MATHYS
a company of enovis

SURGICAL TECHNIQUE

RM Classic cup

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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

The RM Classic cup is an uncemented monoblock cup made of polyethylene. It was developed on the basis of the cemented Müller cup design with the aim of achieving a high degree of primary implant stability without bone cement. The design of the implant coated with pure titanium (TiCP) particles has been unchanged since 1983 and has proven its worth in many years of clinical use. [1, 2]

RM philosophy

Many years of clinical experience with elastic monoblock cups

1967

Müller cemented
The idea – design paradigms of a cemented cup

1973

RM uncoated
The beginning – Uncemented elastic monoblock design

1983

RM Classic titanium-coated
The surface – a combination for success

Elasticity

UHMWPE (ultra-high molecular weight polyethylene) as a material has an elasticity very similar to that of the human pelvic bone (Table 1). [3] The approximation of the physical properties of the implant and its adaptation to the deformation conditions occurring in the pelvis enable homogeneous and physiological transmission of force between the implant and the bone. As a result, peri-acetabular bone structures can be preserved in the long run, with low risk of stress shielding. [4, 5]

Mechanical properties	UHMWPE (ISO 5834-2)	Bone	TiCP (ISO 5832-2)
Density [g/cm³]	0.935	0.2–2	4.5
Modulus of elasticity [N/mm²]	1'000	500–6'000	105'000
Tensile strength [N/mm²]	25	8–150	> 400

Table 1: Comparison of the material properties of bone, UHMWPE and pure titanium [3]

RM Cups
TiCP coated

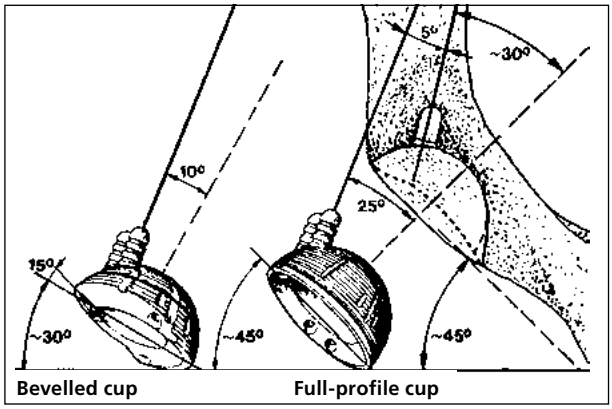


Fig. 1 RM Classic fixation concept

Primary stability

The angles of the drill holes diverge from those of the two anchoring pins on the implant by 5°, and as a result, the anchoring pins undergo pre-tensioning and engage when the cup is impacted (Fig. 1). This serves for primary fixation of the cup in the acetabulum and secures the implant against rotational forces. [6]

The cup can be additionally secured peripherally using up to seven special screws in order to achieve stable connection between the implant and bone.

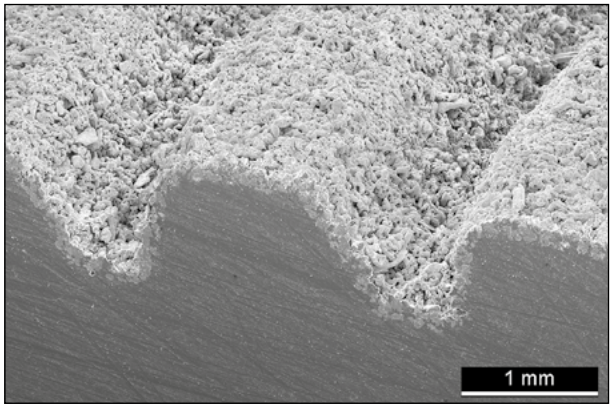


Fig. 2 Microscopic image of the TiCP coating

Secondary stability

The titanium particle coating prevents direct contact between bone and polyethylene (Fig. 2). In addition, the mechanical connection between the cup and bone is improved further by the microstructuring of the coating. The titanium-coated RM Classic cups are characterized by their bio-inert behaviour and the known osseo-integration ability of titanium. [8]

The particles are individually anchored in the UHM-WPE and not structurally connected to one another. Thus, the elasticity of the implant is not altered by the coating. [9]

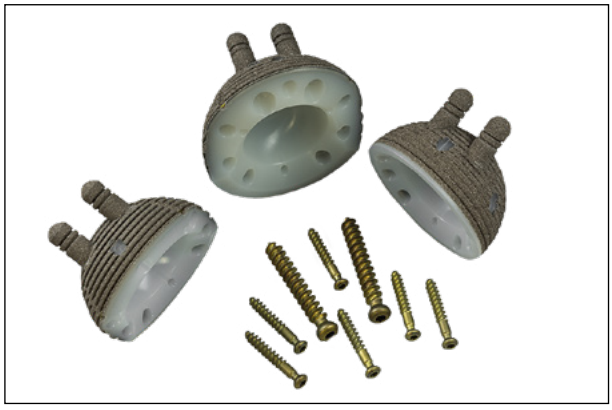


Fig. 3 RM Classic system

One system, several options

The RM Classic cup family contains three cup variants (Fig. 3), which can be used with the same instrumentation.

All the cup models have seven peripheral screw holes for fixation in the acetabulum with 4 mm special screws.

Fig. 4 Full-profile cup

Full-profile cup
- Hemispheric body for the implantation with 45° inclination (Fig. 4)

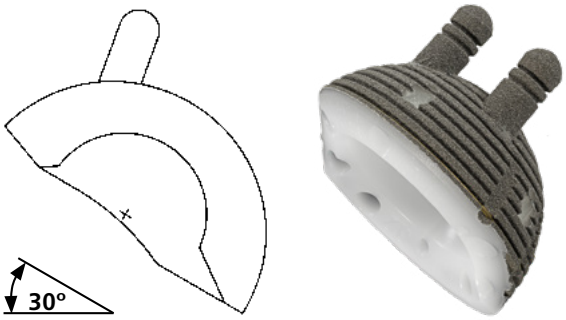


Fig. 5 Bevelled cup

Bevelled cup
- Cranial bevel for the implantation with 30° inclination (Fig. 5)
- Greater coverage of the ball head through flatter cup positioning
- Reduction of the risk of impingement and dislocation [10]

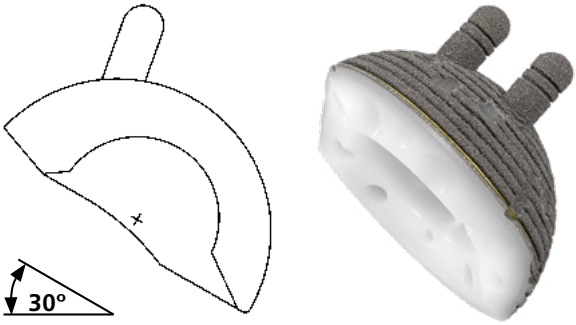


Fig. 6 Revision cup

Revision cup
- Basic design of the bevelled cup
- Two additional screw holes for the fixation with 6.5 mm cancellous screws in case of extensive bone defects
- Eccentric shift of the centre of rotation by 2 mm

1. Indications and contraindications

Indications

- Primary or secondary osteoarthritis of the hip
- Fracture of the femoral head or fracture of the femoral neck
- Necrosis of the femoral head
- Dysplasia of the hip
- Revision of failed previous surgery

Contraindications

- Local or general infection
- Presence of factors jeopardising stable anchoring of the implant:
  – Bone loss and/or bone defects
  – Insufficient bone substance
- Presence of factors preventing osseointegration:
  – Irradiated bone (exception: preoperative irradiation for ossification prophylaxis)
  – Devascularisation
- Hypersensitivity to materials used
- Severe soft tissue, nerve or vessel insufficiency that jeopardises 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

Pre-operative planning can be performed using standard radiographs or a digital planning system. The main goal of planning is to determine the suitable implant, its size and position, with the objective of restoring the individual biomechanics of the hip joint. Thus, possible problems can be identified even before surgery. [11]

Moreover, the preoperative planning serves as a basis for intraoperative reconciliation using fluoroscopic control.

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

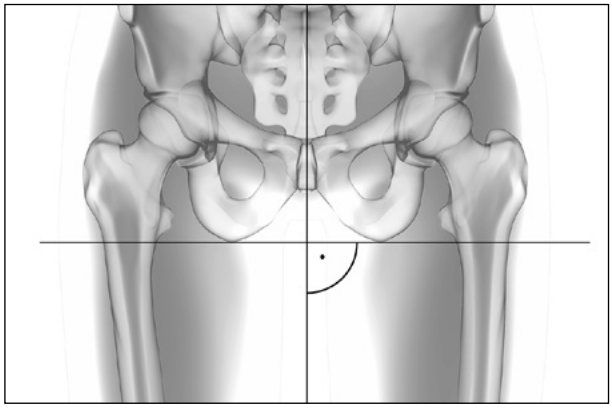


Fig. 7

The planning is ideally performed on a pelvic X-ray taken with the patient in a supine or standing position. In doing so, the central beam is focused onto the symphysis with 20° internal rotation of the femurs. The scale is calculated with the known options, that is, either with a defined calibration object or using a known and reconstructable film-to-focus distance (Fig. 7).

Remark

In case of a strongly deformed hip, consider performing the planning on the healthy side and then mirroring it to the affected side.

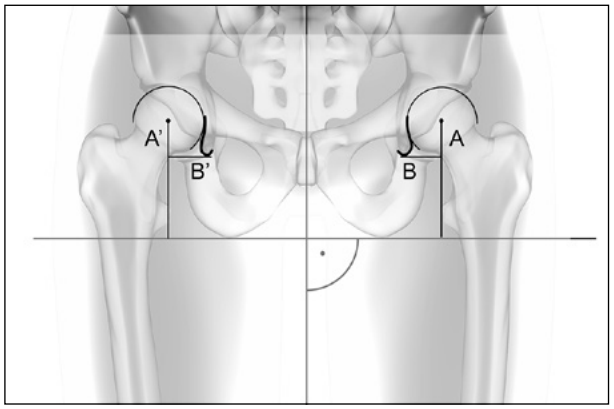


Fig. 8

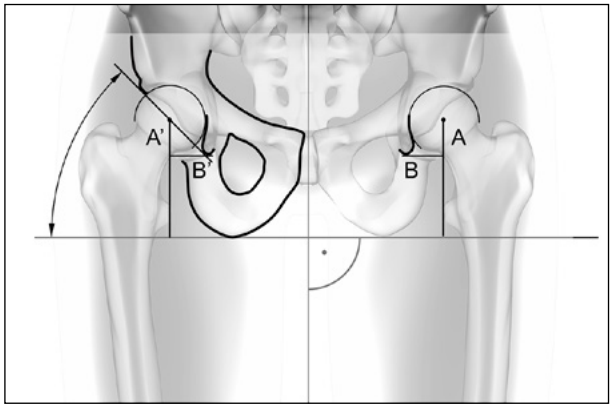


Fig. 9

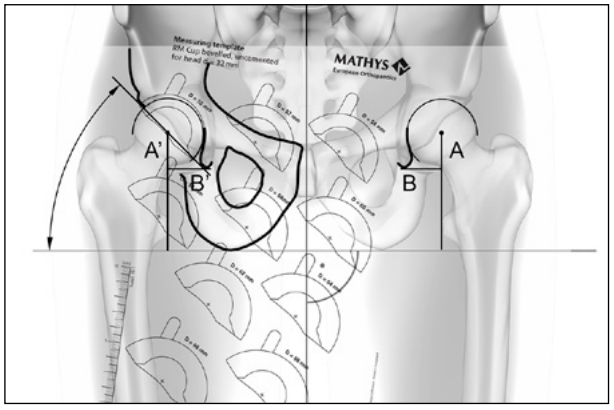


Fig. 10

Estimation of the acetabular offset

The centres of rotation of the healthy (A) and the affected hip (A') are each defined as the centre of a circle surrounding the femoral head or the cavity of the acetabulum.

A first, horizontal line is placed as a tangent on both ischial tuberosities, and a second, vertical line is placed through the centre of the symphysis.

Remark

In case of leg length compensation, the adaptation of the leg lengths with the aid of the ischial tuberosity can be considered already now.

The acetabular offset is defined as the distance between Köhler's teardrop (B or B') and the vertical line through the centre of rotation of the hip (A or A') (Fig. 8).

Planning the cup

The cup position in relation to the pelvis must take into account the acetabular contours, the centre of rotation of the hip, Köhler's teardrop and the necessary angle of inclination of the cup (Fig. 9).

To find a suitable cup size, several cup templates are successively positioned at the level of the cavity of the acetabulum with the aim of restoring the native centre of rotation of the hip and at the same time enabling sufficient bone contact at the level of the acetabular roof as well as at that of Köhler's teardrop (Fig. 10).

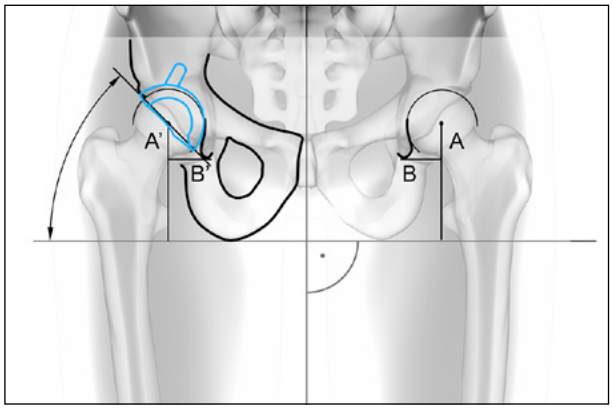


Fig. 11

In the positioning of the cup, the patient's individual anatomy must be considered.
The implant position is determined in relation to the anatomical landmarks (acetabular roof, Köhler's tear-drop).
The implantation depth is then determined (Fig. 11).

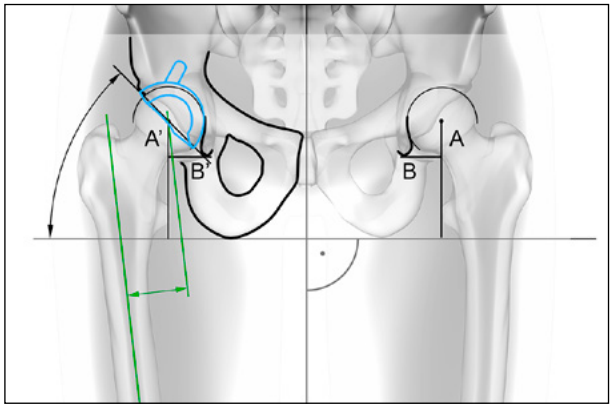


Fig. 12

Estimation of the femoral offset
The femoral offset is defined as the smallest distance between the central longitudinal axis of the femur and the centre of rotation of the hip (Fig. 12).

Remark
The planning of the stem is shown using the twinSys stem as an example. Other stem systems may also be used.

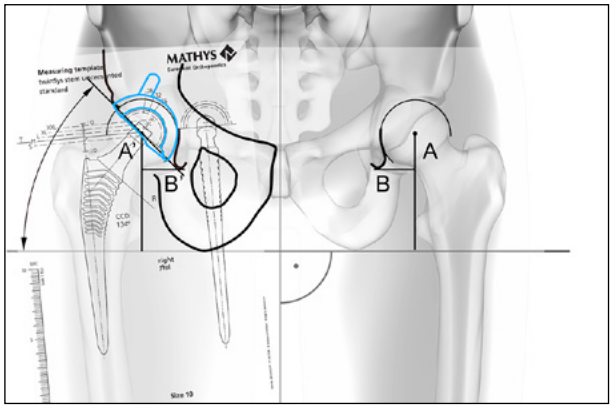


Fig. 13

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. 13).

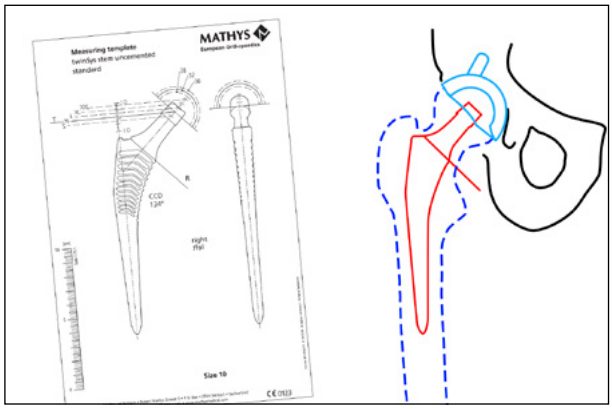


Fig. 14

On the planning sheet, the suitable stem is plotted with the measuring template in the same abduction/adduction position as the femur of the healthy side shown in the form of dotted lines. (Fig. 14).

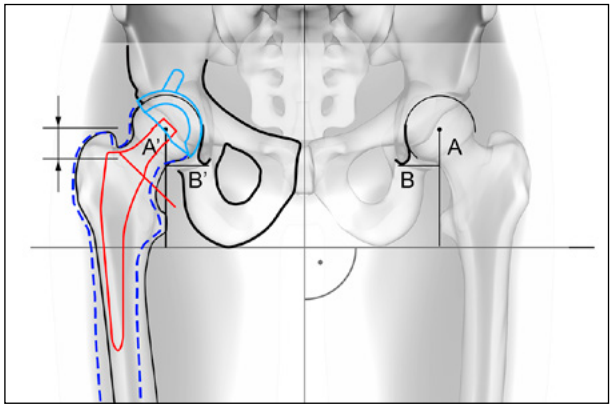


Fig. 15

The femur to be operated on is plotted over the selected stem.
The distance between the proximal end of the stem cone and the minor trochanter as well as the one between the shoulder of the stem and the major trochanter are measured.

Plotting of the resection plane and determination of the intersection between the trochanteric mass and the lateral demarcation of the prosthesis stem (Fig. 15).

3. Surgical technique

The RM Classic cup can be implanted using various surgical approaches and positioning of the patient. The decision in favour of a specific technique should be based on the patient's anatomy, the planned surgical intervention and on the personal experience and preferences of the surgeon.

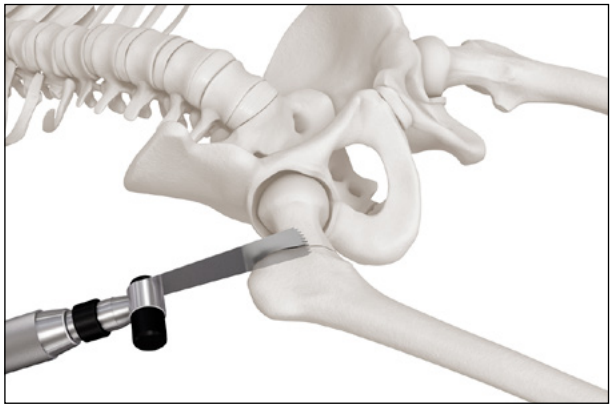


Fig. 16

Femoral osteotomy
The femoral neck is resected according to the preoperative planning (Fig. 16). In the case of difficult anatomical conditions, 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.

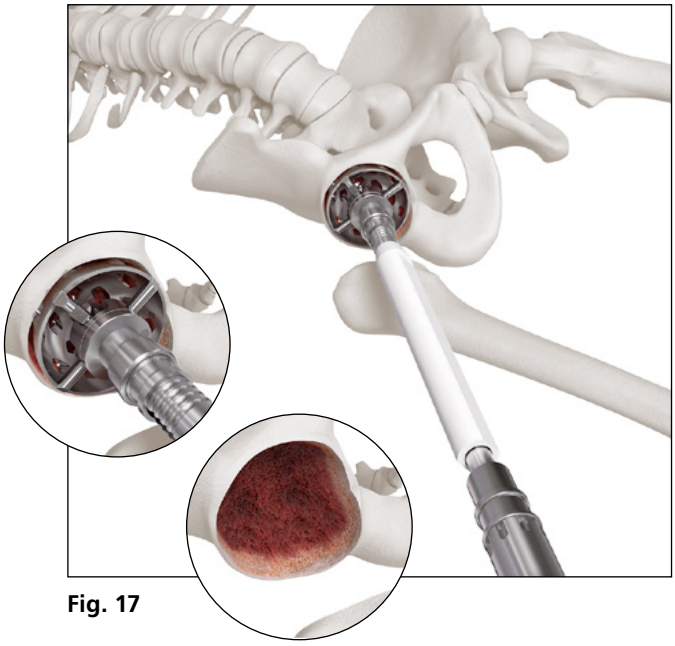


Fig. 17

Preparation of the acetabulum
Sufficient exposure of the acetabulum is the prerequisite for safe preparation of the acetabulum to ensure correct cup implantation and good primary stability.
Using spherical acetabular reamers of ascending sizes, the acetabular bed is processed in increments of 2 mm each, until the correct depth and size is achieved. Sclerotic subchondral bone is prepared in such a manner that minor haemorrhages appear (Fig. 17).

Remark
Ensure that the acetabulum is reamed down to the implant depth defined in the preoperative planning. Careful debridement of the acetabular rim is important to avoid drawing in soft tissues between the bone and the cup during implantation.

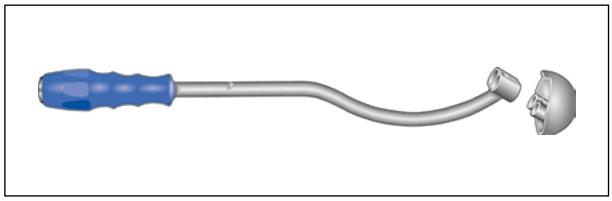


Fig. 18

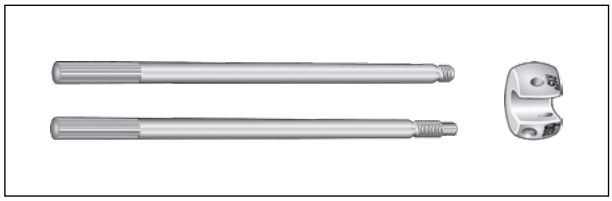


Fig. 19

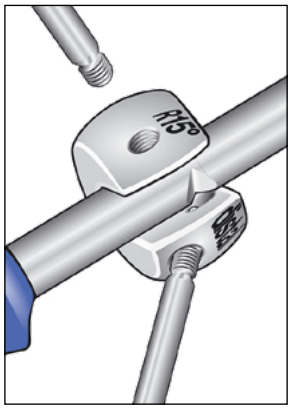


Fig. 20

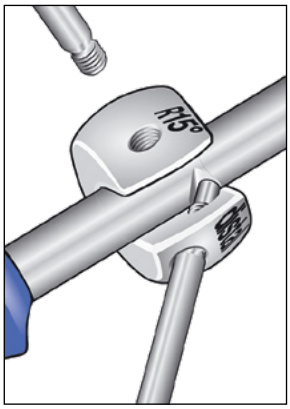


Fig. 21

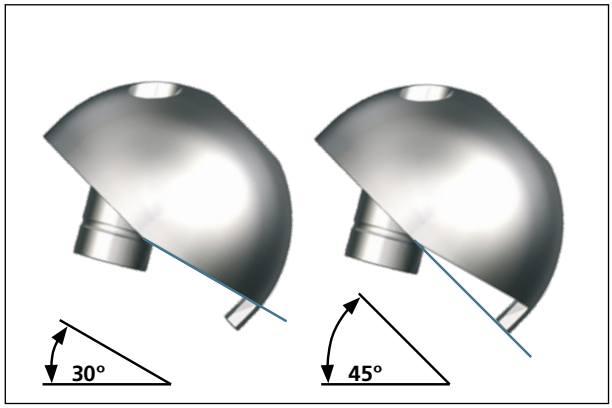


Fig. 22

Implantation of the cup

To determine the definitive cup size, a trial cup of the same size as the most recently used reamer is selected. The trial cup is placed on the aiming device (Fig. 18), and the positioning guide (Fig. 19) is secured on the handle.

The positioning guide is used to determine the inclination and anteversion of the implant, using anatomic landmarks and taking preoperative planning into account.

Remark

Precise adjustment of inclination and anteversion is a prerequisite for complication-free functioning of the artificial hip joint; here the individual anatomy is to be considered. Generally, an inclination of 40°–50° and an anteversion of 10°–20° are recommended. The positioning guide is designed with an inclination of 45° and an anteversion of 15°.

Installation of the positioning guide

The rod with the longer thread (Fig. 19) is screwed into the positioning guide (hole labelled as «distal»). The rod must not be screwed in completely yet.
The positioning guide is placed on the aiming device so that the rod points to the groove (Fig. 20).

The rod is now screwed in further with the aid of the fixation ring until it rests in the groove and the positioning guide is secured.
The second rod is, depending on the side to be operated on, screwed into the hole of the aiming guide intended for that purpose (left hip or right hip) (Fig. 21).

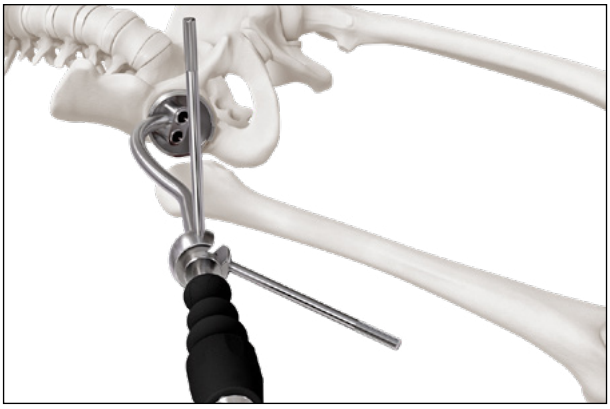


Fig. 23

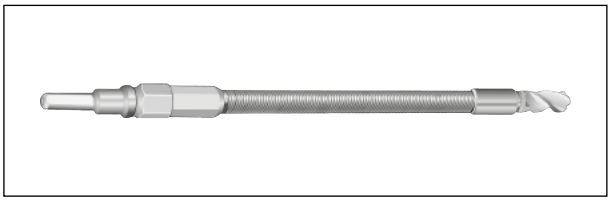


Fig. 24

Fig. 25

Pre-drilling of the anchoring pin holes
When orienting the trial cup in the acetabulum, the cranial orientation of the drill holes for the anchoring pins and the use of a bevelled or full profile cup should be taken into account (Fig. 22, 23).

The first pin hole is pre-drilled (Fig. 25) using the flexible reaming shaft (Fig. 24). After the first drilling, the reaming shaft is left in the drill guide of the trial cup, and the next hole is prepared using another reaming shaft.

Optional
Using the centring bolt inserted into the pin hole, the positioning guide is held in the correct position. Afterwards, the second pin hole can be drilled using the same reaming shaft.

To minimise the risk of nerve and vascular damage, the orientation of the pin holes must be selected according to the anatomical conditions in the pelvic area.

Remark
It must be ensured that no excessive lateral force is applied to the reaming shaft. This could lead to damage of the reaming shaft.

To make it easier to find the drill holes for the pins and thus to insert the cup, the entry points of the drill holes can be reamed up using the flexible countersink reamer.

Remark
The size designation of the final implant must match the size of the trial cup used for drilling the pin holes.

Handling of cup insertion instruments
Curved cup positioner (Fig. 26)

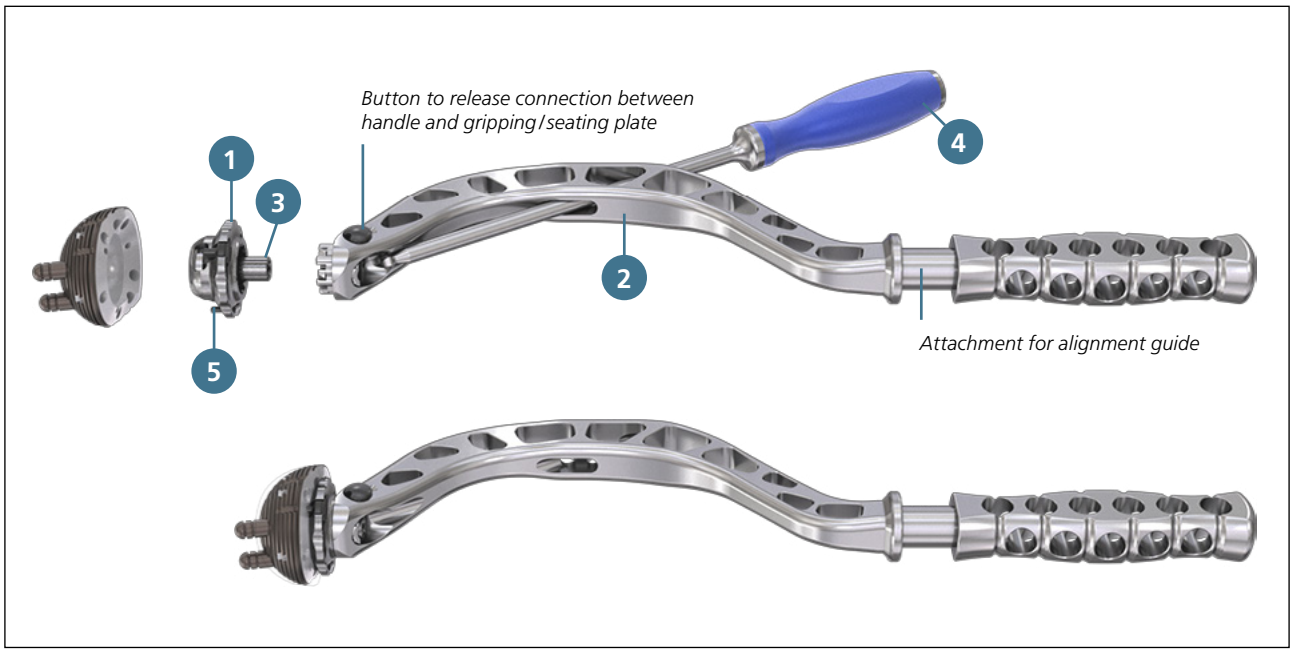


Fig. 26

1. Connection of the gripping plate (1) with the curved handle (2) (click-on)
2. Full release of the locking screw (3) by turning the ball hex screwdriver (4) counterclockwise
3. Alignment and insertion of the metal pins (5) of the gripping plate into the cup (cup has to sit flush on the gripping plate)
4. Connection between gripping plate and cup by tightening the locking screw clockwise with the ball hex screwdriver
5. After cup implantation, full release of the locking screw (3) and disconnection of the gripping plate from the cup by axial extraction of the curved cup positioner

Straight cup positioner (Fig. 27)

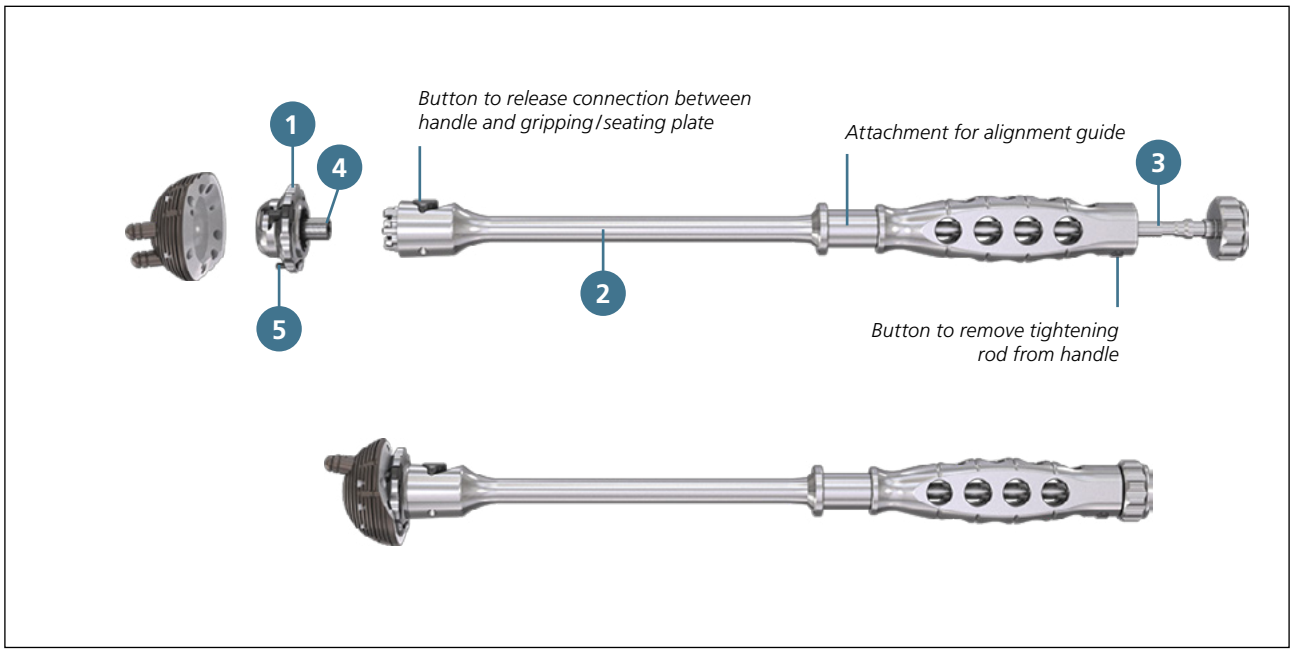


Fig. 27

1. Connection of the gripping plate (1) with the straight handle (2) (click-on)
2. Insertion of the tightening rod (3) into the straight handle (click-in)
3. Full release of the locking screw (4) by turning the tightening rod counterclockwise
4. Alignment and insertion of the metal pins (5) of the gripping plate into the cup (cup has to sit flush on the gripping plate)
5. Connection between gripping plate and cup by tightening the locking screw clockwise with the tightening rod.
6. After cup implantation, full release of the locking screw (4) and disconnection of the gripping plate from the cup by axial extraction of the straight cup positioner

Fig. 28

Inserting the cup

The cup is now inserted into the acetabulum. First the two anchoring pins are centred in the drill holes, and then the implant is driven in (Fig. 28).

During cup implantation, titanium particles may detach from the surface of the implant. At the time of reduction, the joint space must be free of foreign particles.

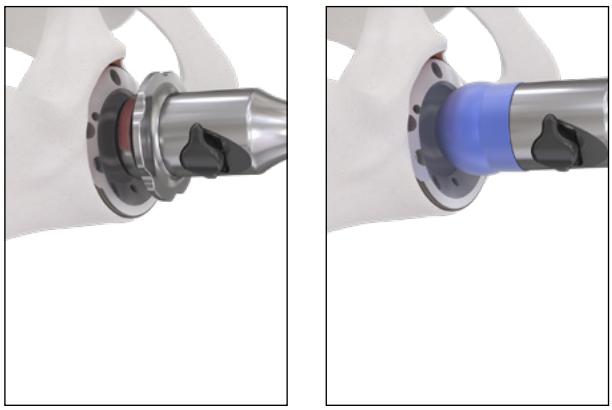


Fig. 29

If necessary, the cup is driven in with the seating plate or the seating ball until it reaches the final position (Fig. 29).

Any osteophytes still present are removed to reduce the risk of extraarticular impingement.

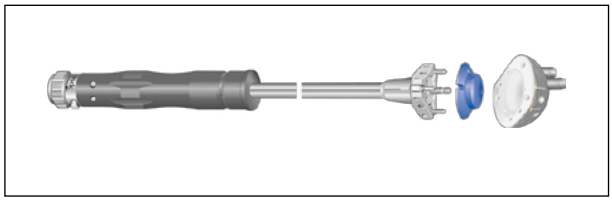


Fig. 30

Fig. 31

Fig. 32

Optional cup inserters:
Handle with gripping head

Before fixation of the RM Classic cup on the handle with gripping head, the rod with impact plate must be introduced with a slight twisting movement into the handle with gripping head.

Remark

The rod with impact plate must be introduced slowly and carefully into the handle during assembly, otherwise defects on the instrument might occur. It is important to ensure that the rod latches in the handle with gripping head.

Subsequently, the centring head with the corresponding articulation diameter is selected, and the cup is placed on the instrument (Fig. 30).

By rotating the impact plate clockwise (Fig. 31), spreading of the pins in the cup guide holes takes place. This establishes a stable connection between the insertion instrument and the implant.

The cup is now inserted into the acetabulum. First the two anchoring pins are centred in the drill holes, and then the implant is driven in (Fig. 32).

After impaction of the cup, the pins are brought back into the neutral position by rotating the impact plate counterclockwise, and the instrument is removed.

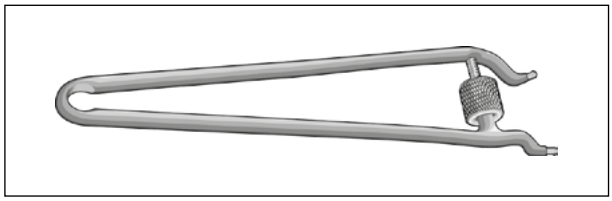


Fig. 33

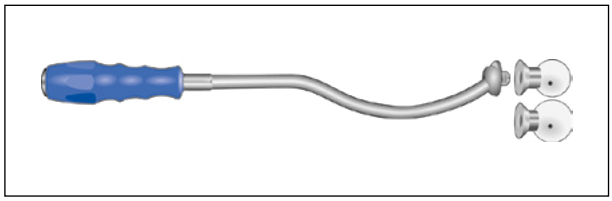


Fig. 34

Fig. 35

To insert the cup, alternatively the cup holder in combination with the impactor can be used (Figs. 33–35).

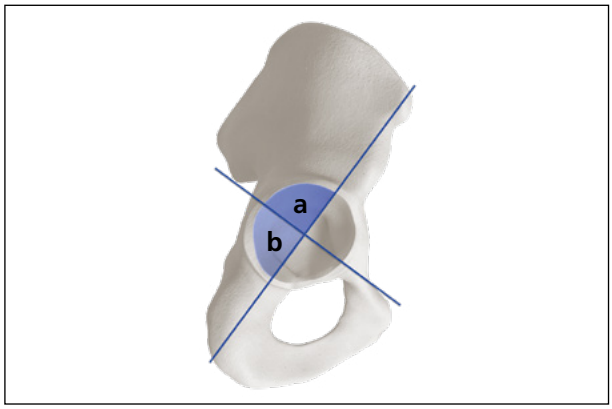


Fig. 36

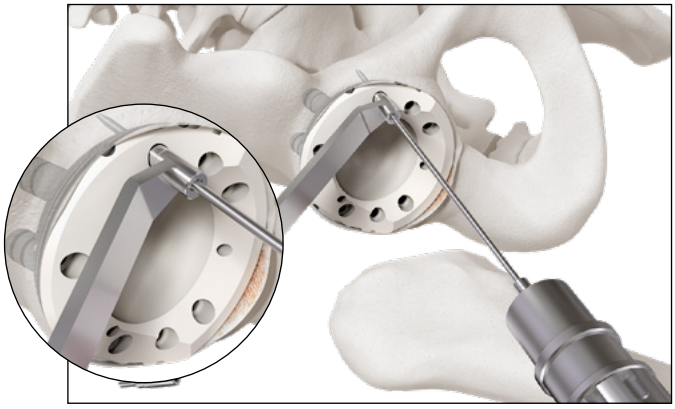


Fig. 37

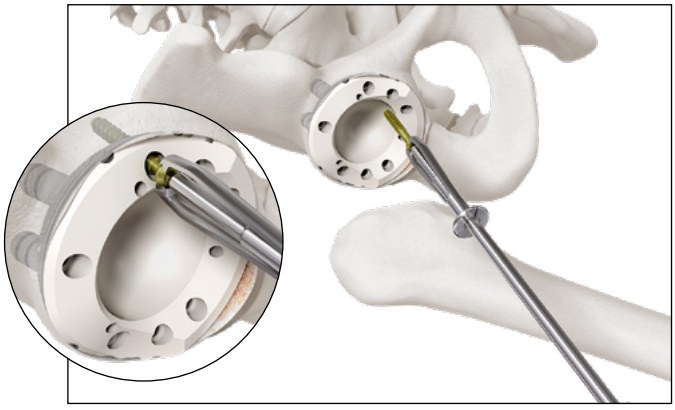


Fig. 38

Additional screw fixation

Additional fixation of the cup is achieved using 4.0 mm special screws. The revision cup offers the option of using 6.5 mm cancellous screws.

To minimise the risk of nerve and vessel injury, the position of the cup, the drilling depths of the screw holes and the respective screw lengths must be selected taking into account the anatomy of the patient's pelvic area. The screws are preferably placed in the postero-superior quadrant (a) or with caution in the postero-inferior quadrant (b) of the acetabulum (Fig. 36). [12]

The drill sleeve is pushed completely into the screw hole at the edge of the cup, and the screw hole is drilled in the acetabulum for the 4.0 mm special screw using the 2 mm flat drill (Fig. 37).

The screw thread can be pre-cut in the bone using the tap.

The core diameter of the 6.5 mm cancellous screw in the case of the revision cup is pre-drilled with the 3.1 mm drill bit.

After determining the screw length with the depth gauge, the corresponding screw is inserted using the screwdriver (Fig. 38).

Remark

To avoid damaging the ball head during reduction, the screw heads must be completely countersunk into the screw holes.

After preparation of the femoral canal, the joint is reduced with a rasp or final stem implant in place and a trial head which fits the inner diameter of the cup. After the trial reduction, the hip joint is moved through its full range of motion.
In doing so, attention should be paid to soft-tissue and neck-cup impingement, and the dislocation tendency of the implant during internal/external rotation in flexion and extension is assessed. In addition, sufficient soft tissue tension should be ensured.
At this point, it is still possible to change the neck length of the head and the stem variant (standard/lateral).

In addition, an intraoperative X-ray image can be taken for final control. [13]

Remark
The implantation of the stem and the determination of the appropriate ball head are described in the corresponding surgical technique for the stem. This can be requested from the local Mathys agency.

After implantation of the stem and the ball head which fits the articulation diameter of the cup, care must be taken that the joint space is free of foreign particles at the time of reduction.
Depending on the approach, muscle insertions are reattached, and the wound is closed layer by layer.

Remark
In case of a revision of the RM Classic cup, the edge of the cup must initially be fully exposed. Existing screws are removed.

By reaming the polyethylene with small acetabular reamers starting at the articulating surface, the polyethylene is thinned out until the implant can be extracted with a clamp. [14]

Alternatively, the cup can be carefully removed using chisels or a universal cup removal instrumentation. Detailed information on possible removal instruments can be requested from the local Mathys agency.

4. Implants

Uncemented cups, TiCP-coated

RM Classic cup bevelled

Diameter	Item no. 28 mm	Item no. 32 mm
46 mm	4.14.750	–
48 mm	4.14.751	–
50 mm	4.14.752	4.14.740
52 mm	4.14.753	4.14.741
54 mm	4.14.754	4.14.742
56 mm	4.14.755	4.14.743
58 mm	4.14.756	4.14.744
60 mm	4.14.757	4.14.745
62 mm	4.14.758	4.14.746
64 mm	–	4.14.747
66 mm	–	4.14.748
68 mm	–	4.14.749

Material: UHMWPE, Ti6Al4V, TiCP

RM Classic cup full profile, ID 32 mm

Diameter	Item no. 32 mm
50 mm	4.14.501
52 mm	4.14.502
54 mm	4.14.503
56 mm	4.14.504
58 mm	4.14.505
60 mm	4.14.506

Material: UHMWPE, Ti6Al4V, TiCP

RM Classic revision cup, ID 32 mm

Diameter	Item no. 32 mm
60 mm	4.14.769
62 mm	4.14.770
64 mm	4.14.771
66 mm	4.14.772
68 mm	4.14.773

Material: UHMWPE, Ti6Al4V, TiCP

Special screw, 4.0 mm Ø

Titanium (TiCP)

Steel (FeCrNiMoMn)

Item no. TiCP (sterile)	Item no. TiCP (non-sterile)	Item no. FeCrNiMoMn (non-sterile)	Length
4.14.015S	4.14.015	2.14.015	22 mm
4.14.014S	4.14.014	2.14.014	24 mm
4.14.013S	4.14.013	2.14.013	26 mm
4.14.000S	4.14.000	2.14.000	28 mm
4.14.001S	4.14.001	2.14.001	32 mm
4.14.002S	4.14.002	2.14.002	34 mm
4.14.003S	4.14.003	2.14.003	36 mm
4.14.004S	4.14.004	2.14.004	38 mm
4.14.005S	4.14.005	2.14.005	40 mm
4.14.006S	4.14.006	2.14.006	44 mm
4.14.007S	4.14.007	2.14.007	48 mm
4.14.008S	4.14.008	2.14.008	52 mm

Material: TiCP, FeCrNiMoMn

For additional fixation of the RM Classic bevelled, RM Classic full profile and RM Classic revision cup.

Cancellous screw, sterile, fully threaded, 6.5 mm Ø, for revision cup

Titanium (Ti6Al4V)

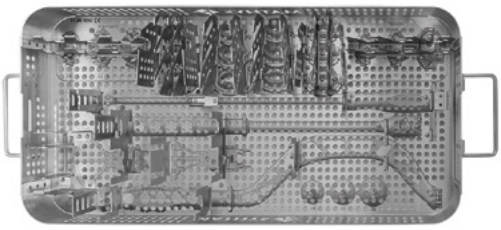
Item no.	Length
418.040MS	40 mm
418.045MS	45 mm
418.050MS	50 mm
418.055MS	55 mm
418.060MS	60 mm
418.065MS	65 mm

Material: Ti6Al4V

For additional fixation of the RM Classic revision cup.

5. Instruments

RM Classic instrumentation with modular cup positioner, 51.34.1099A



Item no.	Description
51.34.1096	Cups basic tray (single layer)
51.34.1097	Cups basic tray (double layer)
51.34.1105	Mathys lid

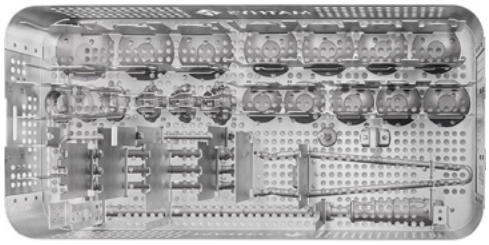
Item no.	Description
51.34.1112	Curved cup positioner

Item no.	Description
51.34.1113	Ball hex screwdriver 7.0

Item no.	Description
51.34.1114	Straight cup positioner

Item no.	Description
51.34.1115	Impaction plate with tightening rod 7.0

Item no.	Description
51.34.1136	Seating ball ø28
51.34.1137	Seating ball ø32



Item no.	Description
51.34.1098	RM Classic tray
51.34.1105	Mathys lid

Item no.	Description
55.02.0703	RM Classic aim.device straight 3rd gen.

Item no.	Description
55.02.0600	RM Classic aiming device curved 3rd gen.

Item no.	Description
55.02.0000	RM Classic positioning guide 3rd gen.

Item no.	Description
55.02.0003	Fixation ring for 55.02.0000

Item no.	Description
55.02.0109	Rod for positioning guide

Item no.	Description
55.02.0604	RM Classic trial cup 46 3rd gen.
55.02.0605	RM Classic trial cup 48 3rd gen.
55.02.0606	RM Classic trial cup 50 3rd gen.
55.02.0607	RM Classic trial cup 52 3rd gen.
55.02.0608	RM Classic trial cup 54 3rd gen.
55.02.0609	RM Classic trial cup 56 3rd gen.
55.02.0610	RM Classic trial cup 58 3rd gen.
55.02.0611	RM Classic trial cup 60 3rd gen.
55.02.0612	RM Classic trial cup 62 3rd gen.
55.02.0613	RM Classic trial cup 64 3rd gen.
55.02.0614	RM Classic trial cup 66 3rd gen.
55.02.0615	RM Classic trial cup 68 3rd gen.

Item no.	Description
55.02.1903	RM Classic reaming shaft, flex. 3rd gen.

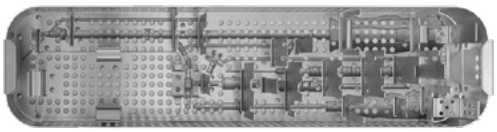
Item no.	Description
55.02.0599	RM Classic centring bolt 3rd gen.

Item no.	Description
55.02.1901	RM Classic counters.reamer flex. 3rd gen.

Item no.	Description
51.34.1139	Gripping plate RM Classic ø28
51.34.1140	Gripping plate RM Classic ø32

Item no.	Description
51.34.1141	Seating plate full profile ø28
51.34.1142	Seating plate full profile ø32

Item no.	Description
55.02.0700	RM Classic cup holder 3rd gen.



Item no.	Description
51.34.1103	Tray module small for screw fixation

Item no.	Description
51.34.1119	Micro tray for small items

Item no.	Description
3.14.014	Drill sleeve 2 and 3.1

Item no.	Description
3.14.545	Shaft, flexible

Item no.	Description
3.14.254	Drill bit 3.1 for flex. shaft

Item no.	Description
3.40.275	Flat drill 2 flex.

Item no.	Description
3.14.285	Depth gauge

Item no.	Description
3.40.502	T-handle w/quick coupling

Item no.	Description
3.14.253	Tap 3.5

Item no.	Description
3.14.045	Depth gauge

Item no.	Description
58.02.4005	Screwdriver hex. 2.5 w/holding sleeve

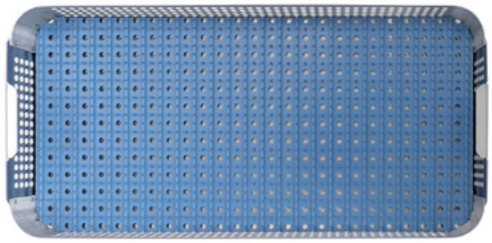
Item no.	Description
51.34.0946	U-joint screwdriver 3.5 mm hex

Optional components (not a part of the set)

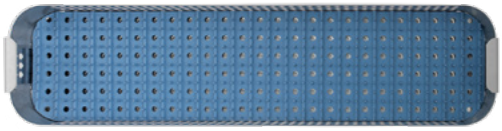
Item no.	Description
3.40.544	Screwdriver, long 3.5 mm hex

Item no.	Description
3.40.545	U-joint screwdriver 3.5 mm hex

Item no.	Description
51.34.1095	Empty tray



Item no.	Description
51.34.1108	Tray module large (no content)
51.34.1109	Silicone mat large



Item no.	Description
51.34.1110	Tray module small (no content)
51.34.1111	Silicone mat small

RM Classic instrumentation 3rd gen., 55.01.0021A

Item no.	Description
55.01.0030	RM Classic lid
55.01.0019	RM Classic insert f/drilling instrument.

Item no.	Description
55.02.0703	RM Classic aim.device straight 3rd gen.

Item no.	Description
55.02.0600	RM Classic aiming device curved 3rd gen.

Item no.	Description
55.02.0000	RM Classic positioning guide 3rd gen.

Item no.	Description
55.02.0003	Fixation ring for 55.02.0000

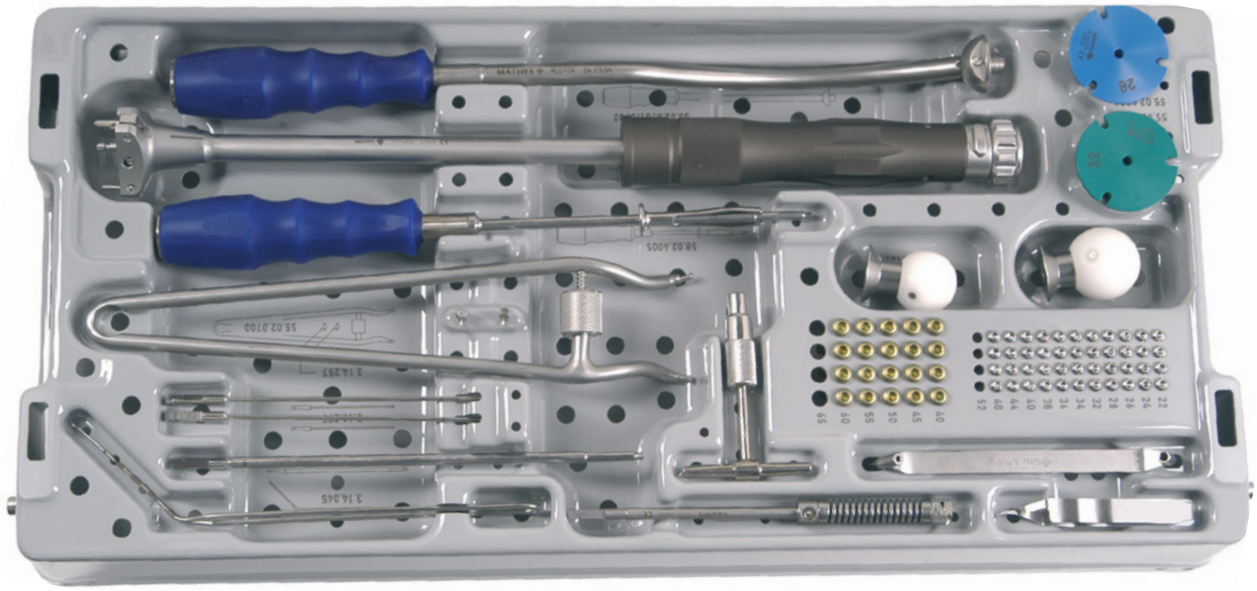
Item no.	Description
55.02.0109	Rod for positioning guide

Item no.	Description
55.02.0604	RM Classic trial cup 46 3rd gen.
55.02.0605	RM Classic trial cup 48 3rd gen.
55.02.0606	RM Classic trial cup 50 3rd gen.
55.02.0607	RM Classic trial cup 52 3rd gen.
55.02.0608	RM Classic trial cup 54 3rd gen.
55.02.0609	RM Classic trial cup 56 3rd gen.
55.02.0610	RM Classic trial cup 58 3rd gen.
55.02.0611	RM Classic trial cup 60 3rd gen.
55.02.0612	RM Classic trial cup 62 3rd gen.
55.02.0613	RM Classic trial cup 64 3rd gen.
55.02.0614	RM Classic trial cup 66 3rd gen.
55.02.0615	RM Classic trial cup 68 3rd gen.

Item no.	Description
55.02.1903	RM Classic reaming shaft, flex. 3rd gen.

Item no.	Description
55.02.0599	RM Classic centring bolt 3rd gen.

Item no.	Description
55.02.1901	RM Classic counters. reamer flex. 3rd gen.



Item no.	Description
55.01.0020	RM Classic insert f/insertion instrum.

Item no.	Description
55.02.0520	Handle with gripping head 28

Item no.	Description
55.02.0532	Rod with impact plate

Item no.	Description
55.02.0336	RM Classic centring head 28 3rd gen.
55.02.0337	RM Classic centring head 32 3rd gen.

Item no.	Description
55.02.0700	RM Classic cup holder 3rd gen.

Item no.	Description
55.02.0701	RM Classic impactor straight 3rd gen.

Item no.	Description
55.02.0702	RM Classic impactor curved 3rd gen.

Item no.	Description
55.02.4101	RM Classic impactor top 28 2–3 gen.
55.02.4102	RM Classic impactor top 32 2–3 gen.

Item no.	Description
3.14.014	Drill sleeve 2 and 3.1

Item no.	Description
3.14.545	Shaft, flexible

Item no.	Description
3.14.254	Drill bit 3.1 for flex. shaft

Item no.	Description
3.40.275	Flat drill 2 flex.

Item no.	Description
3.14.285	Depth gauge

Item no.	Description
3.40.502	T-handle w/quick coupling

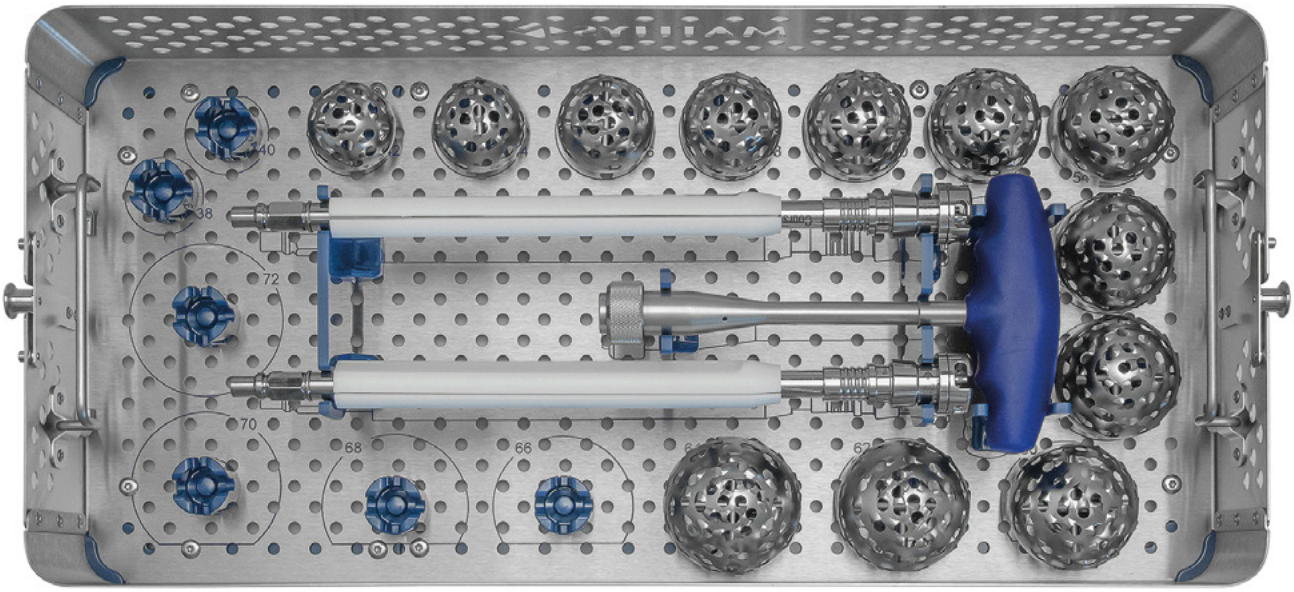
Item no.	Description
3.14.253	Tap 3.5

Item no.	Description
3.14.045	Depth gauge

Item no.	Description
58.02.4005	Screwdriver hex. 2.5 w/holding sleeve

Item no.	Description
51.34.0946	U-joint screwdriver 3.5 mm hex

Acetabular Reamer Instrumentation, 51.34.1081A



Acetabular Reamers, even sizes

Item no.	Description
51.34.0360	Tray f/even acetabular reamers
51.34.0679	Lid f/acetabular reamer tray

Item no.	Description
5440.00.5	Acetabular reamer 40 std.
5442.00.5	Acetabular reamer 42 std.
5444.00.5	Acetabular reamer 44 std.
5446.00.5	Acetabular reamer 46 std.
5448.00.5	Acetabular reamer 48 std.
5450.00.5	Acetabular reamer 50 std.
5452.00.5	Acetabular reamer 52 std.
5454.00.5	Acetabular reamer 54 std.
5456.00.5	Acetabular reamer 56 std.
5458.00.5	Acetabular reamer 58 std.
5460.00.5	Acetabular reamer 60 std.
5462.00.5	Acetabular reamer 62 std.
5464.00.5	Acetabular reamer 64 std.
5466.00.5	Acetabular reamer 66 std.
5468.00.5	Acetabular reamer 68 std.
5470.00.5	Acetabular reamer 70 std.
5472.00.5	Acetabular reamer 72 std.

Acetabular reamers, odd sizes

Item no.	Description
51.34.0361	Tray f/odd acetabular reamers
51.34.0679	Lid f/acetabular reamer tray

Item no.	Description
5439.00.5	Acetabular reamer 39 std.
5441.00.5	Acetabular reamer 41 std.
5443.00.5	Acetabular reamer 43 std.
5445.00.5	Acetabular reamer 45 std.
5447.00.5	Acetabular reamer 47 std.
5449.00.5	Acetabular reamer 49 std.
5451.00.5	Acetabular reamer 51 std.
5453.00.5	Acetabular reamer 53 std.
5455.00.5	Acetabular reamer 55 std.
5457.00.5	Acetabular reamer 57 std.
5459.00.5	Acetabular reamer 59 std.
5461.00.5	Acetabular reamer 61 std.
5463.00.5	Acetabular reamer 63 std.
5465.00.5	Acetabular reamer 65 std.
5467.00.5	Acetabular reamer 67 std.
5469.00.5	Acetabular reamer 69 std.
5471.00.5	Acetabular reamer 71 std.

Item no.	Description
58.02.4008	Handle with quick coupling

Item no.	Description
5244.00.4	Adaptor for reamer (AO)

Optional instruments (not a part of the set)

Item no.	Description
3.40.535	Coupling for AO-ASIF air drill

Item no.	Description
999-0060-300	Coupling for Hudson drive

Offset Reamer Handles (not a part of the set)

Locked reamer connection

Item no.	Description
H0032100699	MIS HANDLE ATTACCO UNIVERSALE-CONN. AO

Open reamer connection

Item no.	Description
H0032100999	MIS HANDLE HC- CONN. AO

Locked reamer connection

Item no.	Description
51.34.1150A	Offset reamer driver – Locking – AO
51.34.1169A	Offset reamer driver – Locking – Zimmer
51.34.1171A	Offset reamer driver – Locking – Hudson

Open reamer connection

Item no.	Description
51.34.1151A	Offset reamer driver – Open – AO
51.34.1170A	Offset reamer driver – Open – Zimmer
51.34.1172A	Offset reamer driver – Open – Hudson

Spare parts for 51.34.1150A / 51.34.1151A / 51.34.1169A – 51.34.1172A

Item no.	Description
4250-7048	Offset body

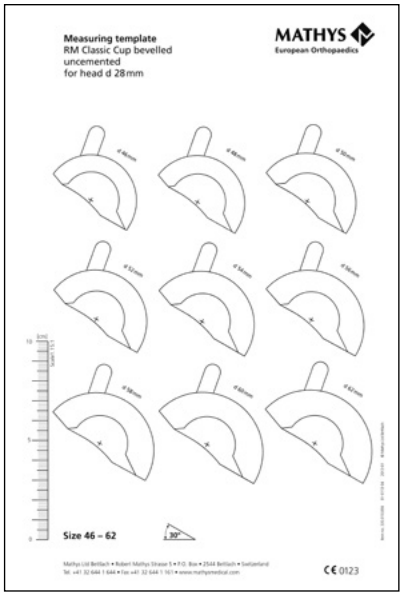
Item no.	Description
4250-7031	Offset cover

Item no.	Description
4250-7035	Offset drive train - Open
4250-7036	Offset drive train - Locking - Crossbar

Item no.	Description
4250-7034	Offset coupling – Large AO
4250-7032	Offset coupling – Zimmer
4250-7033	Offset coupling – Hudson

Item no.	Description
4250-7012	Handle

6. Measuring templates



Item no.	Description
330.010.094	RM Classic cup bevelled 28 mm
336.918.32.2	RM Classic cup bevelled 32 mm
336.918.31.0	RM Classic cup full profile 32 mm
336.918.33.0	RM Classic revision cup 32 mm

7. References

1 Ihle, M, et al. The results of the titanium-coated RM acetabular component at 20 years. J Bone Joint Surg [Br]. 90(10), 2008, pp. 1284-1290.

2 Pakvis, D, et al. A cementless elastic monoblock socket in young patients: a ten to 18-year clinical and radiological follow-up. Int Orthop. 35(10), 2011, pp. 1445-51.

3 Gasser, B. Biomechanical principles and studies. [book auth.] G Horne. The RM Cup - Long-term experience with an elastic Monobloc acetabular implant. s.l. : Einhorn-Presse Verlag, 2008, pp. 16-22.

4 Morscher, EW and Dick, W. Cementless fixation of "isoelastic" hip endoprostheses manufactured from plastic materials. Clin Orthop Relat Res. 176, 1983, pp. 77-87.

5 Manley, MT, Ong, KL and Kurtz, SM. The potential for bone loss in acetabular structures following THA. Clin Orthop Relat Res. 453, 2006, pp. 246-53.

6 Bombelli, R and Mathys, R. Cementless isoelastic RM total hip prosthesis. J R Soc Med. 75, 1982, pp. 588-97.

7 Mathys, R. History - how the success story of the RM Classic Cup started. [book auth.] G Horne. The RM Cup - Long-term experience with an elastic Monobloc acetabular implant. s.l. : Einhorn-Presse Verlag, 2008, pp. 11-15.

8 Isaacson, BM and Jeyapalina, S. Osseointegration: a review of the fundamentals for assuring cementless skeletal fixation. Orthopedic Research and Reviews. 2014, 6, pp. 55-65.

9 Gasser, B. Coating of the RM cup. [book auth.] G Horne. The RM Cup - Long-term experience with an elastic Monobloc acetabular implant. 2008, pp. 23-30.

10 Morscher, EW. Current status of acetabular fixation in primary total hip arthroplasty. Clin Orthop Relat Res. 274, 1992, pp. 172-93.

11 Scheerlinck, T. Primary hip arthroplasty templating on standard radiographs. A stepwise approach. Acta Orthop Belg. 76(4), 2010, pp. 432-42.

12 Wasielewski, RC. Acetabular anatomy and the transacetabular fixation of screws in total hip arthroplasty. J Bone Joint Surg Am. 72(4), Apr 1990, pp. 501-8.

13 Ezzet, KA and McCauley, JC. Use of Intraoperative X-rays to Optimize Component Position and Leg Length During Total Hip Arthroplasty. The Journal of Arthroplasty. 29, 2014, pp. 580–585.

14 Judas, FM et al. A technique to remove a well-fixed titanium-coated RM acetabular cup in revision hip arthroplasty. J Orthop Surg Res. 6:31, Jun 2011, pp. 1-5.

8. Symbols

Manufacturer

Caution

CE 0123 CE marking for medical devices of Risk Class Ir, Is, Im, II and III

EC REP Authorized representative in the European Community/European Union

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