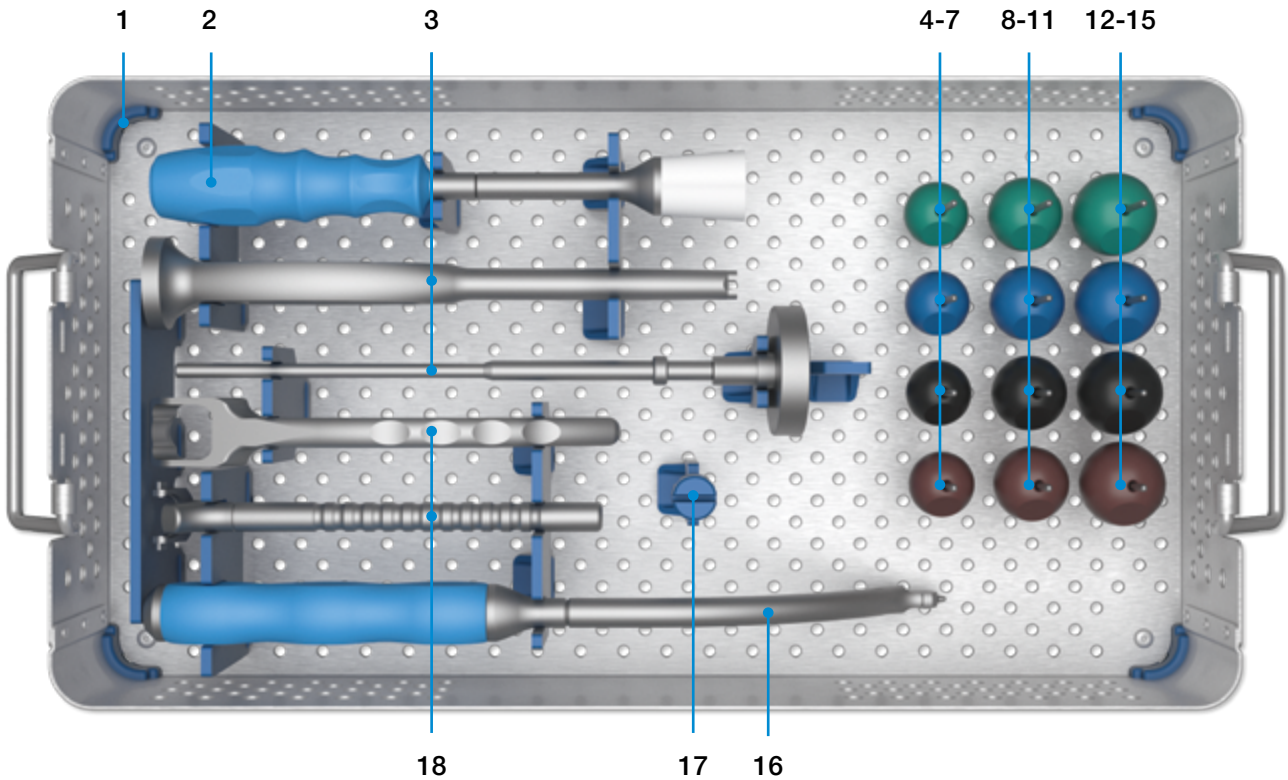
REF	Instrument Set for LCU Hip Prosthesis System
165-100/31	Instrument Set 2 , complete

Instrument Sets for LCU Hip System
165-100/30 Instrument Set 1, complete



1	165-100/10	Instrument Tray , empty, stainless steel, with lid
2	130-617	Femoral Canal Opener , stainless steel, 365 mm
3	175-310/05	Resection Guide , stainless steel
4	165-110/25	Trial Neck Segment , stainless steel, taper 12/14, CCD 125°, lateralized
5	165-110/30	Trial Neck Segment , stainless steel, taper 12/14, CCD 130°, standard
6	165-111/08	Bone Compressor , stainless steel, size 8
7	165-111/09	Bone Compressor , stainless steel, size 9
8	165-111/10	Bone Compressor , stainless steel, size 10
9	165-111/11	Bone Compressor , stainless steel, size 11
10	165-111/12	Bone Compressor , stainless steel, size 12
11	165-111/13	Bone Compressor , stainless steel, size 13
12	165-111/14	Bone Compressor , stainless steel, size 14
13	165-111/15	Bone Compressor , stainless steel, size 15
14	165-111/16	Bone Compressor , stainless steel, size 16
15	165-111/18	Bone Compressor , stainless steel, size 18
16	165-111/20	Bone Compressor , stainless steel, size 20
17	130-716	Box Chisel , stainless steel
18	130-394/01	Broach Handle , Offset, stainless steel
19	130-393/81	Positioning Guide for alignment of anteversion, stainless steel, 110 mm




165-100/31 Instrument Set 2, complete



	REF	Description
1	165-100/11	Instrument Tray , empty, stainless steel, with lid
2	175-360	Head Impactor with exchangeable plastic head, stainless steel / silicone, 242 mm
3	130-711	Positioner , stainless steel, 259 mm
4	175-928/11	Trial Head , radiopaque, taper 12/14, Ø 28 mm, Neck length short, green
5	175-928/12	Trial Head , radiopaque, taper 12/14, Ø 28 mm, Neck length medium, blue
6	175-928/13	Trial Head , radiopaque, taper 12/14, Ø 28 mm, Neck length long, black
7	175-928/14	Trial Head , radiopaque, taper 12/14, Ø 28 mm, Neck length extra long, brown
8	175-932/11	Trial Head , radiopaque, taper 12/14, Ø 32 mm, Neck length short, green
9	175-932/12	Trial Head , radiopaque, taper 12/14, Ø 32 mm, Neck length medium, blue
10	175-932/13	Trial Head , radiopaque, taper 12/14, Ø 32 mm, Neck length long, black
11	175-932/14	Trial Head , radiopaque, taper 12/14, Ø 32 mm, Neck length extra long, brown
12	175-936/11	Trial Head , radiopaque, taper 12/14, Ø 36 mm, Neck length short, green
13	175-936/12	Trial Head , radiopaque, taper 12/14, Ø 36 mm, Neck length medium, blue
14	175-936/13	Trial Head , radiopaque, taper 12/14, Ø 36 mm, Neck length long, black
15	175-936/14	Trial Head , radiopaque, taper 12/14, Ø 36 mm, Neck length extra long, brown
16	130-622/01	Impactor , curved, stainless steel / silicone
17	179-122/01	Taper Cap , PPSU, Assignment for 134-141/00, blue
18	134-141/00	Inserting Forceps with exchangeable taper cap, stainless steel, 200 mm

Additional Instruments

Compatible Broach Handles

<p>130-394/16 Broach Handle, Extra Offset</p>	
<p>130-394/02 Broach Handle, Dual Offset, right 130-394/03 Broach Handle, Dual Offset, left</p>	
<p>130-394/14 Broach Handle, Anterior, 40°</p>	

130-716/02 Modular Box Chisel

can be connected to any of the Broach Handles and used as an alternative to monobloc Box Chisel for femoral canal opening.



130-713 Impactor, 244 mm



130-610/02 Replacement Plastic Head

for the Head Impactor 175-360



Colored Plastic Trial Heads, taper 12/14 mm

REF	Ø (mm)	Head length	Head length (mm)	Color	Qty
132-926/01	26	short	-3.5	green	1
132-926/02	26	medium	0.0	blue	1
132-926/03	26	long	+4.0	black	1

Accessories

X-ray templates for LCU Hip System

CCD angle 125°/130° (lateralized, standard type)

110% actual size, set of 11 sheets

REF	X-ray templates for lateralized and standard type
165-140/35	LCU Hip Prosthesis Stems, uncemented, for prosthesis heads of Ø 26 mm
165-141/35	LCU Hip Prosthesis Stems, uncemented, for prosthesis heads of Ø 28 mm
165-142/35	LCU Hip Prosthesis Stems, uncemented, for prosthesis heads of Ø 32 mm
165-143/35	LCU Hip Prosthesis Stems, uncemented, for prosthesis heads of Ø 36 mm
165-144/35	LCU Hip Prosthesis Stems, uncemented, for prosthesis heads of Ø 40 mm
165-150/00	LCU Hip Prosthesis Stems, cemented

INFORMATION:

LCU Hip Stems can be combined with prostheses heads up to +10.5 mm additional neck length.

Instructions for Cleaning and Maintenance

Specific instructions for instruments are available on request from info@link-ortho.com

Literature



For more information please register for our LINK Media Library (link-ortho.com)

Please note the following regarding the use of our implants:

Follow the instructions for use!

For detailed product information, including indications and contraindications, precautions and warnings, etc. please consult the product's Instructions for Use (IFU) prior to use.



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