MATHYS
European Orthopaedics

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Surgical technique / Product information

stellaris

***Preservation** in motion*

Building on our heritage
Moving technology forward
Step by step with our clinical partners
Towards a goal of preserving mobility

***Preservation** in motion*

As a Swiss company, Mathys is committed to this guiding principle and pursues a product portfolio with the goal of further developing traditional philosophies with respect to materials or design in order to address existing clinical challenges. This is reflected in our imagery: traditional Swiss activities in conjunction with continuously evolving sporting equipment.

Table of contents

Remark
Please make yourself familiar with the handling of the instruments, the product-related surgical technique and the warnings, the safety notes as well as the recommendations of the instruction leaflet before using an implant manufactured by Mathys Ltd Bettlach. Make use of the Mathys user training and proceed according to the recommended surgical technique.

Introduction

Wagner philosophy

The cone stem based on the Wagner philosophy is designed for uncemented fixation in difficult bone conditions at the proximal end of the femur. The surface of the cone stem is rough-blasted, which, together with the characteristic shape, promotes osseous ongrowth over a large area. [1]

The taper angle and the eight longitudinal ribs that are arranged on the circumference of the stem are typical characteristics of this philosophy. The presence of the ribs results in high contact pressure between the stem and endosteal bone, with the aim of achieving rotational stability. [1, 2] The taper achieves taper-lock axial or vertical stability for the stems. [2] In addition to providing rotational stability, the sharp longitudinal ribs of the stem are also beneficial for osseous accretion. [3]

stellaris

stellaris is an uncemented hip stem system. In combination with a prosthetic head and acetabular cup component (cemented/uncemented) or native acetabulum, it forms a system for hip arthroplasty intended to restore the function of the hip joint and/or relieve pain in skeletally mature patients in primary and revision surgery. It follows the Wagner cone stem philosophy and aims at reconstruction of the hip joint function in difficult anatomical femoral conditions.
The stellaris system consists of the stellaris and stellaris Long versions, both available in a standard offset version with a CCD angle of 133° as well as a lateral offset version with a CCD angle of 126°.
To provide a wide range of offset options allowing adequate restoration of biomechanical parameters, [5] the whole system offers a femoral offset range from 31.2 mm for size 15 up to 50.5 mm for size 29 lateral.

The complete stellaris system with a total of 28 stems is available in 20 sizes for stellaris and 8 sizes for stellaris Long (Fig. 1).

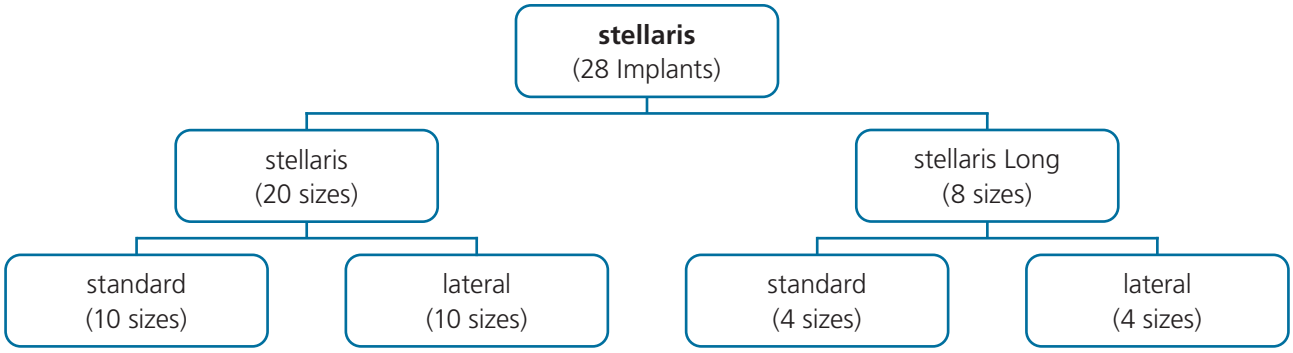


Fig. 1 stellaris system overview

The philosophy and design of the implant with its round cross-sectional area allow free adjustment of the femoral anteversion. Use of the stellaris anteversion adapter is highly recommended, even in routine cases, to avoid implantation with excessive anteversion.

Rib design

Depending on the diameter of the stem, the height of the ribs varies from 1 to 2.5 mm for the stellaris stems and from 0.95 to 2.45 mm for the stellaris Long stems.

Instrumentation

The medullary canal is prepared with a series of conical reamers of increasing size, instead of the rasps used for conventional femoral stems. The medullary cavity is pre-reamed in a conical shape to give primary stability to the implant, which is a necessary prerequisite for osseointegration of the stem.

The proximal part of the reamer has a taper of 5° which is similar to the final implant. In the distal part, the angle is reduced from 5° to 2° to prevent early fixation of the stem in that area. The reamer is slightly longer than the implant is, in order to prevent early blocking.

The level of the centre of rotation is marked on the reamer as a reference.

The dimensions of the trial stem are identical to the final prosthesis, except that there are only four ribs. This gives sufficient stability for the trial phase but leaves enough bone for secure fixation of the final implant.

The special slot at the proximal shoulder of the stem combined with the stellaris impactor allows positioning and guiding of the stem during impaction. By using the special stellaris anteversion adapter, the anteversion can be defined intraoperatively.

1. Indications and contraindications

Indications

- Primary or secondary osteoarthritis of the hip
- Femoral head and femoral neck fractures
- Necrosis of the femoral head
- Revisions surgery

Contraindications

- Presence of factors jeopardising stable anchoring of the implant:
  – Bone loss and/or bone defects
  – Insufficient bone substance
  – Medullary canal not suitable for the implant
- Presence of factors preventing osseointegration:
  – Irradiated bone (exception: preoperative irradiation for ossification prophylaxis)
  – Devascularisation
- Local and general infection
- Hypersensitivity to any of the materials used
- Severe soft tissue, nerve or vessel insufficiency that jeopardise the function and long-term stability of the implant
- Patients for whom a different type of reconstruction surgery or treatment is likely to be successful

For further information, please refer to the instructions for use or ask your Mathys representative.

2. Preoperative planning

Preoperative templating can be performed on conventional radiographs or with a digital planning system. The main goal is to plan the appropriate implant size and position to restore the individual biomechanics of the hip joint. Thus, potential problems can be anticipated even before surgery. In most cases, restoration of hip biomechanics can be achieved by reconstructing the original hip center of rotation, the leg length and the femoral and acetabular offset. [6]

Furthermore, the preoperative planning serves as a template in the context of intraoperative balancing by means of fluoroscopic monitoring. [7]

It is recommended to document the preoperative planning in the patient's file.

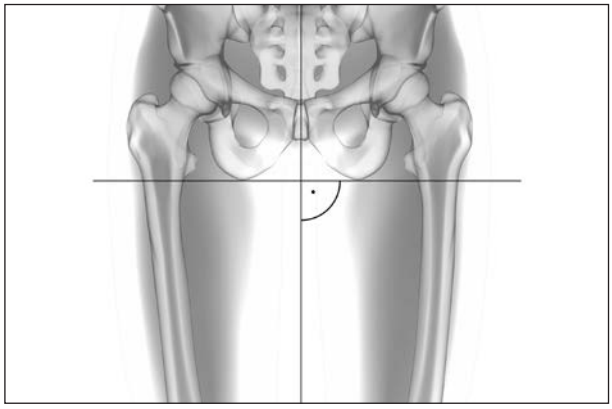


Fig. 2

Hip templating can best be performed on a pelvic radiograph taken in standing position. The radiograph needs to be symmetrical, centred on the symphysis of the pubis and with both femora in about 20° of internal rotation. The magnification scale of the radiograph can be controlled with a calibration object or by using a fixed film-to-focus distance and positioning the patient at a fixed distance between film and X-ray source (Fig. 2).

Remark
When the affected hip is severely damaged, templating on the unaffected side and mirroring of the planning to the affected side should be considered. [6]

Estimation of the acetabular offset
The rotation centres of the healthy (A) and affected (A') hip are each defined as the centre of a circle that fits the respective femoral head or the acetabular cavity.
A first, horizontal line is drawn tangent to both ischial tuberosities, and a second, perpendicular line is plotted through the centre of the symphysis of the pubis.

Remark
In case of leg length correction, the adjustment of the leg length can already be considered now, using the ischial tuberosities as a reference.

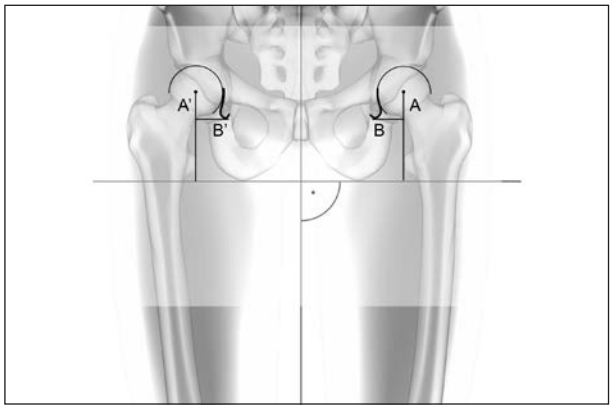


Fig. 3

The acetabular offset can be defined as the distance between Köhler's teardrop (B or B') and a vertical line through the hip rotation centre (A or A') and parallel to the symphysis line (Fig. 3).

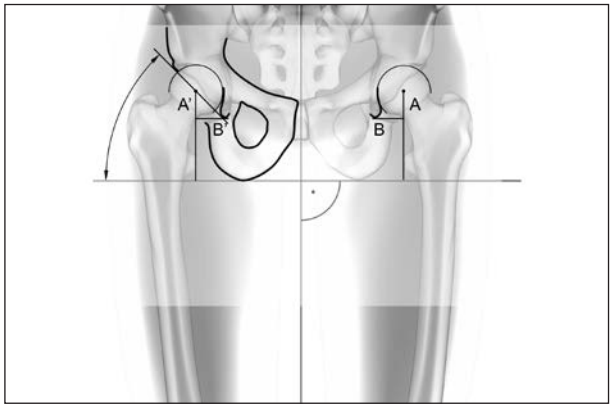


Fig. 4

Planning of the cup

The cup position in relation to the pelvis must take into account the acetabular contours, the hip rotation centre, Köhler's teardrop and the required cup inclination angle (Fig. 4).

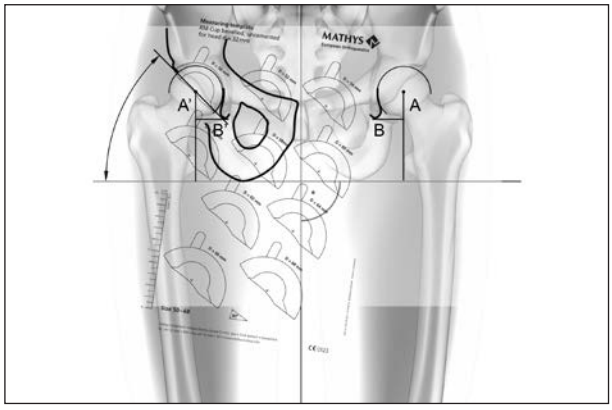


Fig. 5

To find an appropriate cup size, various cup templates are positioned at the level of the acetabular cavity, aiming to restore the native hip rotation centre while establishing sufficient bone contact, both at the level of the acetabular roof and at the level of Köhler's teardrop (Fig. 5).

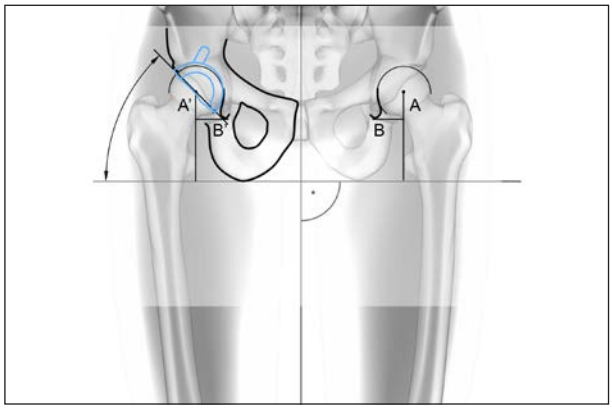


Fig. 6

The cup is positioned into the acetabulum. The implant position is established in relation to the anatomical landmarks (acetabular roof, Köhler's teardrop), and the implantation depth is marked down (Fig. 6).

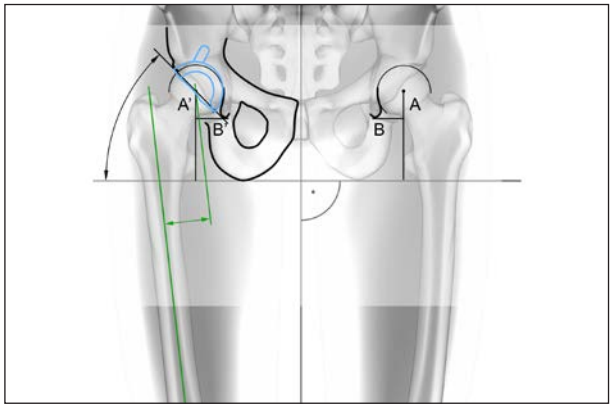


Fig. 7

Estimation of the femoral offset

The femoral offset is defined as the smallest distance between the central longitudinal axis of the femur and the hip rotation centre (Fig. 7).

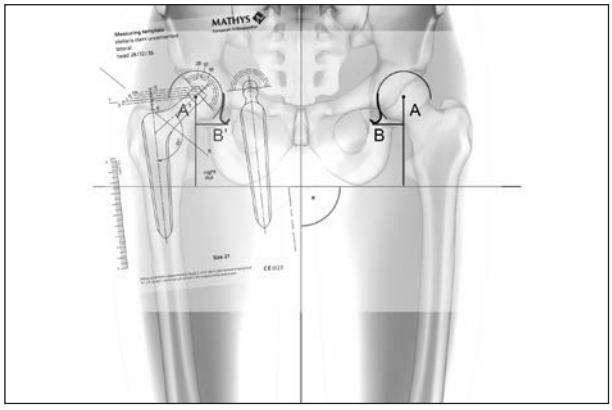


Fig. 8

Planning of the stem

Determination of the stem size using the measuring templates on the femur to be operated on. The template is to be aligned to the centre of rotation and the central axis (Fig. 8).

Remark

It is important that the configuration of the femur allows close contact between the middle third of the stem and the cortex, and not just the tip of the stem fits tightly in the medullary cavity (Fig. 8).

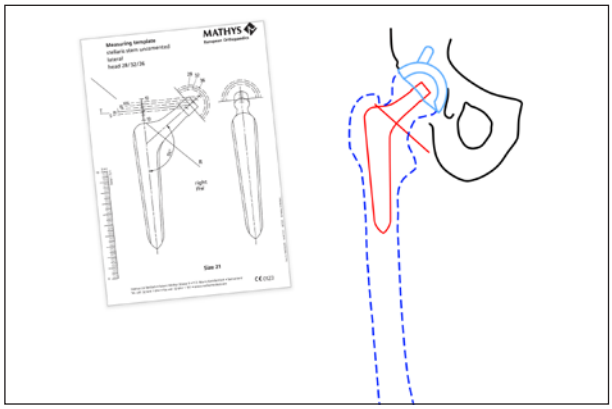


Fig. 9

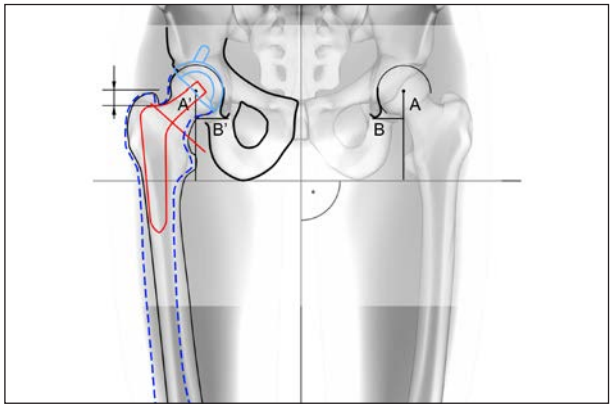


Fig. 10

Remark

The outline of the planning template corresponds exactly to the dimensions of the implant.
Selection of the correct stem diameter is therefore particularly important to reduce the risk of subsidence. It must be remembered that reaming removes a thin layer of bone, and the sharp longitudinal ribs cut slightly into the bone during insertion. The outline of the prosthetic stem on the planning template must therefore overlap the inner outline of the cortex in the region of the middle third of the stem by 1 mm on each side, and the implant size should be planned in this area of the medullary cavity.

Remark

The complete stellaris system is available in 2 versions: stellaris (available as standard (10 sizes) and lateral offset (10 sizes)) as well as stellaris Long (available as standard (4 sizes) and lateral offset (4 sizes)).

A detailed information about the differences in offset and stem length can be found in chapter «*Implants*».

On the planning sheet, the matching stem is delineated in the form of lines with the measuring template in the same abduction/adduction position as the femur of the healthy side (Fig. 9).

The femur to be operated on is plotted over the selected stem.

The distances between the proximal end of the stem cone and the lesser trochanter and between the shoulder and the greater trochanter are measured.

Plot the resection plane and determine the intersection between the trochanteric massive and the lateral demarcation of the prosthesis stem (Fig. 10).

3. Surgical technique

The stellaris stem can be implanted through conventional as well as through minimally invasive approaches. The choice of a specific approach should be based on patient anatomy, personal experience and preference of the operating surgeon.

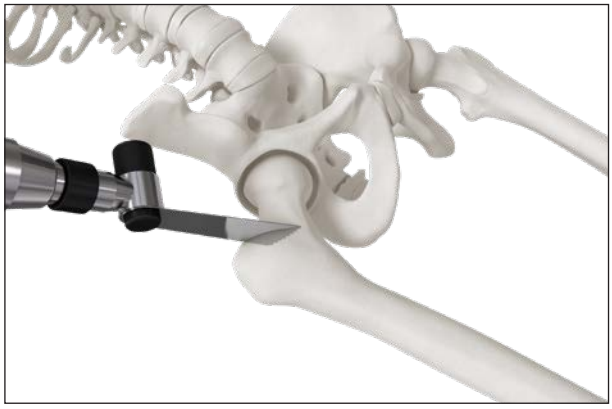


Fig. 11

Femoral osteotomy
The femoral neck resection level is related to the distance between the lesser and the greater trochanter and marked according to the preoperative planning (Fig. 11).

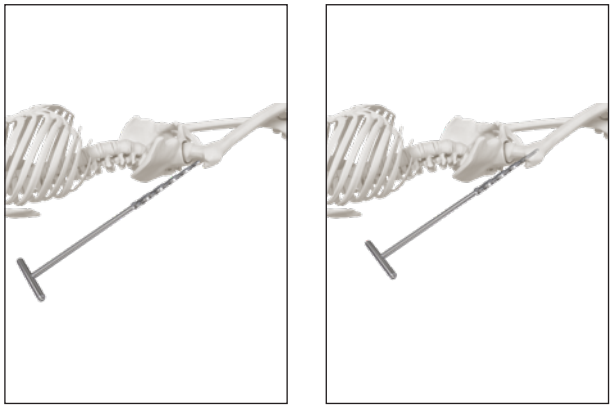


Fig. 12

Remark
Before resection of the femoral head, the medullary canal can be opened with the first reamer by hand in order to already define the axis of the femoral canal (Fig. 12).

Remark
When anatomical conditions prevent head removal after a single neck cut, it is advisable to perform a double osteotomy and remove a fragment of the femoral neck. Then the femoral head is removed with a femoral head extractor.

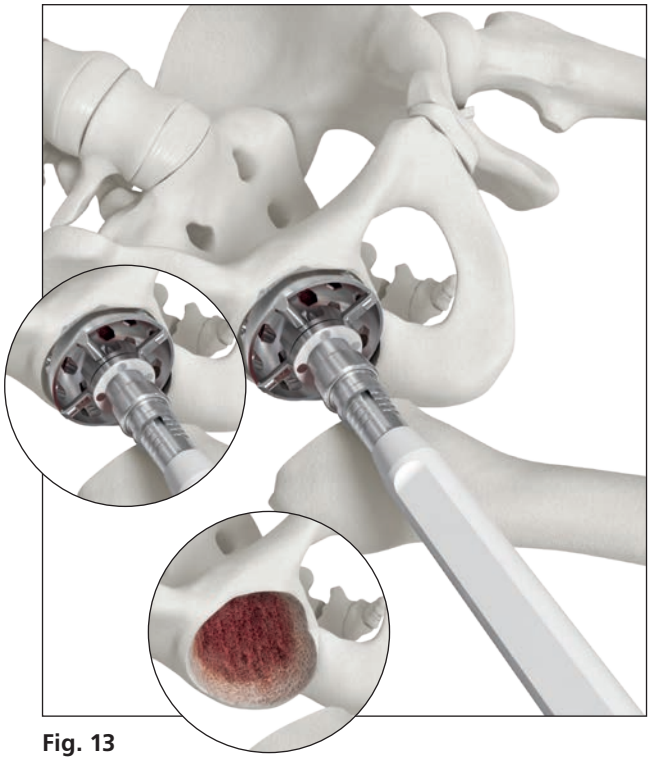


Fig. 13

The preparation of the acetabulum and implantation of the cup are to be performed depending on the preference of the surgeon (Fig. 13).

Remark
The implantation of the cup is described in a separate surgical technique, which can be downloaded from the Mathys Ltd Bettlach website or requested from your local Mathys representative.

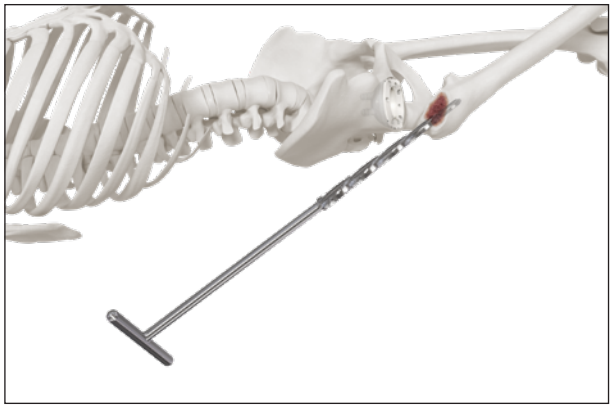


Fig. 14

Preparation of the femoral canal
Open the femoral canal with a hollow chisel or a sharp spoon in order to remove bone from the medial portion of the greater trochanter while taking into account the planned anteversion.

Remark
The opening of the femoral canal should be done carefully so that there is no fracture of the greater trochanter.

Afterwards, the first reamer should be inserted deep enough to find the central axis of the femoral canal and avoid malposition of the subsequent reamers and final implant (Fig. 14).

Remark
To make sure that there are no bone barriers to further reaming in the medullary canal, a sharp spoon can be used.

Remark
The reaming procedure may be done only by hand.

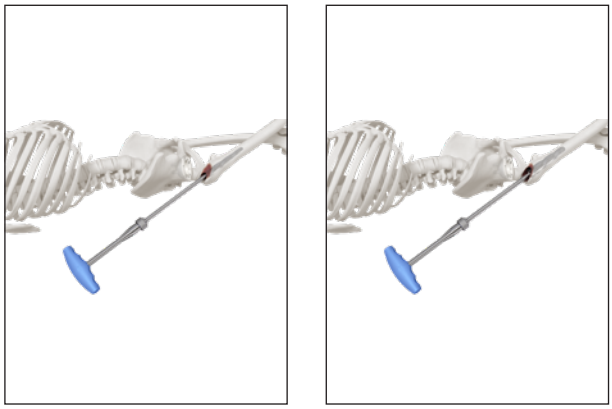


Fig. 15

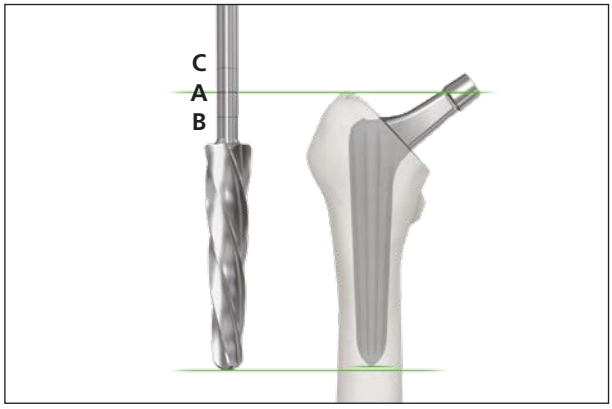


Fig. 16

The femoral medullary canal is reamed step by step with the stellaris reamers in the longitudinal direction of the femur until noticeable resistance is encountered when scraping the cortical wall (Fig. 15).

Remark
Correct fit of the final reamer in the femur can additionally be checked under image intensification.

As the stellaris Long stems are 25 mm longer than the basic stellaris implants, the corresponding stellaris Long reamers must be used.

Before starting with the stellaris Long reamers it is recommended to start reaming with sizes 20 and 21 while reaming the femoral canal more distally to prepare the distal bed for the stellaris Long reamers.

To determine the stem size on the final reamer, refer to the marking on the reamer at the height of the greater trochanter (Fig. 16).
The broad laser marking (A) on the reamer represents the level of the centre of rotation of the femoral head of the implant with the same size (Fig. 16).

The depth of the reamer can be additionally checked with a Kirschner wire placed on the tip of the greater trochanter.

Remark
In case the lower mark (B) or upper mark (C) is at the level of the trochanteric shoulder, the next smaller size (for B) or next bigger size implant (for C) has to be chosen.

Example
stellaris reamer 18 corresponds to implant size 18. If it is only possible to ream down to the lower mark B with the stellaris reamer, the next smaller size (size 17) should be chosen. If it is possible to ream up to the upper mark C with the stellaris reamer, the next bigger reamer size (size 19) should be chosen.

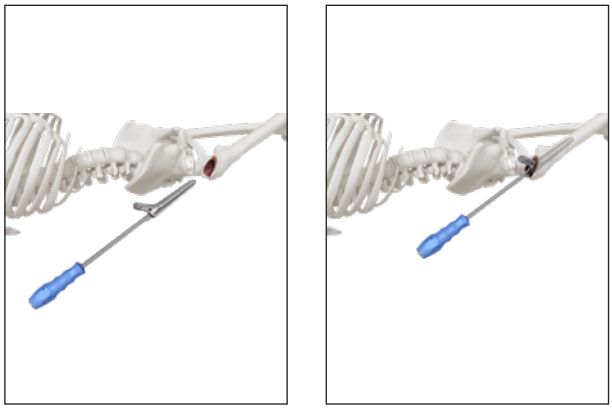


Fig. 17

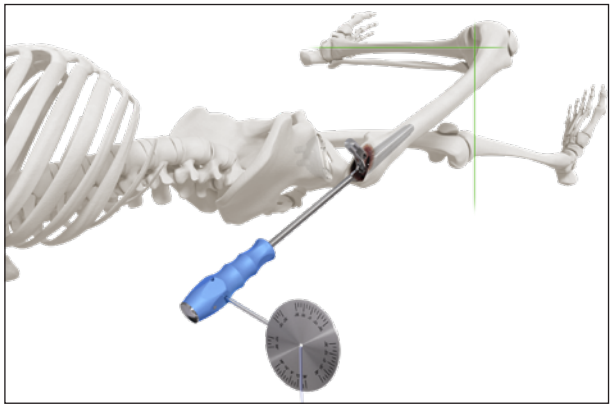


Fig. 18

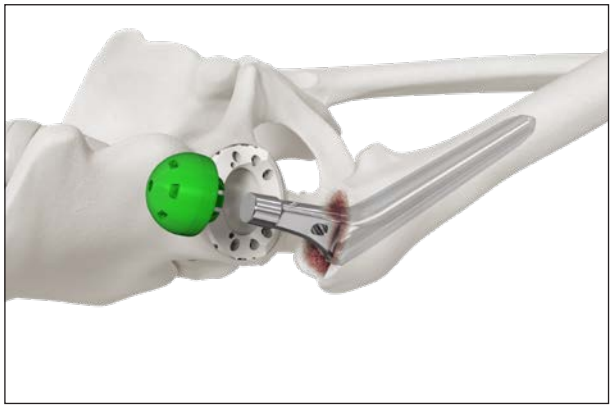


Fig. 19

Trial reduction

The size of the stellaris trial stem corresponds to the size of the reamer used last. Insert the trial stem into the femur with the impactor, which is placed in the corresponding slot of the stem shoulder until it is properly seated. At the same time, check for the desired anteversion (Fig. 17).

Remark

When there is severe anteversion of the hip, make sure that the prosthesis is placed in the correct position so that the neck of the implant does not touch the rim of the cortex of the femoral neck. If necessary, some bone may be removed with a chisel until there is a sufficient gap between the neck of the prosthesis and the bone.

Optionally, the anteversion angle can be determined with the stellaris adapter for anteversion. The adapter is fixed on the impactor. The angle is shown by the previously fixed suture and a weight (e. g. a clamp) (Fig. 18).

The anteversion angle is determined using the tibial axis as a reference. If the patient is in supine position, the tibia has to be aligned horizontally. The value shown on the stellaris adapter for anteversion is a relative value.

The selected trial head, whose diameter corresponds to the inner diameter of the cup, is positioned on the taper of the trial stem (Fig. 19).

Remark

Trial heads for trial reductions are available in diameters 28 mm, 32 mm and 36 mm, each with S, M, L, XL and XXL neck lengths.
An overview of the neck lengths of the trial heads can be found in the chapter «Instruments».

Before trial reduction, it is recommended to compare the position of the rotation centre of the trial head and the insertion depth of the trial implant with the preoperative templating measurements.

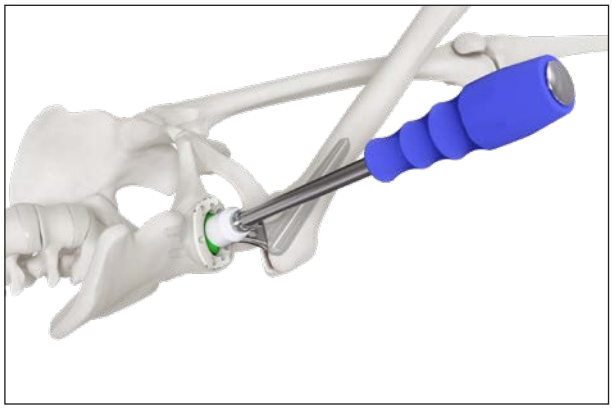


Fig. 20

Trial reduction with the trial stem (Fig. 20).

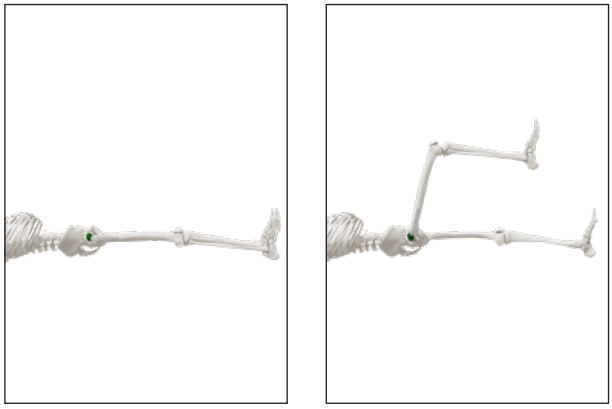


Fig. 21

After trial reduction, take the hip joint through a full range of motion. Look for soft tissue and neck-cup impingement and evaluate the tendency of the implant to dislocate during internal and external rotation in flexion and extension. Make also sure the tension in the soft tissues is appropriate (Fig. 21).

Remark

At this stage, it is still possible to modify the anteversion and offset as well as the neck length of the trial head if needed.

Remark

Correct fit of the trial implant in the femur can additionally be checked under image intensification.

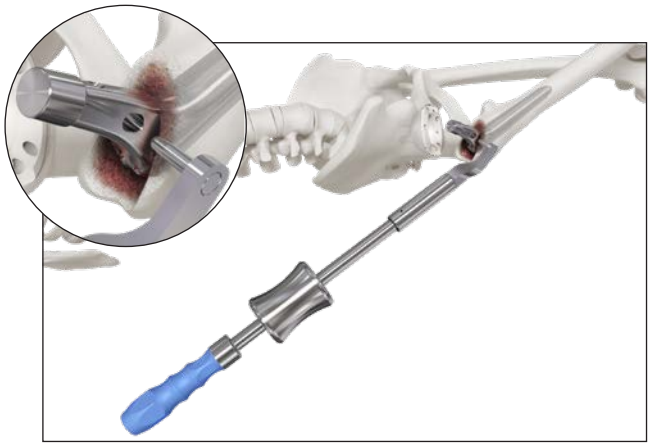


Fig. 22

Removal of the trial stem with the stem extractor in combination with the modular hook. Depending on the surgical approach and the patient positioning, a left or right hook can be chosen (Fig. 22).

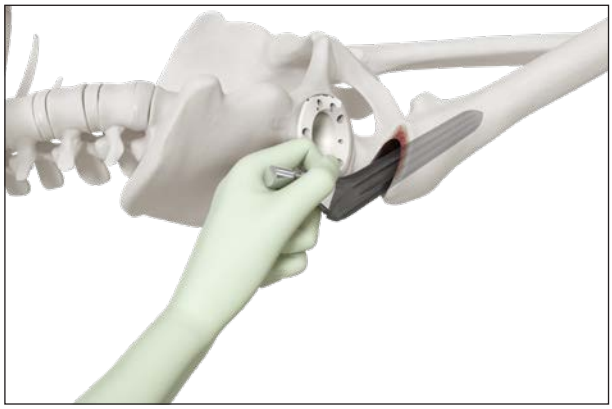


Fig. 23

Insertion of the final stem
Insert the prosthesis of appropriate size by hand until resistance can be felt (Fig. 23).

Remark
During insertion of the final implant, care should be taken to align the prosthesis already in the desired anteversion.

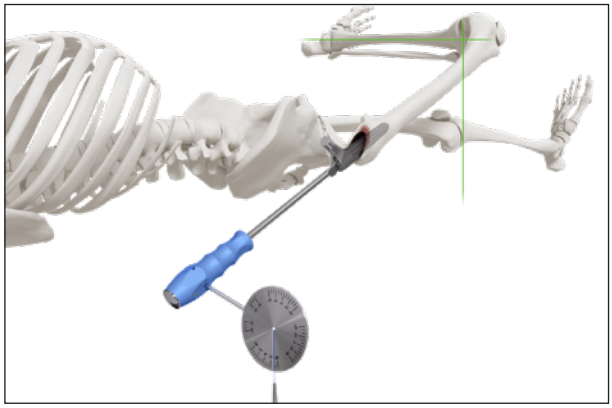


Fig. 24

Afterwards, the stellaris impactor is inserted into the corresponding slot in the shoulder of the implant. Using the instrument, the prosthesis is rotated into the desired final anteversion and impacted into its definitive position with a few moderate hammer strokes (Fig. 25).

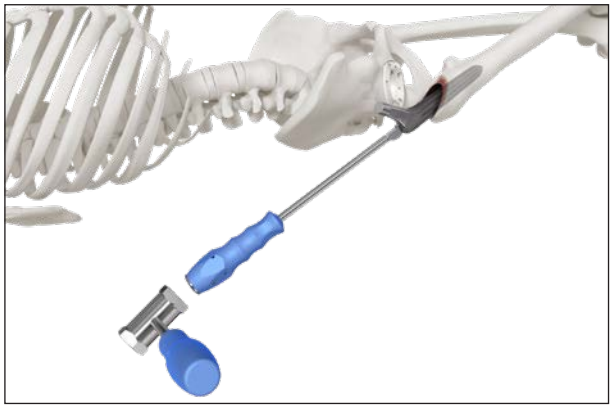


Fig. 25

Remark
Alternatively, the stellaris adapter for anteversion can be fixed on the handle of the impactor to reproduce the anteversion chosen with the trial stem before (Fig 24).

It is mandatory to use the stellaris Impactor 56.02.3816 only for the following implants 56.20.3190–56.20.4290.

It is mandatory to use the stellaris Impactor NG 51.34.0864 only for the following implants 56.20.3150NG–56.20.4290NG.

Item no.	Description
56.02.3816	stellaris Impactor

Item no.	Description
51.34.0864	stellaris impactor NG

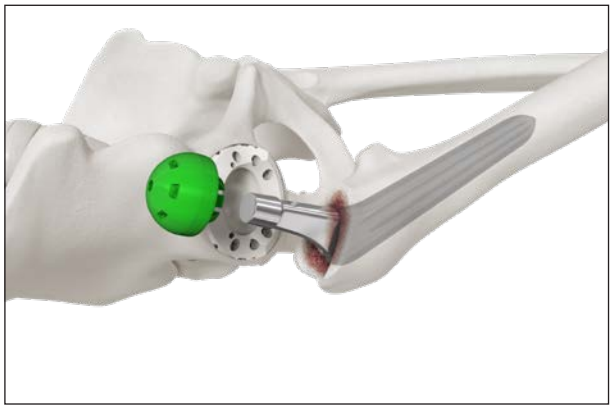


Fig. 26

Remark
Correct fit of the final implant in the femur can additionally be checked under image intensification, using the preoperative planning for comparison.

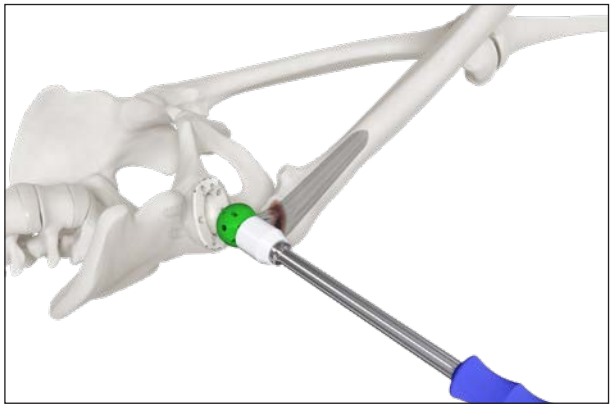


Fig. 27

Remark
Make sure that the neck of the prosthesis does not touch the rim of the cortex of the femoral neck. If necessary, some bone may be removed with a chisel, until there is a gap between the neck of the prosthesis and the bone.

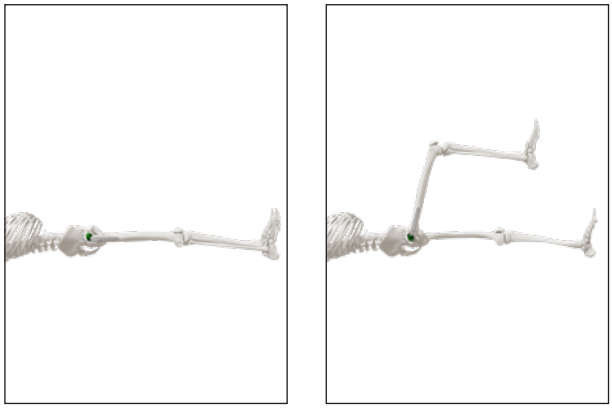


Fig. 28

Once the implant is fully seated in the femoral canal, trial heads of different lengths for testing the range of motion and ligament tension can be used to perform a final trial reduction with the implant in place (Figs. 26–28).

Remark
At this stage, only the neck length of the prosthetic head can still be modified if needed.

Remark
An overview of the neck lengths of heads and trial heads can be found in the chapter «Implants» and «Instruments».

Remark
The head diameter must always match the inner diameter of the cup.

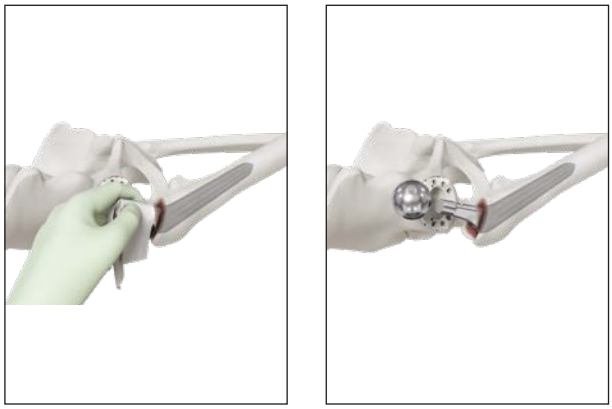


Fig. 29

To avoid complications at the stem / head interface, the stem cone needs to be dry and free of any foreign matter (e. g. tissue fragments, bone or cement particles) before assembling the final head (Fig. 29).

The stellaris stem cannot be combined with the Dual Mobility cup distributed by Mathys (DS Evolution).

Fig. 30

Care must be taken that the joint space is free from any foreign matter before reduction.

Reducing the joint (Fig. 30).

Remark
Correct fit of the implants can additionally be checked under image intensification.

Depending on the approach, the muscle insertions are reattached, and the wound is closed layer by layer.

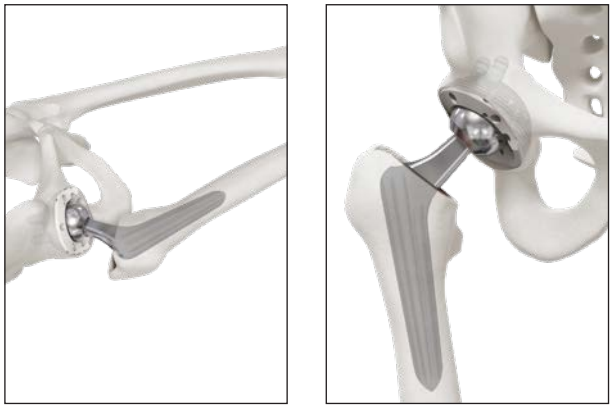


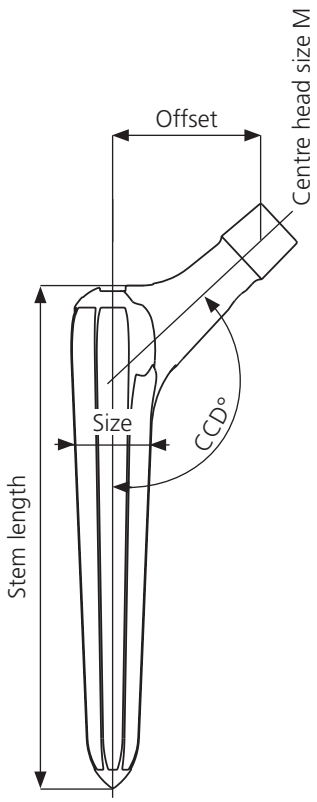
Fig. 31

Removal of the stellaris stem
In case of revision, the stellaris stem can be removed with the curved extractor or a universal stem extraction instrument.

For further information about stem revision and extraction instruments, contact your local Mathys representative.

In case of an intra-operative removal of a final stem implant, re-implantation of the same stem is not allowed – a new stem must be used.

4. Implants



Porfolio stellaris system

Version	Type	Item no.	CCD angle	Size	Stem length (in mm)	Offset (in mm)
Standard	Standard Offset	56.20.3150NG	133°	15	117.5	31.2
		56.20.3160NG	133°	16	117.5	32.4
		56.20.3170NG	133°	17	117.5	33.4
		56.20.3180NG	133°	18	117.5	34.5
		56.20.3190	133°	19	117.5	35.7
		56.20.3200	133°	20	117.5	36.8
		56.20.3210	133°	21	117.5	37.6
		56.20.3220	133°	22	117.5	38.4
		56.20.3230	133°	23	117.5	39.2
		56.20.3240	133°	24	117.5	39.9
	Lateral Offset	56.20.4150NG	126°	15	117.5	36.6
		56.20.4160NG	126°	16	117.5	38
		56.20.4170NG	126°	17	117.5	39.2
		56.20.4180NG	126°	18	117.5	40.4
		56.20.4190	126°	19	117.5	41.8
		56.20.4200	126°	20	117.5	43.1
		56.20.4210	126°	21	117.5	44
		56.20.4220	126°	22	117.5	44.9
		56.20.4230	126°	23	117.5	45.7
		56.20.4240	126°	24	117.5	46.5
Long	Standard Offset	56.20.3245	133°	24.5	142.5	40.3
		56.20.3260	133°	26	142.5	41.4
		56.20.3275	133°	27.5	142.5	42.5
		56.20.3290	133°	29	142.5	43.6
	Lateral Offset	56.20.4245	126°	24.5	142.5	46.9
		56.20.4260	126°	26	142.5	48.1
		56.20.4275	126°	27.5	142.5	49.3
		56.20.4290	126°	29	142.5	50.5

stellaris standard

Item no.	Description
56.20.3150NG	stellaris Stem std. 15 uncem.
56.20.3160NG	stellaris Stem std. 16 uncem.
56.20.3170NG	stellaris Stem std. 17 uncem.
56.20.3180NG	stellaris Stem std. 18 uncem.
56.20.3190	stellaris Stem std. 19 uncem.
56.20.3200	stellaris Stem std. 20 uncem.
56.20.3210	stellaris Stem std. 21 uncem.
56.20.3220	stellaris Stem std. 22 uncem.
56.20.3230	stellaris Stem std. 23 uncem.
56.20.3240	stellaris Stem std. 24 uncem.

Material: Ti6Al4V
Cone: 12/14
CCD-angle: 133°

stellaris lateral

Item no.	Description
56.20.4150NG	stellaris Stem lat. 15 uncem.
56.20.4160NG	stellaris Stem lat. 16 uncem.
56.20.4170NG	stellaris Stem lat. 17 uncem.
56.20.4180NG	stellaris Stem lat. 18 uncem.
56.20.4190	stellaris Stem lat. 19 uncem.
56.20.4200	stellaris Stem lat. 20 uncem.
56.20.4210	stellaris Stem lat. 21 uncem.
56.20.4220	stellaris Stem lat. 22 uncem.
56.20.4230	stellaris Stem lat. 23 uncem.
56.20.4240	stellaris Stem lat. 24 uncem.

Material: Ti6Al4V
Cone: 12/14
CCD-angle: 126°

stellaris long standard

Item no.	Description
56.20.3245	stellaris Long Stem std. 24.5 uncem.
56.20.3260	stellaris Long Stem std. 26 uncem.
56.20.3275	stellaris Long Stem std. 27.5 uncem.
56.20.3290	stellaris Long Stem std. 29 uncem.

Material: Ti6Al4V
Cone: 12/14
CCD-angle: 133°

stellaris long lateral

Item no.	Description
56.20.4245	stellaris Long Stem lat. 24.5 uncem.
56.20.4260	stellaris Long Stem lat. 26 uncem.
56.20.4275	stellaris Long Stem lat. 27.5 uncem.
56.20.4290	stellaris Long Stem lat. 29 uncem.

Material: Ti6Al4V
Cone: 12/14
CCD-angle: 126°

Attention
Do only use the stellaris Impactor (56.02.3816) for the following implants 56.20.3190–56.20.4290.

Do only use the stellaris Impactor NG (51.34.0864) for the following implants 56.20.3150NG–56.20.4290NG.

Femoral Head, Stainless Steel

Item no.	Outside diameter	Neck length	
54.11.1031	22.2 mm	S	-3 mm
54.11.1032	22.2 mm	M	0 mm
54.11.1033	22.2 mm	L	+3 mm
2.30.410	28 mm	S	-4 mm
2.30.411	28 mm	M	0 mm
2.30.412	28 mm	L	+4 mm
2.30.413	28 mm	XL	+8 mm
2.30.414	28 mm	XXL	+12 mm
2.30.400	32 mm	S	-4 mm
2.30.401	32 mm	M	0 mm
2.30.402	32 mm	L	+4 mm
2.30.403	32 mm	XL	+8 mm
2.30.404	32 mm	XXL	+12 mm

Material: FeCrNiMnMoNbN
Cone: 12/14 mm

Femoral Head, CoCrMo

Item no.	Outside diameter	Neck length	
52.34.0125	22.2 mm	S	-3 mm
52.34.0126	22.2 mm	M	0 mm
52.34.0127	22.2 mm	L	+3 mm
2.30.010	28 mm	S	-4 mm
2.30.011	28 mm	M	0 mm
2.30.012	28 mm	L	+4 mm
2.30.013	28 mm	XL	+8 mm
2.30.014	28 mm	XXL	+12 mm
2.30.020	32 mm	S	-4 mm
2.30.021	32 mm	M	0 mm
2.30.022	32 mm	L	+4 mm
2.30.023	32 mm	XL	+8 mm
2.30.024	32 mm	XXL	+12 mm
52.34.0686	36 mm	S	-4 mm
52.34.0687	36 mm	M	0 mm
52.34.0688	36 mm	L	+4 mm
52.34.0689	36 mm	XL	+8 mm
52.34.0690	36 mm	XXL	+12 mm

Material: CoCrMo
Cone: 12/14 mm

Femoral Head, ceramys

Item no.	Outside diameter	Neck length	
54.47.0010	28 mm	S	-3.5 mm
54.47.0011	28 mm	M	0 mm
54.47.0012	28 mm	L	+3.5 mm
54.47.0110	32 mm	S	-4 mm
54.47.0111	32 mm	M	0 mm
54.47.0112	32 mm	L	+4 mm
54.47.0113	32 mm	XL	+8 mm
54.47.0210	36 mm	S	-4 mm
54.47.0211	36 mm	M	0 mm
54.47.0212	36 mm	L	+4 mm
54.47.0213	36 mm	XL	+8 mm

Material: ZrO_2-Al_2O_3
Cone: 12/14 mm

The ceramys femoral heads can be only combined with Mathys polyethylene cups and inlays, or Mathys ceramic inlays.

Femoral Head, symarec

Item no.	Outside diameter	Neck length	
54.48.0010	28 mm	S	-3.5 mm
54.48.0011	28 mm	M	0 mm
54.48.0012	28 mm	L	+3.5 mm
54.48.0110	32 mm	S	-4 mm
54.48.0111	32 mm	M	0 mm
54.48.0112	32 mm	L	+4 mm
54.48.0113	32 mm	XL	+8 mm
54.48.0210	36 mm	S	-4 mm
54.48.0211	36 mm	M	0 mm
54.48.0212	36 mm	L	+4 mm
54.48.0213	36 mm	XL	+8 mm

Material: Al_2O_3-ZrO_2
Cone: 12/14 mm

The symarec femoral heads can be only combined with Mathys polyethylene cups and inlays, or Mathys ceramic inlays.

Revision Head, ceramys

Item no.	Outside diameter	Neck length	
54.47.2010	28 mm	S	-3.5 mm
54.47.2020	28 mm	M	0 mm
54.47.2030	28 mm	L	+3.5 mm
54.47.2040	28 mm	XL	+7 mm
54.47.2110	32 mm	S	-3.5 mm
54.47.2120	32 mm	M	0 mm
54.47.2130	32 mm	L	+3.5 mm
54.47.2140	32 mm	XL	+7 mm
54.47.2210	36 mm	S	-3.5 mm
54.47.2220	36 mm	M	0 mm
54.47.2230	36 mm	L	+3.5 mm
54.47.2240	36 mm	XL	+7 mm

Material: ZrO_2-Al_2O_3, TiAl6V4
Cone: 12/14 mm

The ceramys Revision Heads can be combined with inlays made of either ceramic (only from Mathys), Polyethylene or cross linked Polyethylene.

Bipolar Head, CoCrMo and Stainless Steel

CoCrMo	Stainless Steel	Outside diameter	Head diameter
52.34.0090	–	39 mm	22.2 mm
52.34.0091	–	40 mm	22.2 mm
52.34.0092	–	41 mm	22.2 mm
52.34.0093	–	42 mm	22.2 mm
52.34.0094	–	43 mm	22.2 mm
52.34.0100	54.11.0042	42 mm	28 mm
52.34.0101	–	43 mm	28 mm
52.34.0102	54.11.0044	44 mm	28 mm
52.34.0103	–	45 mm	28 mm
52.34.0104	54.11.0046	46 mm	28 mm
52.34.0105	–	47 mm	28 mm
52.34.0106	54.11.0048	48 mm	28 mm
52.34.0107	–	49 mm	28 mm
52.34.0108	54.11.0050	50 mm	28 mm
52.34.0109	–	51 mm	28 mm
52.34.0110	54.11.0052	52 mm	28 mm
52.34.0111	–	53 mm	28 mm
52.34.0112	54.11.0054	54 mm	28 mm
52.34.0113	–	55 mm	28 mm
52.34.0114	54.11.0056	56 mm	28 mm
52.34.0115	–	57 mm	28 mm
52.34.0116	54.11.0058	58 mm	28 mm
52.34.0117	–	59 mm	28 mm

Material CoCrMo: CoCrMo
Material Stainless Steel: FeCrNiMnMoNbN; UHMWPE

Hemiprosthesis Head, Stainless Steel

OD	Item no. / S –4 mm	Item no. / M 0 mm
38 mm	2.30.420 *	67092 *
40 mm	2.30.421 *	67093 *
42 mm	2.30.422	67094 *
44 mm	2.30.423	67095 *
46 mm	2.30.424	67096 *
48 mm	2.30.425	67097 *
50 mm	2.30.426	67098 *
52 mm	2.30.427	67099 *
54 mm	2.30.428	67100 *
56 mm	2.30.429	67101 *
58 mm	2.30.430	67102 *

Material: FeCrNiMnMoNbN
Cone: 12 / 14 mm

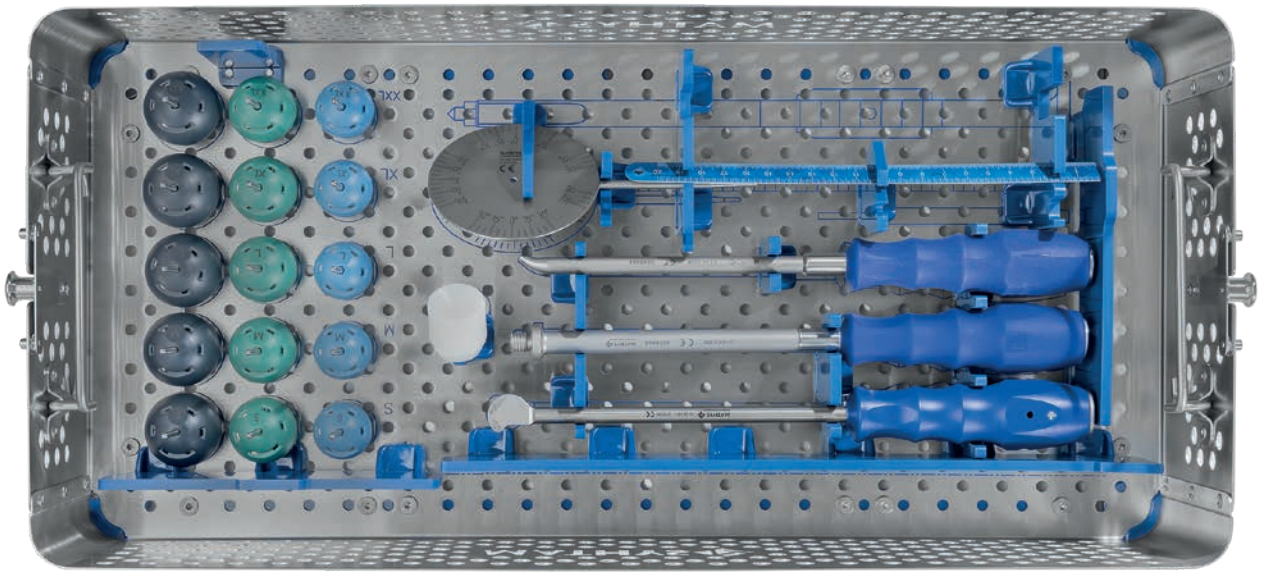
** optional*

The implantation of Bipolar- and Hemi heads is described in an separate surgical technique. Please contact your local Mathys representative for further details.

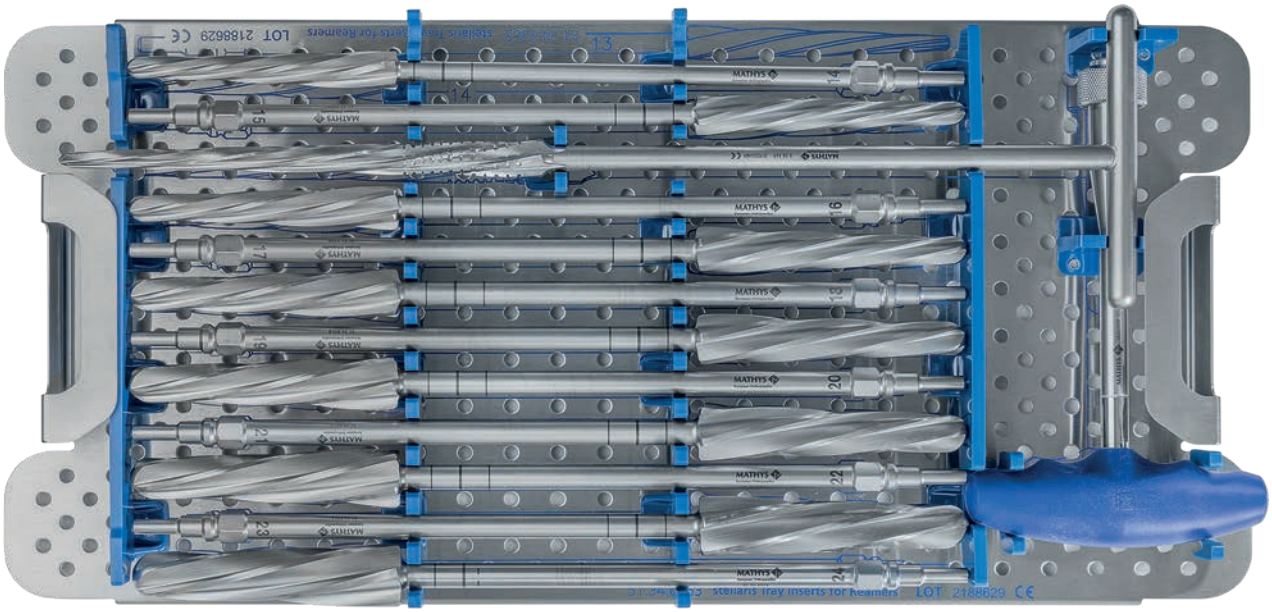
5. Instruments

stellaris Instrumentation, Set 51.34.1079A

Tray 1



Item no. 51.34.0365 **stellaris Tray for Basis Instruments**



Item no. 51.34.0363 **stellaris Insert for Reamers**
No Picture / Item no. 51.34.0362 **stellaris Lid**

Item no.	Description
3.30.130	Ruler length 20

Item no.	Description
3.30.349	Reamer broad

Item no.	Description
51.34.0204	stellaris reamer 13
51.34.0205	stellaris reamer 14
51.34.0206	stellaris reamer 15
51.34.0207	stellaris reamer 16
51.34.0208	stellaris reamer 17
51.34.0209	stellaris reamer 18
51.34.0210	stellaris reamer 19
51.34.0211	stellaris reamer 20
51.34.0212	stellaris reamer 21
51.34.0213	stellaris reamer 22
51.34.0214	stellaris reamer 23
51.34.0215	stellaris reamer 24

Item no.	Description
58.02.4008	Handle with quick coupling

Item no.	Description
51.34.1064	Trial head 28 S
51.34.1065	Trial head 28 M
51.34.1066	Trial head 28 L
51.34.1067	Trial head 28 XL
51.34.1068	Trial head 28 XXL
51.34.1069	Trial head 32 S
51.34.1070	Trial head 32 M
51.34.1071	Trial head 32 L
51.34.1072	Trial head 32 XL
51.34.1073	Trial head 32 XXL
51.34.1074	Trial head 36 S
51.34.1075	Trial head 36 M
51.34.1076	Trial head 36 L
51.34.1077	Trial head 36 XL
51.34.1078	Trial head 36 XXL

Item no.	Description
51.34.0135	Head impactor silicone

Item no.	Description
3.30.536	Top f/head impactor

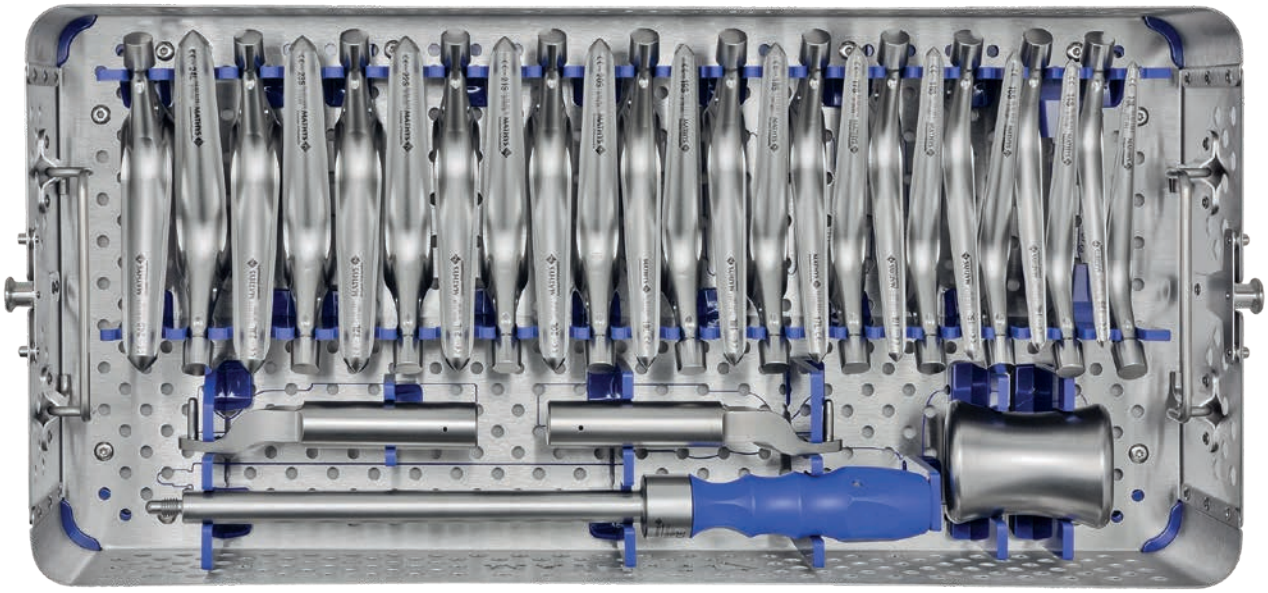
Item no.	Description
56.02.3816	stellaris Impactor

Item no.	Description
51.34.0864	stellaris impactor NG

Item no.	Description
56.02.3128	stellaris adapter for Anteversion

Item no.	Description
51.34.0136	Extractor curved silicone

Tray 2



Item no. 51.34.0366 **stellaris Tray for Trial Protheses**
No Picture / Item no. 51.34.0362 **stellaris Lid**

Item no.	Description
56.02.3212	stellaris trial prosthesis standard 15
56.02.3213	stellaris trial prosthesis standard 16
56.02.3214	stellaris trial prosthesis standard 17
56.02.3215	stellaris trial prosthesis standard 18
56.02.3216	stellaris trial prosthesis standard 19
56.02.3217	stellaris trial prosthesis standard 20
56.02.3218	stellaris trial prosthesis standard 21
56.02.3219	stellaris trial prosthesis standard 22
56.02.3220	stellaris trial prosthesis standard 23
56.02.3225	stellaris trial prosthesis standard 24

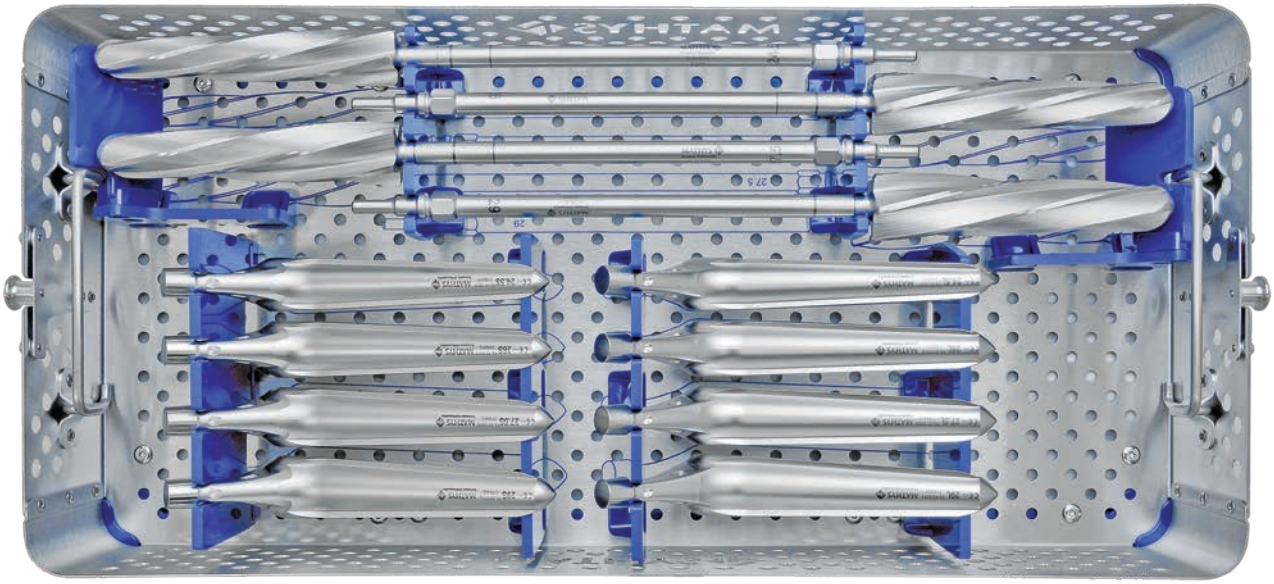
Item no.	Description
56.02.3242	stellaris trial prosthesis lateral 15
56.02.3243	stellaris trial prosthesis lateral 16
56.02.3244	stellaris trial prosthesis lateral 17
56.02.3245	stellaris trial prosthesis lateral 18
56.02.3246	stellaris trial prosthesis lateral 19
56.02.3247	stellaris trial prosthesis lateral 20
56.02.3248	stellaris trial prosthesis lateral 21
56.02.3249	stellaris trial prosthesis lateral 22
56.02.3250	stellaris trial prosthesis lateral 23
56.02.3255	stellaris trial prosthesis lateral 24

Item no.	Description
51.34.0062	Stem extractor

Item no.	Description
51.34.0187	stellaris slide weight

Item no.	Description
51.34.0188	Modular extraction hook left
51.34.0235	Modular extraction hook right

Tray 3



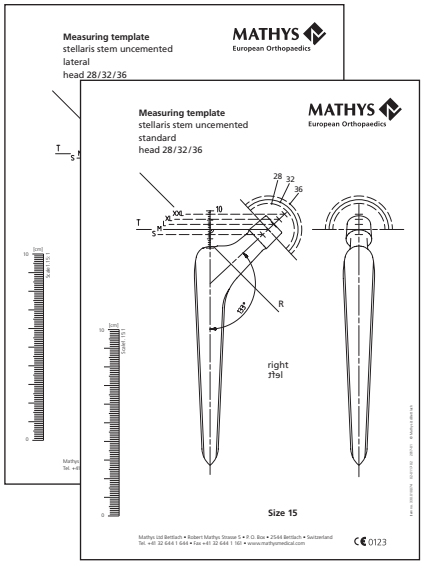
Item no. 51.34.0364 **stellaris Long Tray**
No Picture / Item no. 51.34.0362 **stellaris Lid**

Item no.	Description
51.34.0216	stellaris Long reamer 24.5
51.34.0217	stellaris Long reamer 26
51.34.0218	stellaris Long reamer 27.5
51.34.0219	stellaris Long reamer 29

Item no.	Description
56.02.3221	stellaris Long trial prothesis std. 24.5
56.02.3222	stellaris Long trial prothesis std. 26
56.02.3223	stellaris Long trial prothesis std. 27.5
56.02.3224	stellaris Long trial prothesis std. 29

Item no.	Description
56.02.3251	stellaris Long trial prothesis lat. 24.5
56.02.3252	stellaris Long trial prothesis lat. 26
56.02.3253	stellaris Long trial prothesis lat. 27.5
56.02.3254	stellaris Long trial prothesis lat. 29

6. Measuring templates



Item no.	Description
330.010.073	stellaris stem uncem. lateral Template
330.010.074	stellaris stem uncem. standard Template

7. References

1 Schenk R.K., Wehrli U. Zur Reaktion des Knochens auf eine zementfreie SL-Femur-Revisionsprothese. Orthopade. 1989; 18: 454–462.

2 M.C. Parry et a l(2016) The Wagner Cone Stem for the Management of the Challenging Femur in Primary Hip Arthroplasty ,The Journal of Arthroplasty)

3 Jung Taek Kim, MD and Jeong Joon Yoo, MD, PhD. Implant Design in Cementless Hip Arthroplasty, Hip Pelvis. 2016 Jun;28(2):65-75. English.

4 Wagner H., Wagner M. Cone Prosthesis for the hip joint. Arch Orthop Trauma Surg. 2000; 120: 88–95

5 Noble_anatomic basis of proximal femur. Clin Orthop Relat Res. 1988 Oct;(235):148-65 : s.n., 1988

6 Scheerlinck Th. (2010) Primary hip arthroplasty templating on standard radiographs. A stepwise approach; Acta Orthop. Belg., 2010, 76, 432-442

7 Loweg L., Kutzner K.P., Trost M., Hechtner M., et al. The learning curve in short-stem THA: influence of the surgeon's experience on intraoperative adjustments due to intraoperative radiography. European Journal of Orthopaedic Surgery & Traumatology, 2017

8. Symbols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Caution

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