



**SURGICAL TECHNIQUE**

# RM Pressfit



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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 Pressfit cup is the further development of the RM Classic cup system, which has proven its worth in many years of clinical use.<sup>1,2</sup>

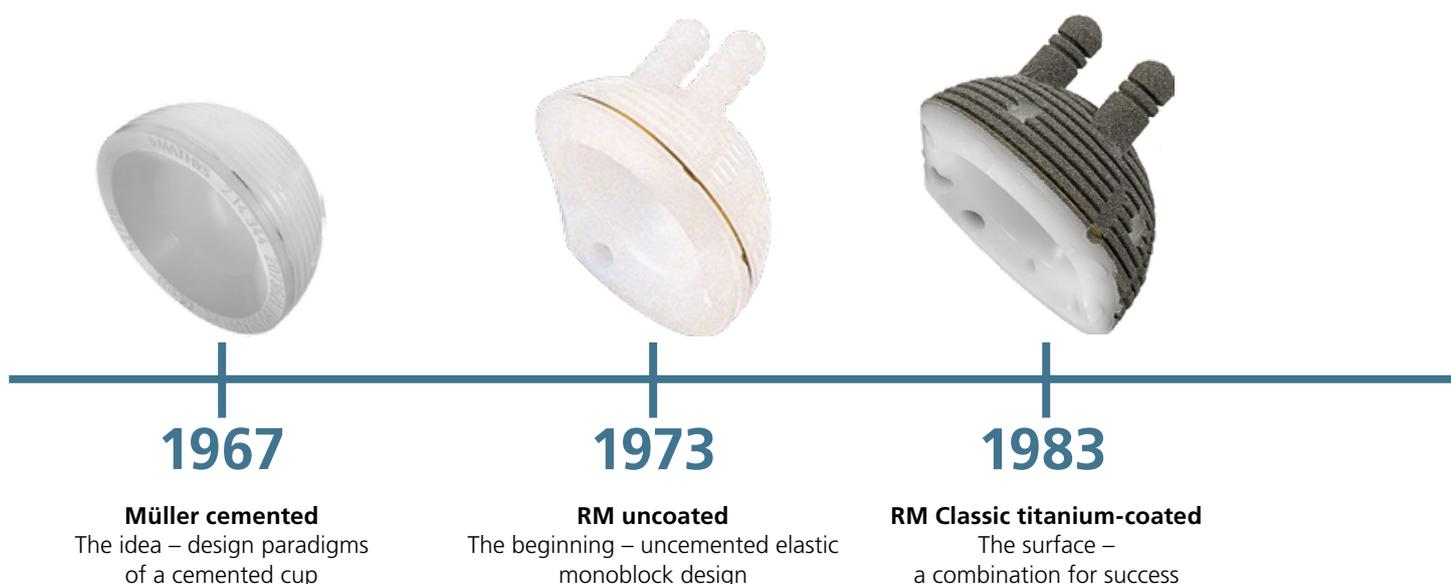
Since 2002, the RM Pressfit cup has demonstrated good medium-term clinical results.<sup>3,4,5</sup>

The RM Pressfit cup system offers a wide range of components with the aim of meeting the individual anatomical and functional requirements of the patient and his/her hip joint.

With the RM Pressfit vitamys cup, the portfolio was expanded to include the option of a high-quality low-abrasion material for sliding couplings that enables use of larger ball head diameters (up to 36 mm) for increased joint stability and a greater range of motion.<sup>6</sup> The RM Pressfit vitamys cup also yields encouraging initial results.<sup>7,8,9</sup>

## RM philosophy

Many years of clinical experience with elastic monoblock cups



The sophisticated design of the implants and a structured instrumentation allow the surgeon to implant the system with only a few surgical steps, using various surgical approaches.

In combination with the optimys stem and a Mathys ceramic head, the RM Pressfit vitamys cup forms a «bone preservation» system.<sup>10</sup> The objective is, among other things, to address clinical issues such as abrasion<sup>7,9</sup>, stress shielding<sup>11</sup> and individual reconstruction of patient anatomy.<sup>12</sup>



# 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

## **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 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

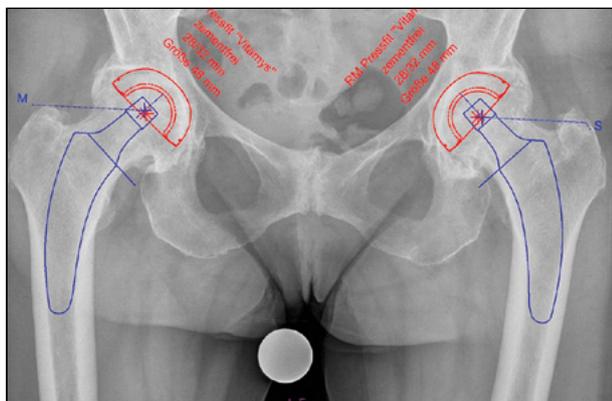


Fig. 1

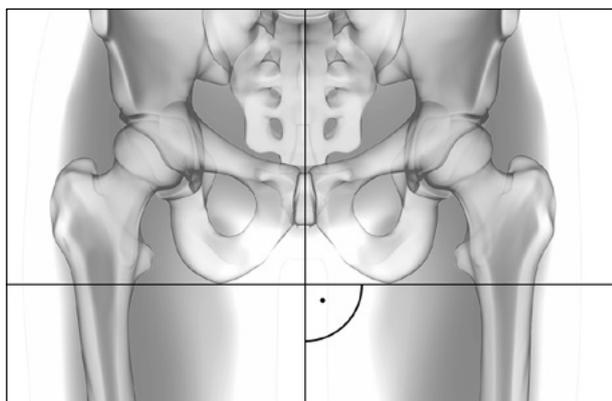


Fig. 2

Preoperative planning can be performed using standard radiographs or a digital planning system (Fig. 1). 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. In this way, possible problems can be identified even before the surgery.<sup>13</sup>

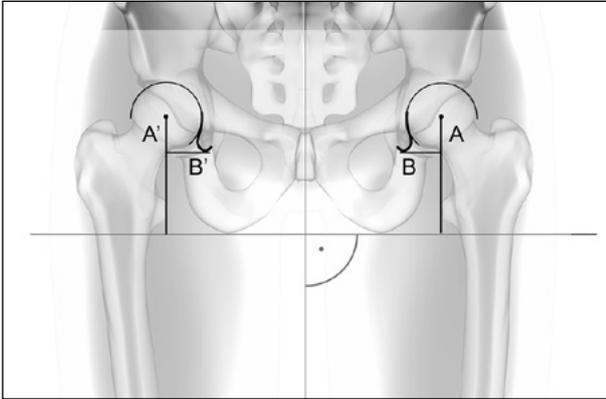
Moreover, the preoperative planning serves as a basis for the intraoperative reconciliation using fluoroscopic control.

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

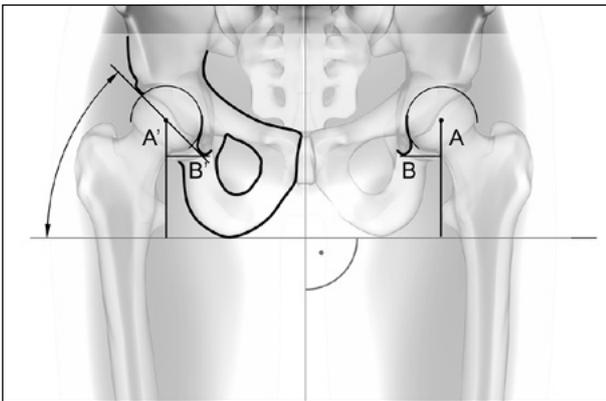
The planning is ideally performed on a pelvic X-ray which is taken with the patient in a supine or standing position. In doing so, the central beam is aligned on the symphysis with 20-degree internal rotation of the femurs. The scale is calculated with the known options, that is, either with a defined calibration object or using a known and reconstructable film focal distance (Fig. 2).

### **Remark**

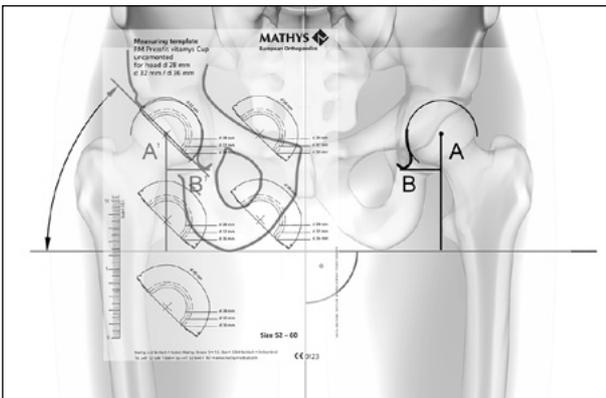
*In case of significantly deformed hips, planning on the healthy side should be considered in order to transfer this subsequently to the affected side.<sup>13</sup>*



**Fig. 3**



**Fig. 4**



**Fig. 5**

### 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

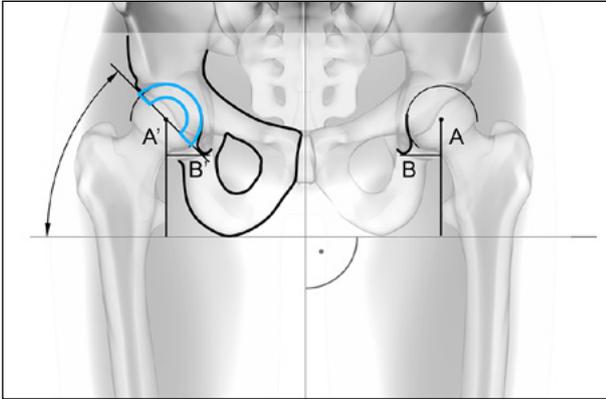
*In case of leg length compensation, adaptation of leg length with the aid of the ischial tuberosity can be considered already now.*

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. 3).

### Planning the cup

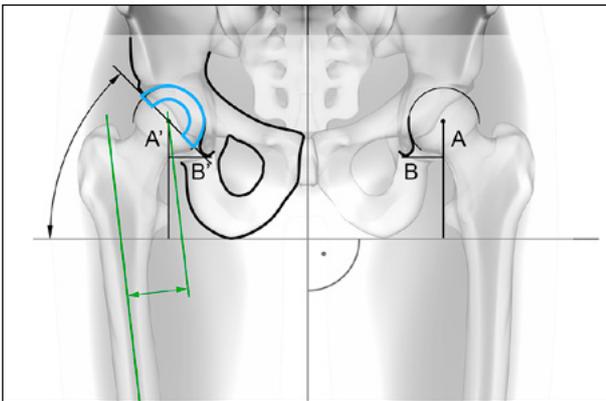
The cup position in relation to the pelvis must take into account the acetabular contours, the centre of rotation of the hip, Köhler's teardrop and the necessary angle of inclination of the cup (Fig. 4).

To find a suitable cup size, several cup templates are successively positioned on 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 on the level of the acetabular roof as well as on that of Köhler's teardrop (Fig. 5).



**Fig. 6**

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 teardrop). The implantation depth is then determined (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 centre of rotation of the hip (Fig. 7).

#### **Remark**

*The planning of the stem is shown using the optimys short stem as an example. Other stem systems may also be used.*

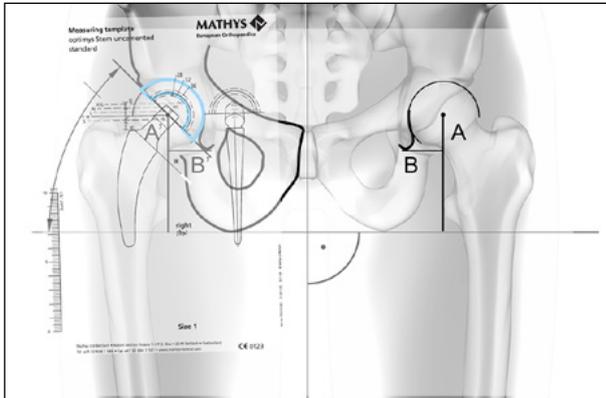
#### **Planning of the optimys stem**

The calcar-guided optimys stem is available in a standard and in a lateral version.

#### **Remark**

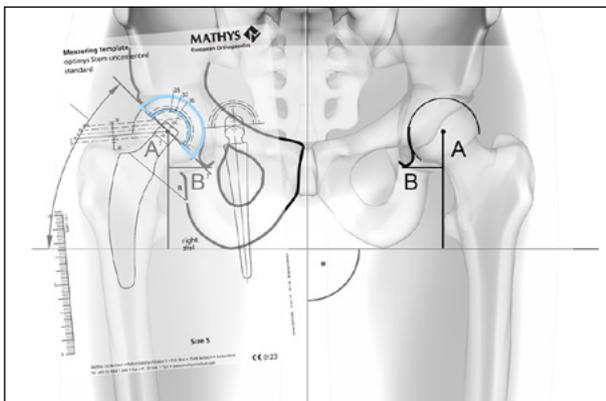
*The offset difference between the standard and the lateral version is 5 mm. In this case, the length of the stem neck and the CCD angle of the stem remain the same. The length of the stem neck increases by 1.4 mm per stem size.*

*Offset and leg length may vary depending on the position of the stem (varus/normal/valgus).*



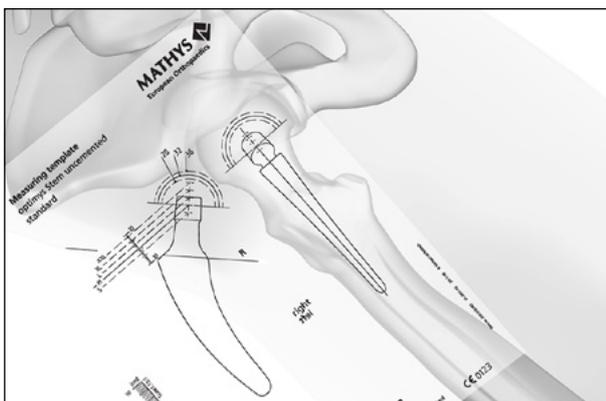
**Fig. 8**

After the centre of rotation has been determined, the stem is placed on the centre of rotation (neck length M) with the aid of the stem template and positioned flat along the calcar. The smallest stem size is used for this (Fig. 8).



**Fig. 9**

Then the final size of the stem is determined. This is achieved once the stem lies as flat as possible on the calcar in anterior-posterior projection and directly on the lateral cortical bone in the distal region (Fig. 9).



**Fig. 10**

In the axial projection, the stem is fitted so that it has ventral and dorsal contact proximally. The tip of the stem is positioned to rest on the dorsal cortical bone, depending on the antetorsion of the femoral neck (Fig. 10).

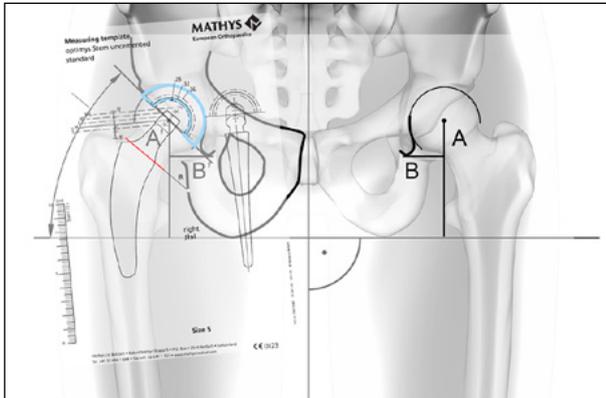


Fig. 11

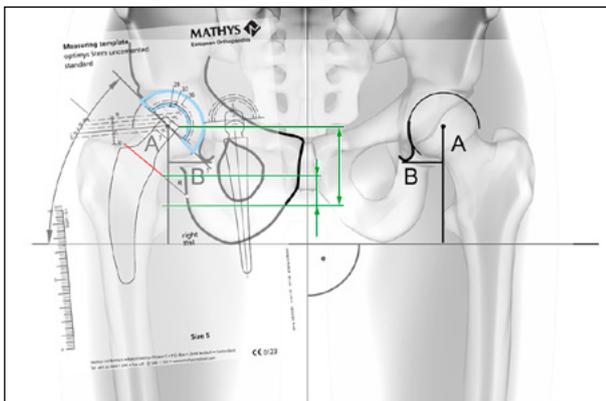


Fig. 12



Fig. 13

The stem position thus achieved determines the level and angle of the resection, which can now be plotted (Fig. 11).



*In the case of a varus hip with a long femoral neck, the offset to be reconstructed is larger than in the case of a valgus hip. During the femoral neck resection, it must be ensured that this is performed more medially or proximally than in the case of coxa valga, according to the preoperative planning. The stem axis of the femoral component in relation to the femoral stem axis thus varies depending on the resection level of the femoral neck. Additional fine adjustment of the reconstruction can be performed via the various neck lengths of the ball head.<sup>14, 15</sup>*

For intraoperative control of the resection level, the distance of the same to the lesser trochanter is measured. To determine the stem introduction depth, the distance from the lesser trochanter to the medial end of the stem cone is determined (Figs. 12, 13).

### 3. Surgical technique

The RM Pressfit cup can be implanted using various surgical approaches and positioning of the patient. The decision 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. 14

#### Femoral osteotomy

The femoral neck is resected according to the preoperative planning (Fig. 14). In 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.

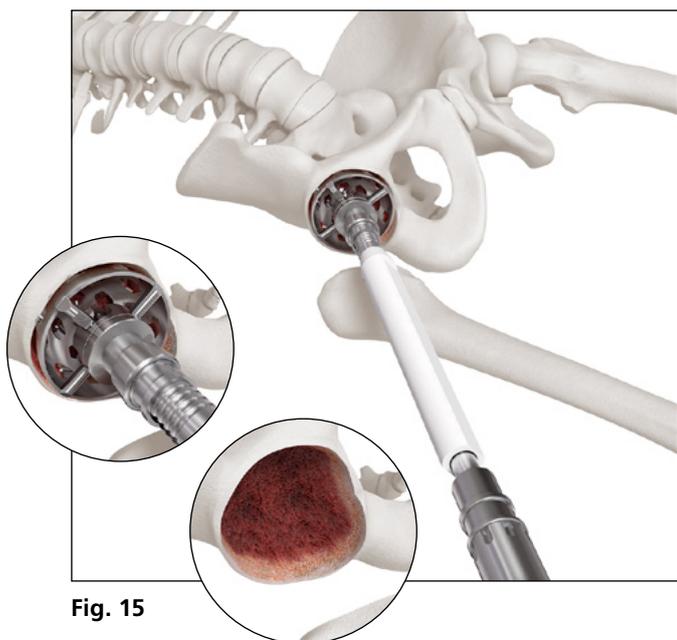


Fig. 15

#### 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. 15).

#### Remark

*Ensure that the acetabulum is reamed down to the depth defined in the preoperative planning.  
For secure pressfit anchoring, the acetabulum must be reamed as hemispherical as possible.  
Careful debridement of the acetabular rim is important to avoid drawing in soft tissues between the bone and the cup during implantation.*

### Implantation of the cup

Using the trial cup, the sphericity of the reamed acetabulum as well as congruence and implant depth of the selected cup size is checked. The trial cup is undersized by 1 mm compared to the acetabular reamer, while the final implant has a size-dependent equatorial oversizing (Fig. 16).

In standard cases, a cup implant whose size designation matches that of the most recently used straight reamer is used.

### Remark

To avoid premature locking of the cup in case of smaller cup sizes or hard bone conditions, reduced oversizing of the implant can be preferable. This is done by reaming the acetabulum with an odd diameter and using a cup whose size designation is 1 mm smaller than the most recently used odd reamer (e. g., reaming of the acetabulum to 55 mm and selection of a cup of size 54 mm).

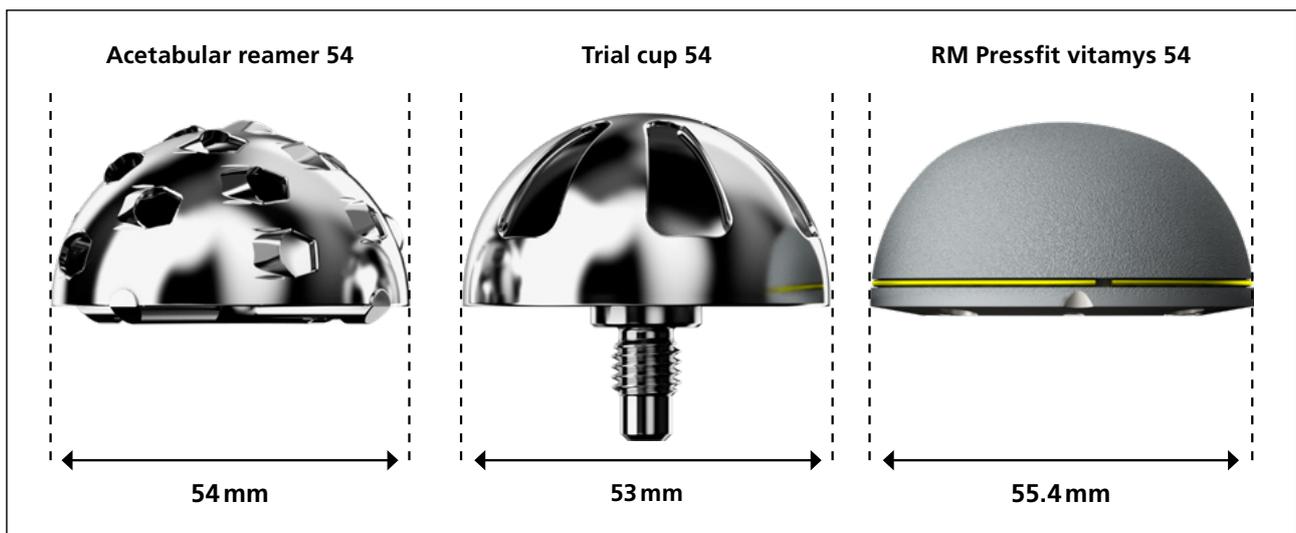
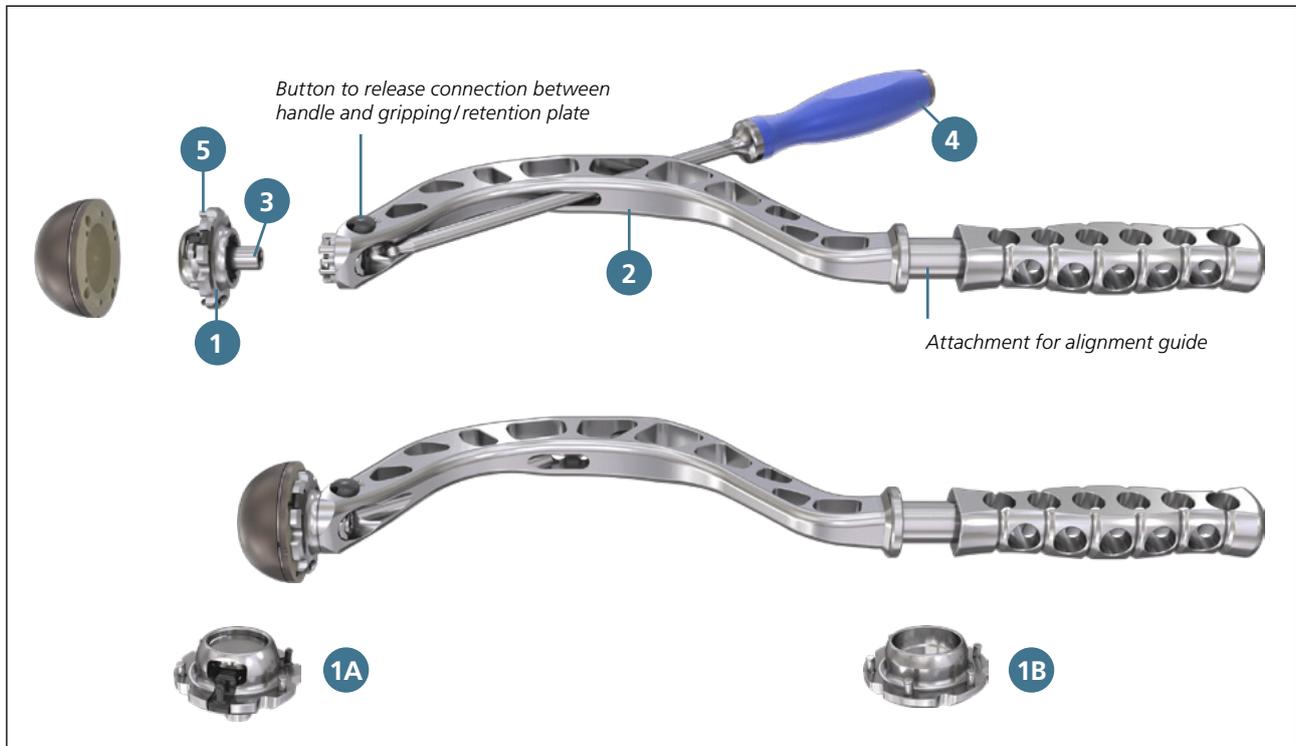


Fig. 16

**Handling of cup insertion instruments**  
**Curved cup positioner (Fig. 17)**



**Fig. 17**

Gripping plates with movable pins (1A):

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

Retention plates with fixed pins (1B):

Retention plates with fixed pins do not have a pin locking screw.

1. Connection of the retention plate (1) with the curved handle (2) (click-on)
2. Alignment and insertion of the metal pins (5) of the retention plate into the cup (cup has to sit flush on the retention plate)
3. After cup implantation, disconnection of the retention plate from the cup by axial extraction of the curved cup positioner

## Straight cup positioner (Fig. 18)

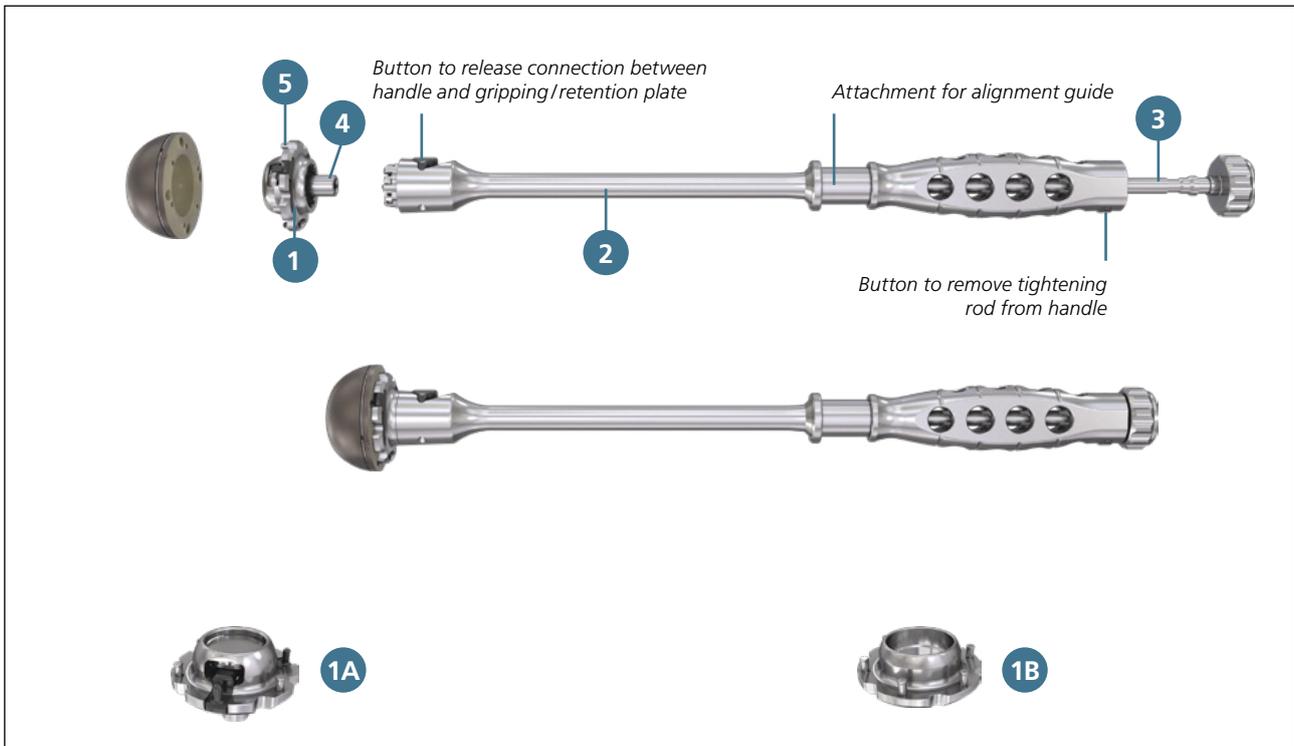


Fig. 18

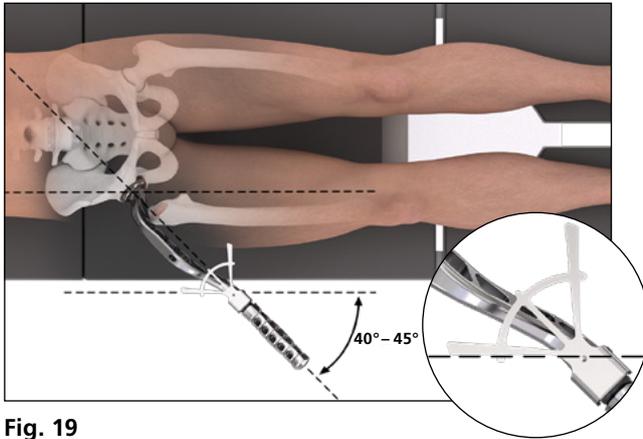
### Gripping plates with movable pins (1A):

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

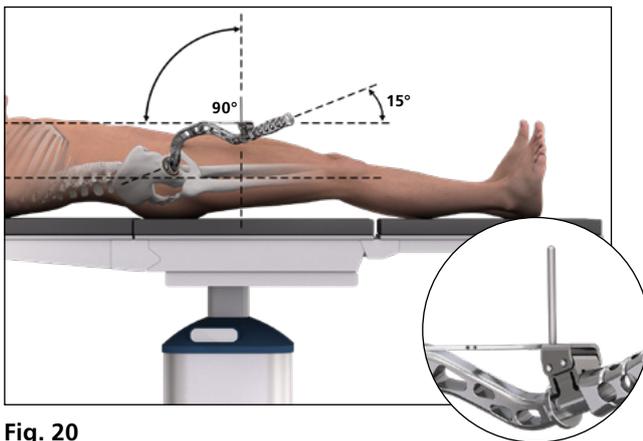
### Retention plates with fixed pins (1B):

Retention plates with fixed pins do not have a pin locking screw.

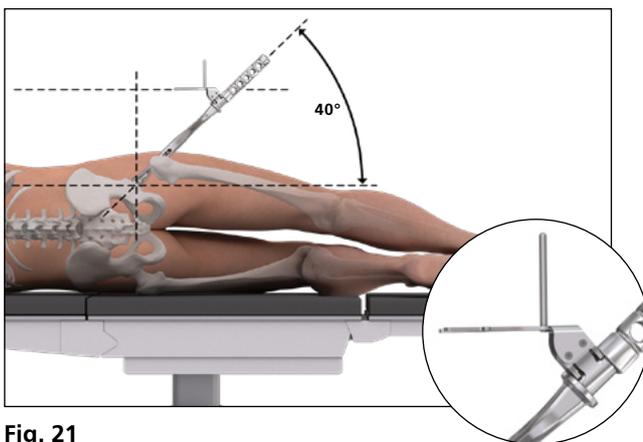
1. Connection of the retention plate (1) with the straight handle (2) (click-on)
2. Insertion of the tightening rod (3) into the straight handle (click-in)
3. Alignment and insertion of the metal pins (5) of the retention plate into the cup (cup has to sit flush on the retention plate)
4. After cup implantation, disconnection of the retention plate from the cup by axial extraction of the straight cup positioner



**Fig. 19**



**Fig. 20**



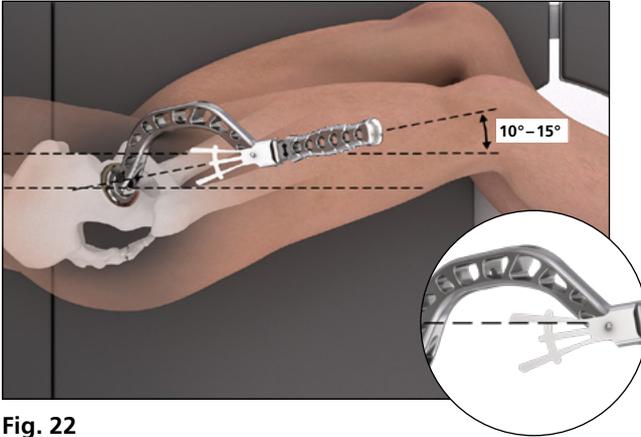
**Fig. 21**

The alignment guide is used as a positioning aid to determine the desired inclination and anteversion of the implant.

The alignment guide is attached to the handle of the straight or curved cup positioner with the arrow pointing towards the cup. In patients in supine decubitus position the alignment guide indicates an inclination of 40°–45° and an anteversion of 15° (Figs. 19, 20). In patients in lateral decubitus position, the alignment guide indicates an inclination of 40° and an anteversion of 10°–15° (Figs. 21, 22).

**Remark**

*Precise adjustment of inclination and anteversion of the cup is crucial to avoid impingement or dislocation of the artificial hip joint; individual acetabular and femoral anatomy has to be considered. Generally, an inclination of 40°–50° and an anteversion of 10°–20° is recommended.*



**Fig. 22**



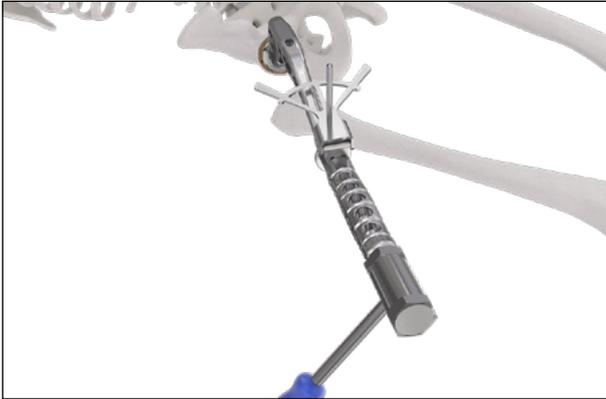
**Fig. 23**

Due to the strong primary stability of the RM Pressfit cup, the correct orientation of the cup is determined before final impaction (Fig. 23) according to anatomical landmarks, with the use of the alignment guide or fluoroscopy.



**Fig. 24**

In case of implantation of an RM Pressfit hooded cup, the shoulder of the implant must be correctly aligned to match the patient's anatomy. For intraoperative orientation, the centre of the shoulder segment is indicated with the 0 line on the gripping and retention plates (Fig 24).



**Fig. 25**

While maintaining the desired cup alignment, the implant is impacted into the acetabulum (Fig. 25).

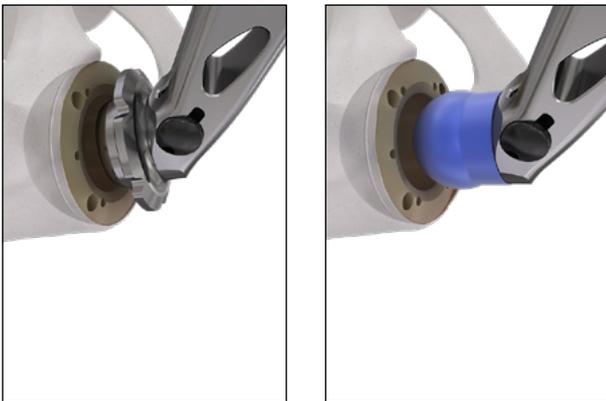


*During cup implantation, titanium particles may detach from the surface of the implant. At the time of reduction, the joint space must be free of any foreign debris.*

**Remark**

*Intraoperative verification of the cup position with the image converter is recommended.<sup>16</sup>*

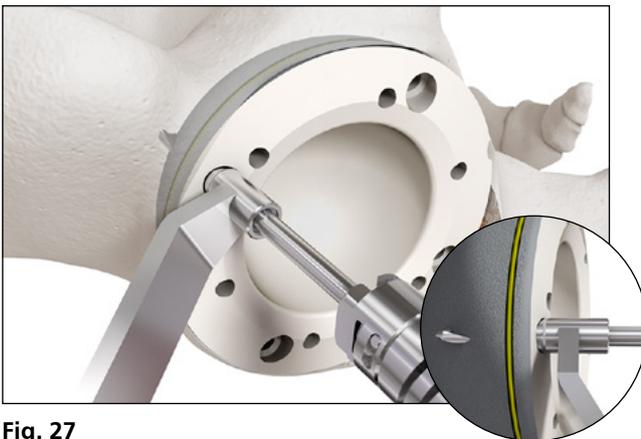
If necessary, the cup is repositioned or driven in with the seating plate or the seating ball until it reaches the final position (Fig. 26).



**Fig. 26**

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

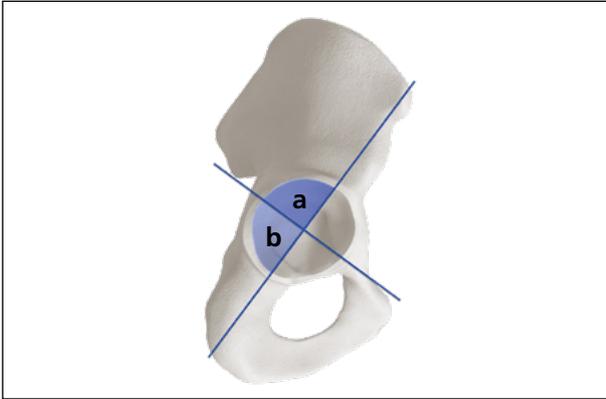
The RM Pressfit cup generally achieves a high degree of primary stability. If the cup is not sufficiently stable, slightly deeper reaming of the same size or increasing the size of the cup can be considered if enough bone is available.



**Fig. 27**

**Additional screw fixation**

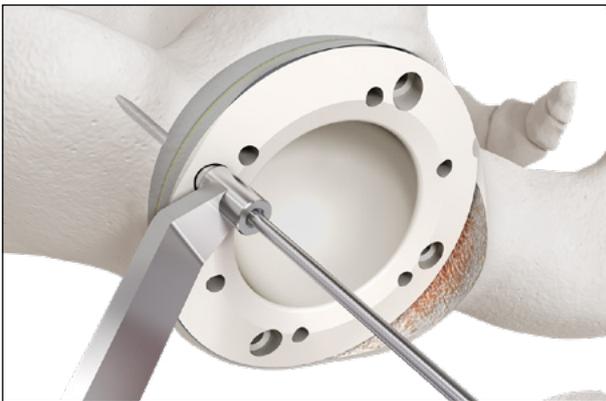
The RM Pressfit cup can be optionally secured in the pelvic bone with 4.0 mm special screws. The cup contains four predrilled screw holes at the edge of the cup. In RM Pressfit vitamys cups the holes are not entirely pierced. They can be opened intraoperatively using the 3.1 mm drill bit in combination with the flexible shaft (Fig. 27).



**Fig. 28**



*To minimise the risk of nerve and vessel injury, the position and 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. 28). The cup and thus the position of the predrilled holes has to be placed accordingly.<sup>17</sup>*



**Fig. 29**

The drill sleeve is pushed completely into the screw hole at the edge of the cup, and the screw hole is pre-drilled in the acetabulum using the 2 mm flat drill (Fig. 29).

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



**Fig. 30**

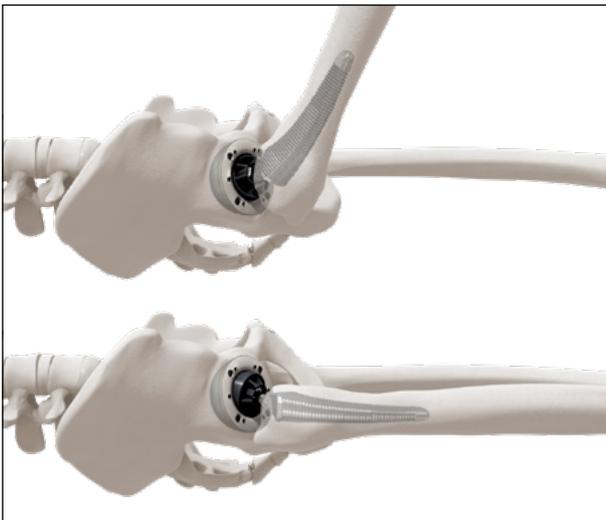
After determining the screw length using the depth gauge, the corresponding screw is inserted using the screwdriver (Fig. 30).

**Remark**

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



**Fig. 31**



**Fig. 32**

After preparation of the femoral canal, the joint is reduced with a rasp or final stem implant in place and a trial head that fits the inner diameter of the cup (Fig. 31). After the trial reduction, the hip joint is moved through its full range of motion.

In doing so, attention must 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 (Fig. 32).

At this point of time, it is still possible to modify the neck length of the head and the stem variant (standard/lateral).

An intraoperative X-ray image can additionally be taken, using the image converter, for final control.

**Remark**

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

After implantation of the stem and the ball head that fits the articulation diameter of the cup, care must be taken that the joint space is free from any foreign debris at the time reduction.

Depending on the approach, muscle insertions are re-attached, and the wound is closed layer by layer.

**Remark**

*In case of a revision of the RM Pressfit cup, the edge of the cup must first 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.<sup>18</sup>*

*Alternatively, the cup can be carefully removed using chisels or a universal cup removal instrumentation.*

*Detailed information on suitable removal instruments can be requested from the local Mathys agency.*

## 4. Optional inserters for non-hooded cups

### Curved RM Pressfit Positioner

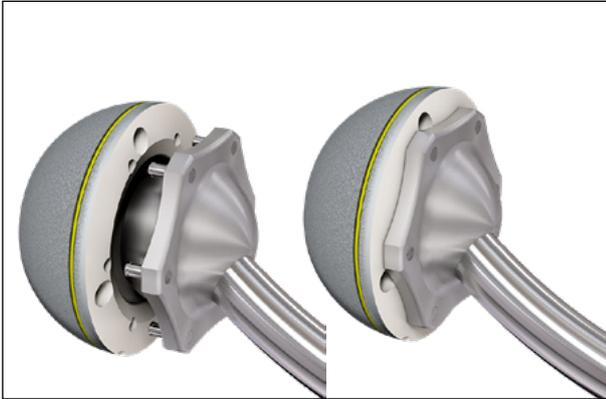


Fig. 33

The six metal pins on the cup positioner are aligned with the small holes in the entrance plane of the RM Pressfit cup and then pushed into the openings of the cup until the implant rests flush on the positioning plate (Fig. 33).

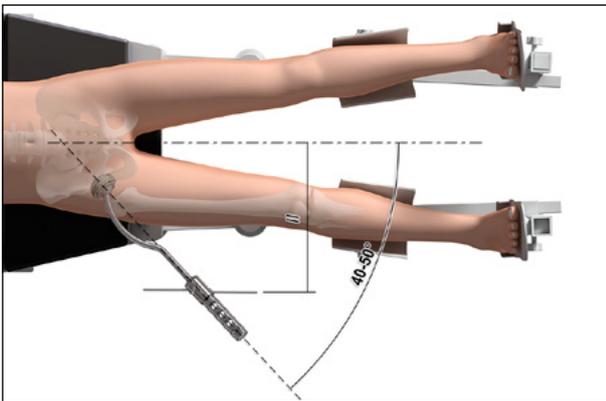


Fig. 34

The positioning guide is used as a positioning aid to determine the desired inclination and anteversion.

The positioning guide is attached to the handle of the cup positioner. It is designed for an inclination of 45° and an anteversion of 20° (Figs. 34, 35).

#### **Remark**

*Precise adjustment of inclination and anteversion of the cup is crucial to avoid impingement or dislocation of the artificial hip joint; individual acetabular and femoral anatomy has to be considered. Generally, an inclination of 40°–50° and an anteversion of 10°–20° is recommended.*

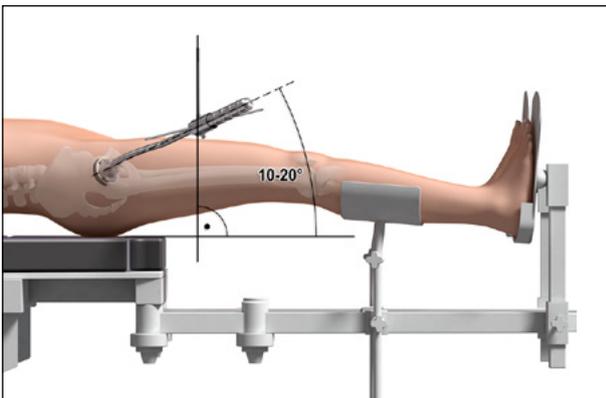


Fig. 35



**Fig. 36**

Due to the strong primary stability of the RM Pressfit cup, the appropriate orientation of the cup is determined before final impaction (Fig. 36) according to anatomical landmarks, with the use of the alignment guide or fluoroscopy.



**Fig. 37**

While maintaining the desired cup alignment, the implant is then impacted into the acetabulum (Fig. 37).



**Fig. 38**

Then the cup positioner is removed from the implant using slight tilting motions in order to release the pins from the cup and remove the instrument (Fig. 38).

If necessary, the cup is repositioned or driven in with the post-impactor until it reaches the final position.

## Straight Handle with Gripping Head

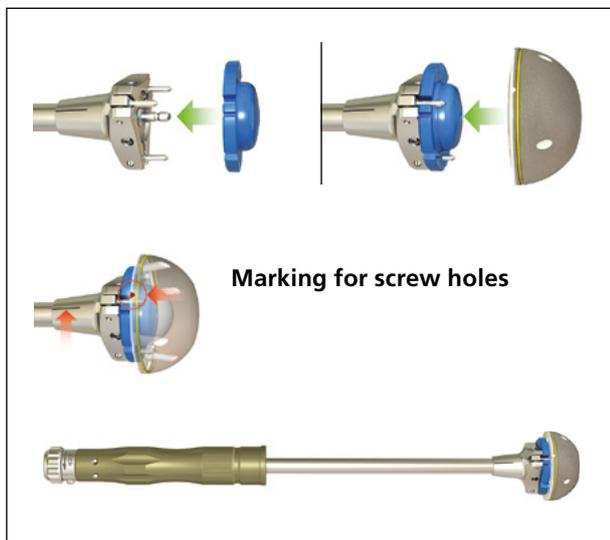


Fig. 39

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

Subsequently, the centring head with the corresponding articulation diameter is selected, and the cup is placed.

To check the positioning, there are marks on the cup and on the gripping head of the straight cup impactor (Fig. 39).

These marks must be aligned congruently.

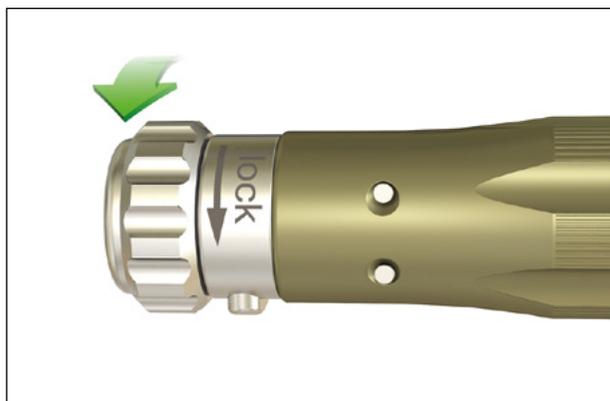


Fig. 40

By rotating the impact plate clockwise (Fig. 40), the pins in the guide holes of the cup spread apart. This results in a stable connection of the components.

Use of the positioning guide is shown in chapter 4.1.

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.

If necessary, the cup is repositioned or driven in with the post-impactor until it reaches the final position.

# 5. Implants

## Uncemented cups



### RM Pressfit vitamys

| Cup size | 28mm articulation | 32 mm articulation | 36 mm articulation |
|----------|-------------------|--------------------|--------------------|
| 42       | 52.34.0029*       | –                  | –                  |
| 44       | 52.34.0032 *      | –                  | –                  |
| 46       | 52.34.0033        | 52.34.0049*        | –                  |
| 48       | 52.34.0034        | 52.34.0052         | –                  |
| 50       | 52.34.0035        | 52.34.0053         | 52.34.0066*        |
| 52       | 52.34.0036        | 52.34.0054         | 52.34.0067         |
| 54       | 52.34.0037        | 52.34.0055         | 52.34.0068         |
| 56       | 52.34.0038        | 52.34.0056         | 52.34.0069         |
| 58       | 52.34.0039        | 52.34.0057         | 52.34.0070         |
| 60       | 52.34.0040        | 52.34.0058         | 52.34.0071         |
| 62       | 52.34.0041        | 52.34.0059         | 52.34.0072         |
| 64       | 52.34.0042        | 52.34.0060         | 52.34.0073         |
| 66       | 52.34.0043        | 52.34.0061         | 52.34.0074         |
| 68       | 52.34.0044        | 52.34.0062         | 52.34.0075         |
| 70       | 52.34.0045        | 52.34.0063         | 52.34.0076         |

**Material:** vitamin E highly cross-linked polyethylene (VEPE), TiCP coated, Ti6Al4V  
*\*no screw holes*



### RM Pressfit hooded

| Cup size | 28mm articulation | 32 mm articulation | 36 mm articulation |
|----------|-------------------|--------------------|--------------------|
| 42       | 52.34.1222*       | –                  | –                  |
| 44       | 52.34.1223*       | –                  | –                  |
| 46       | 52.34.1224        | 52.34.1237*        | –                  |
| 48       | 52.34.1225        | 52.34.1238         | –                  |
| 50       | 52.34.1226        | 52.34.1239         | 52.34.1250*        |
| 52       | 52.34.1227        | 52.34.1240         | 52.34.1251         |
| 54       | 52.34.1228        | 52.34.1241         | 52.34.1252         |
| 56       | 52.34.1229        | 52.34.1242         | 52.34.1253         |
| 58       | 52.34.1230        | 52.34.1243         | 52.34.1254         |
| 60       | 52.34.1231        | 52.34.1244         | 52.34.1255         |
| 62       | 52.34.1232        | 52.34.1245         | 52.34.1256         |
| 64       | 52.34.1233        | 52.34.1246         | 52.34.1257         |
| 66       | 52.34.1234        | 52.34.1247         | 52.34.1258         |
| 68       | 52.34.1235        | 52.34.1248         | 52.34.1259         |
| 70       | 52.34.1236        | 52.34.1249         | 52.34.1260         |

**Material:** vitamin E highly cross-linked polyethylene (VEPE), TiCP coated, Ti6Al4V  
*\*no screw holes*

## Uncemented cups



### RM Pressfit UHMWPE

| Cup size | 28 mm articulation | 32 mm articulation |
|----------|--------------------|--------------------|
| 46       | 55.22.1046         | –                  |
| 48       | 55.22.1048         | –                  |
| 50       | 55.22.1050         | –                  |
| 52       | 55.22.1052         | 55.22.3252         |
| 54       | 55.22.1054         | 55.22.3254         |
| 56       | 55.22.1056         | 55.22.3256         |
| 58       | 55.22.1058         | 55.22.3258         |
| 60       | 55.22.1060         | 55.22.3260         |
| 62       | 55.22.1062         | 55.22.3262         |
| 64       | 55.22.1064         | 55.22.3264         |

**Material:** UHMWPE, Ti6Al4V, TiCP

### Special screws Ø 4 mm

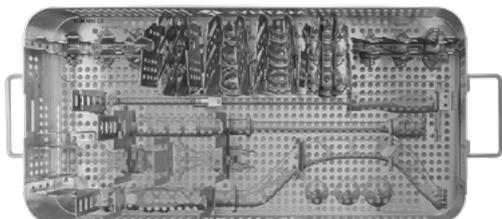


| Length | Item no. / TiCP (sterile) | Item no. / TiCP (non-sterile) |
|--------|---------------------------|-------------------------------|
| 22 mm  | 4.14.015S                 | 4.14.015                      |
| 24 mm  | 4.14.014S                 | 4.14.014                      |
| 26 mm  | 4.14.013S                 | 4.14.013                      |
| 28 mm  | 4.14.000S                 | 4.14.000                      |
| 32 mm  | 4.14.001S                 | 4.14.001                      |
| 34 mm  | 4.14.002S                 | 4.14.002                      |
| 36 mm  | 4.14.003S                 | 4.14.003                      |
| 38 mm  | 4.14.004S                 | 4.14.004                      |
| 40 mm  | 4.14.005S                 | 4.14.005                      |
| 44 mm  | 4.14.006S                 | 4.14.006                      |
| 48 mm  | 4.14.007S                 | 4.14.007                      |
| 52 mm  | 4.14.008S                 | 4.14.008                      |

**Material:** TiCP

## 6. Instruments

### RM Pressfit instrumentation with modular cup positioner, 51.34.1100A



| 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                      |
|------------|----------------------------------|
| 51.34.1116 | Alignment guide supine decubitus |



| Item no.   | Description                       |
|------------|-----------------------------------|
| 51.34.1117 | Alignment guide lateral decubitus |



| Item no.   | Description                      |
|------------|----------------------------------|
| 51.34.1118 | Vertical rod for alignment guide |



| Item no.   | Description                    |
|------------|--------------------------------|
| 51.34.1120 | Gripping plate RM Pressfit ø28 |
| 51.34.1121 | Gripping plate RM Pressfit ø32 |
| 51.34.1122 | Gripping plate RM Pressfit ø36 |



| Item no.   | Description                           |
|------------|---------------------------------------|
| 51.34.1126 | Gripping plate RM Pressfit hooded ø28 |
| 51.34.1127 | Gripping plate RM Pressfit hooded ø32 |
| 51.34.1128 | Gripping plate RM Pressfit hooded ø36 |



| Item no.   | Description                     |
|------------|---------------------------------|
| 51.34.1123 | Retention plate RM Pressfit ø28 |
| 51.34.1124 | Retention plate RM Pressfit ø32 |
| 51.34.1125 | Retention plate RM Pressfit ø36 |



| Item no.   | Description                            |
|------------|--|
| 51.34.1143 | Retention plate RM Pressfit hooded ø28 |
| 51.34.1144 | Retention plate RM Pressfit hooded ø32 |
| 51.34.1145 | Retention plate RM Pressfit hooded ø36 |



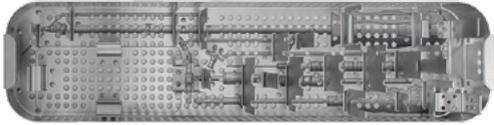
| Item no.   | Description                   |
|------------|-------------------------------|
| 51.34.1130 | Seating plate low profile ø28 |
| 51.34.1131 | Seating plate low profile ø32 |
| 51.34.1132 | Seating plate low profile ø36 |



| Item no.   | Description              |
|------------|--------------------------|
| 51.34.1133 | Seating plate hooded ø28 |
| 51.34.1134 | Seating plate hooded ø32 |
| 51.34.1135 | Seating plate hooded ø36 |



| Item no.   | Description      |
|------------|------------------|
| 51.34.1136 | Seating ball ø28 |
| 51.34.1137 | Seating ball ø32 |
| 51.34.1138 | Seating ball ø36 |



| 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               |
|----------|---------------------------|
| 3.40.502 | T-handle w/quick coupling |



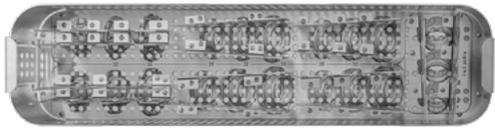
| Item no. | Description |
|----------|-------------|
| 3.14.253 | Tap 3.5     |



| Item no. | Description |
|----------|-------------|
| 3.14.285 | Depth gauge |

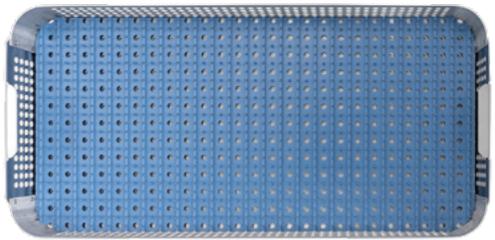


| Item no.   | Description                           |
|------------|---------------------------------------|
| 58.02.4005 | Screwdriver hex. 2.5 w/holding sleeve |



**Optional tray components** (not a part of the set)

| Item no.   | Description |
|------------|-------------|
| 51.34.1095 | Empty tray  |



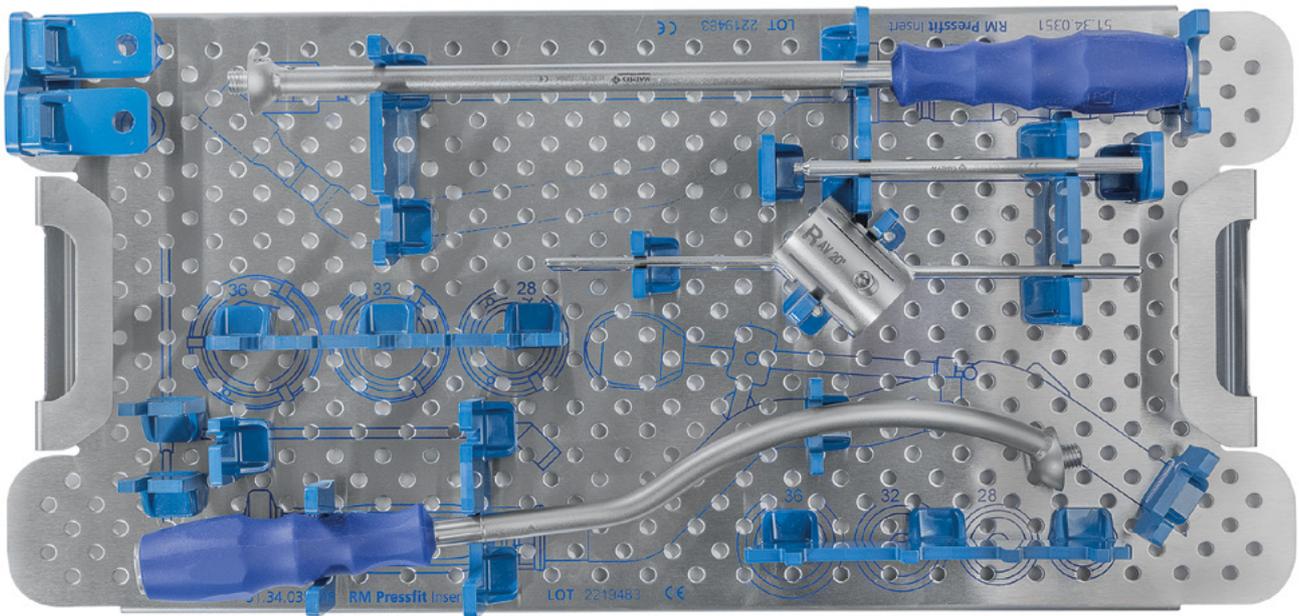
| Item no.   | Description                             |
|------------|---|
| 51.34.1104 | Tray module small for positioner plates |



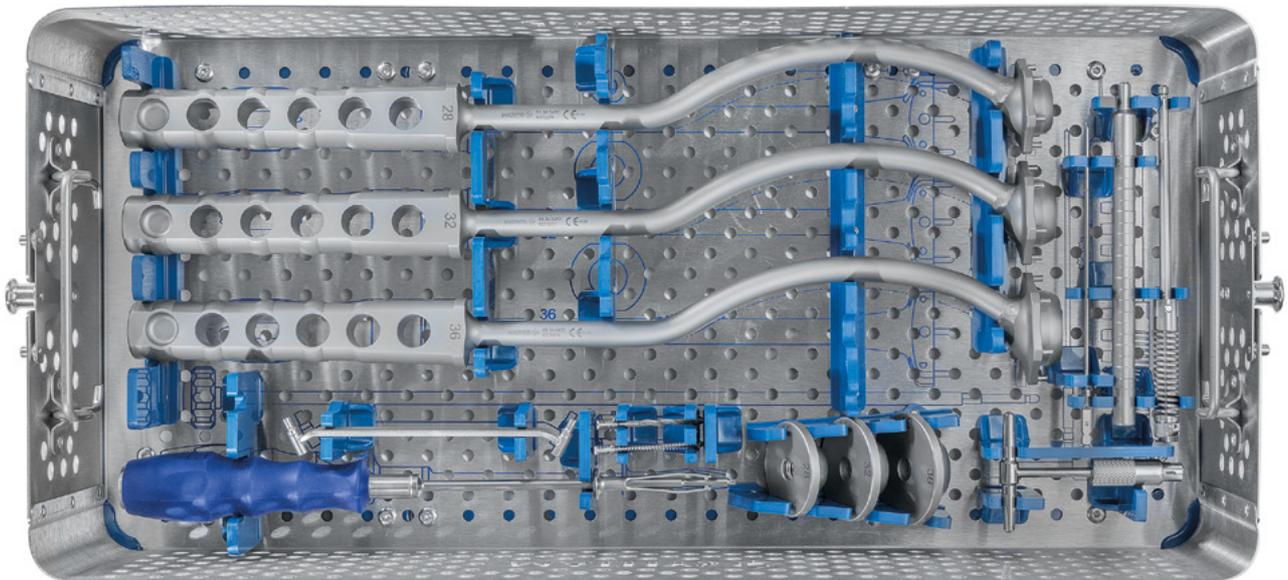
| Item no.   | Description                    |
|------------|--------------------------------|
| 51.34.1108 | Tray module large (no content) |
| 51.34.1109 | Silicone mat large             |

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

**RM Pressfit instrumentation, 55.03.5006A (for non-hooded cups only)**



Item no. 51.34.0351 **RM Pressfit insert**



Item no. 51.34.0468 **RM Pressfit tray**  
No Picture / Item no. 51.34.0350 **RM Pressfit lid**



| Item no.   | Description               |
|------------|---------------------------|
| 51.34.0451 | RM Pressfit positioner 28 |
| 51.34.0452 | RM Pressfit positioner 32 |
| 51.34.0453 | RM Pressfit positioner 36 |

| Item no.   | Description                  |
|------------|------------------------------|
| 55.02.0520 | Handle with gripping head 28 |
| 55.02.0521 | Handle with gripping head 32 |
| 55.02.0522 | Handle with gripping head 36 |

| Item no.   | Description           |
|------------|-----------------------|
| 55.02.0532 | Rod with impact plate |

| Item no.   | Description                  |
|------------|------------------------------|
| 51.34.0196 | RM Pressfit Centring head 28 |
| 51.34.0197 | RM Pressfit Centring head 32 |
| 51.34.0198 | RM Pressfit Centring head 36 |

| Item no.   | Description           |
|------------|-----------------------|
| 55.02.5531 | Positioning guide 45° |

| Item no.   | Description               |
|------------|---------------------------|
| 55.02.0109 | Rod for positioning guide |

| Item no.   | Description                                       |
|------------|---|
| 55.02.0701 | RM Classic impactor straight 3 <sup>rd</sup> gen. |

| Item no.   | Description                                     |
|------------|---|
| 55.02.0702 | RM Classic impactor curved 3 <sup>rd</sup> gen. |

| Item no.   | Description                       |
|------------|-----------------------------------|
| 51.34.0676 | RM Pressfit head post-impactor 28 |
| 51.34.0677 | RM Pressfit head post-impactor 32 |
| 51.34.0678 | RM Pressfit head post-impactor 36 |

| Item no.   | Description                            |
|------------|--|
| 55.02.5536 | RM Pressfit post-impact.head w/brim 28 |
| 55.02.5537 | RM Pressfit post-impact.head w/brim 32 |
| 55.02.5538 | RM Pressfit post-impact.head w/brim 36 |



| 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               |
|----------|---------------------------|
| 3.40.502 | T-handle w/quick coupling |



| Item no. | Description |
|----------|-------------|
| 3.14.253 | Tap 3.5     |



| Item no. | Description |
|----------|-------------|
| 3.14.285 | Depth gauge |



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

#### Optional instruments (not a part of the set)



| Item no.   | Description                 |
|------------|-----------------------------|
| 55.02.5205 | RM Pressfit coupling handle |

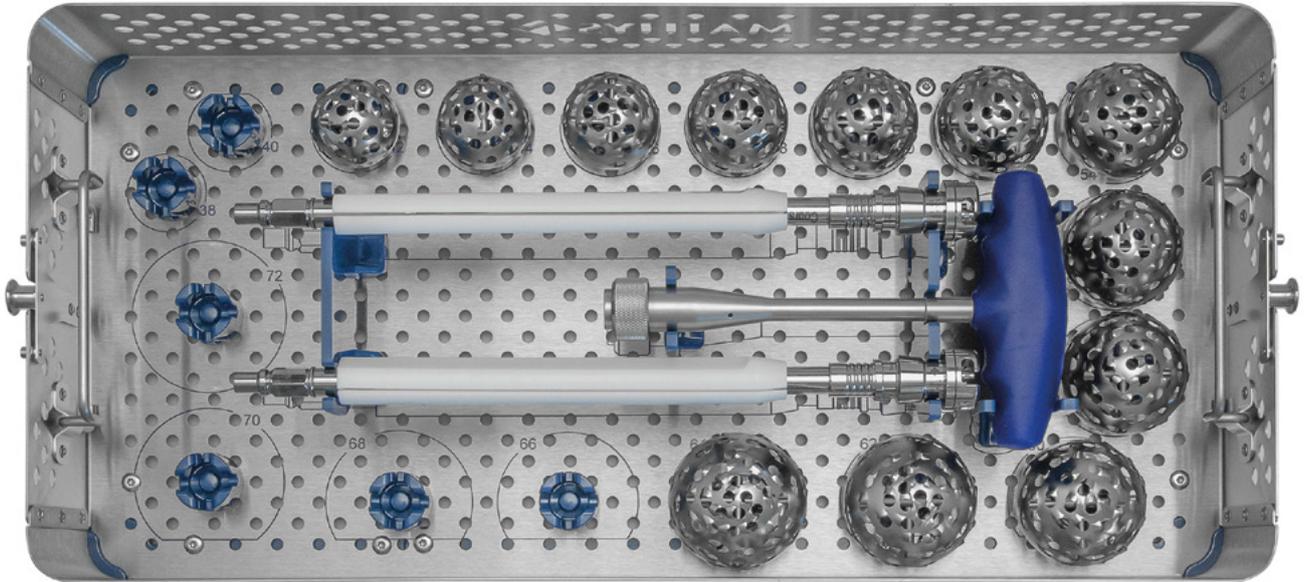


| Item no.   | Description         |
|------------|---------------------|
| 58.02.4207 | MIS Coupling handle |



| Item no.   | Description                              |
|------------|--|
| 55.02.7002 | Transition piece for 55.02.5205          |
| 55.02.7003 | Transition piece, angled, for 58.02.4207 |

## 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 |

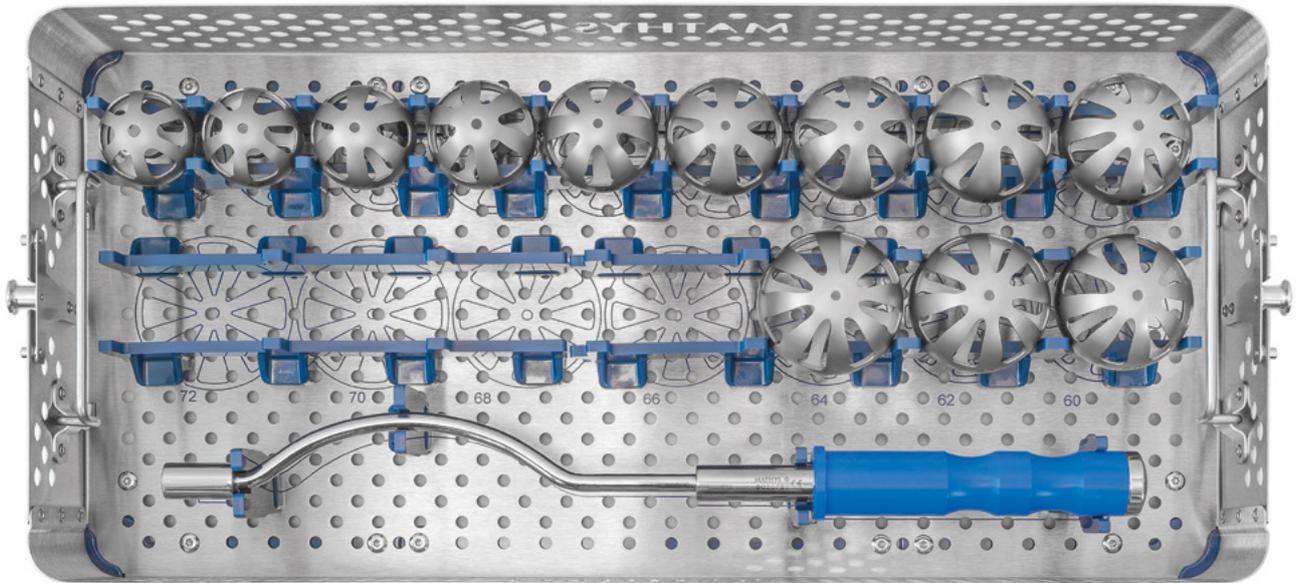
| Item no.  | Description  |
|-----------|--------------|
| 4250-7031 | Offset cover |

| 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      |

**Trial cup instrumentation, 55.03.5002A**



| Item no.   | Description                        |
|------------|------------------------------------|
| 51.34.0346 | Basic Tray for 42–72 mm trial cups |
| 51.34.0347 | Lid for trial-cup tray             |

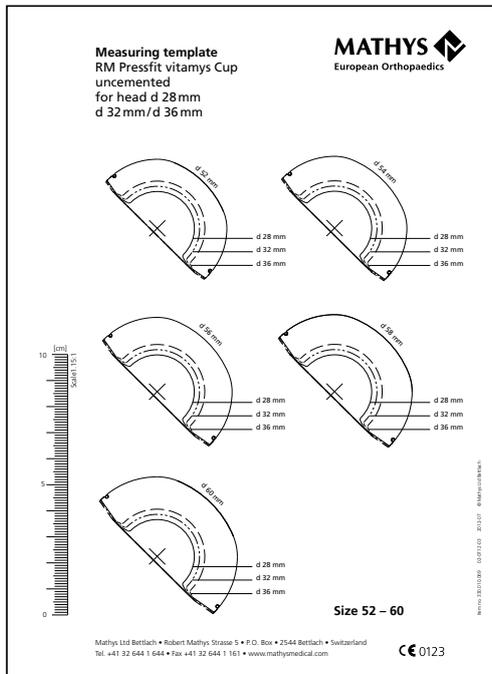


| Item no.  | Description  |
|-----------|--------------|
| 4042.00.2 | Trial Cup 42 |
| 4044.00.2 | Trial Cup 44 |
| 4046.00.2 | Trial Cup 46 |
| 4048.00.2 | Trial Cup 48 |
| 4050.00.2 | Trial Cup 50 |
| 4052.00.2 | Trial Cup 52 |
| 4054.00.2 | Trial Cup 54 |
| 4056.00.2 | Trial Cup 56 |
| 4058.00.2 | Trial Cup 58 |
| 4060.00.2 | Trial Cup 60 |
| 4062.00.2 | Trial Cup 62 |
| 4064.00.2 | Trial Cup 64 |
| 4066.00.2 | Trial Cup 66 |
| 4068.00.2 | Trial Cup 68 |
| 4070.00.2 | Trial Cup 70 |
| 4072.00.2 | Trial Cup 72 |



| Item no. | Description         |
|----------|---------------------|
| 5248.00  | Seat for trial cups |

## Measuring template



| Item no.    | Description                 |
|-------------|-----------------------------|
| 330.010.002 | RM Pressfit UHMWPE 1.15:1   |
| 330.010.069 | RM Pressfit vitamys 1.15:1* |

\* Used for RM Pressfit vitamys and RM Pressfit hooded

## 7. References

- <sup>1</sup> 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.
- <sup>2</sup> 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.
- <sup>3</sup> Wyss, T, et al. Five-year results of the uncemented RM pressfit cup clinical evaluation and migration measurements by EBRA. *J Arthroplasty*. 28(8), 2013, pp. 1291-6.
- <sup>4</sup> Lafon, L, et al. Cementless RM Pressfit Cup: a clinical and radiological study of 91 cases with at least four years follow-up. *Orthop Traumatol Surg Res*. 100 (4 Suppl), 2014, pp. 225-9.
- <sup>5</sup> Erivan, R, et al. RM Pressfit® cup: good preliminary results at 5 to 8 years follow-up for 189 patients. *Hip Int*. 26(4), 2016, pp. 386 - 391.
- <sup>6</sup> Girard, J. Femoral head diameter considerations for primary total hip arthroplasty. *Orthopaedics & Traumatology: Surgery & Research*. 101, 2015, pp. 25–S29.
- <sup>7</sup> Beck, M, et al. Oxidation prevention with vitamin E in a HXLPE isoelastic monoblock pressfit cup. Preliminary results. [book auth.] K (Ed.) Knahr. *Total Hip Arthroplasty-Wear Behaviour of Different Articulations*. s.l. : Springer Berlin Heidelberg, 2012, pp. 21-31.
- <sup>8</sup> Halma, JJ, et al. An uncemented iso-elastic monoblock acetabular component: preliminary results. *J Arthroplasty*. 30(4), 2015, pp. 615-21.
- <sup>9</sup> Rochcongar, G, et al. Creep and wear in Vitamin E - Infused Highly Cross-Linked Polyethylene Cups for Total Hip Arthroplasty. *J Bone Joint Surg Am*. 100(2), Jan 2018, pp. 107-114.
- <sup>10</sup> [www.bonepreservation.com](http://www.bonepreservation.com).
- <sup>11</sup> Kastius, A, Schoeniger, R and Beck, M. Acetabular osseointegration and bone density one year after RM Pressfit vitamys cup implantation. Poster. SGOT Basel, Switzerland, 2012.
- <sup>12</sup> Kutzner, KP, et al. Reconstruction of femoro-acetabular offsets using a short-stem. *Int Orthop*. 39(7), 2015, pp. 1269-75.
- <sup>13</sup> Scheerlinck, T. Primary hip arthroplasty templating on standard radiographs. A stepwise approach. *Acta Orthop Belg*. 76(4), 2010, pp. 432-42.
- <sup>14</sup> Kutzner, KP, et al. One-stage bilateral implantation of a calcar-guided short-stem in total hip arthroplasty. *Operative Orthopädie und Traumatologie*. 29(2), 2017, pp. 1-13.
- <sup>15</sup> Kutzner, KP and Pfeil, J. Individualized Stem-positioning in Calcar-guided Short-stem Total Hip Arthroplasty. *J Vis Exp*. 132, 2018.
- <sup>16</sup> Ezzet, KA and McCauley, JC. Use of Intraoperative X-rays to Optimize Component Position and Leg Length During Total Hip Arthroplasty. *J Arthroplasty*. 29, 2014, pp. 580–585.
- <sup>17</sup> Wasielewski, RC, et al. Acetabular anatomy and the transacetabular fixation of screws in total hip arthroplasty. *J Bone Joint Surg Am*. 72(4), Apr 1990, pp. 501-8.
- <sup>18</sup> Judas, FM, Dias, RF und Lucas, FM. A technique to remove a well-fixed titanium-coated RM acetabular cup in revision hip arthroplasty. *J Orthop Surg Res*. 6:31, Jun 2011.

## 8. Symbols



Manufacturer



Caution



Authorized Representative



EU Importer

**CE** 0123 CE marking medical devices of Risk Class II and III

|                  |  |                       |   |
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