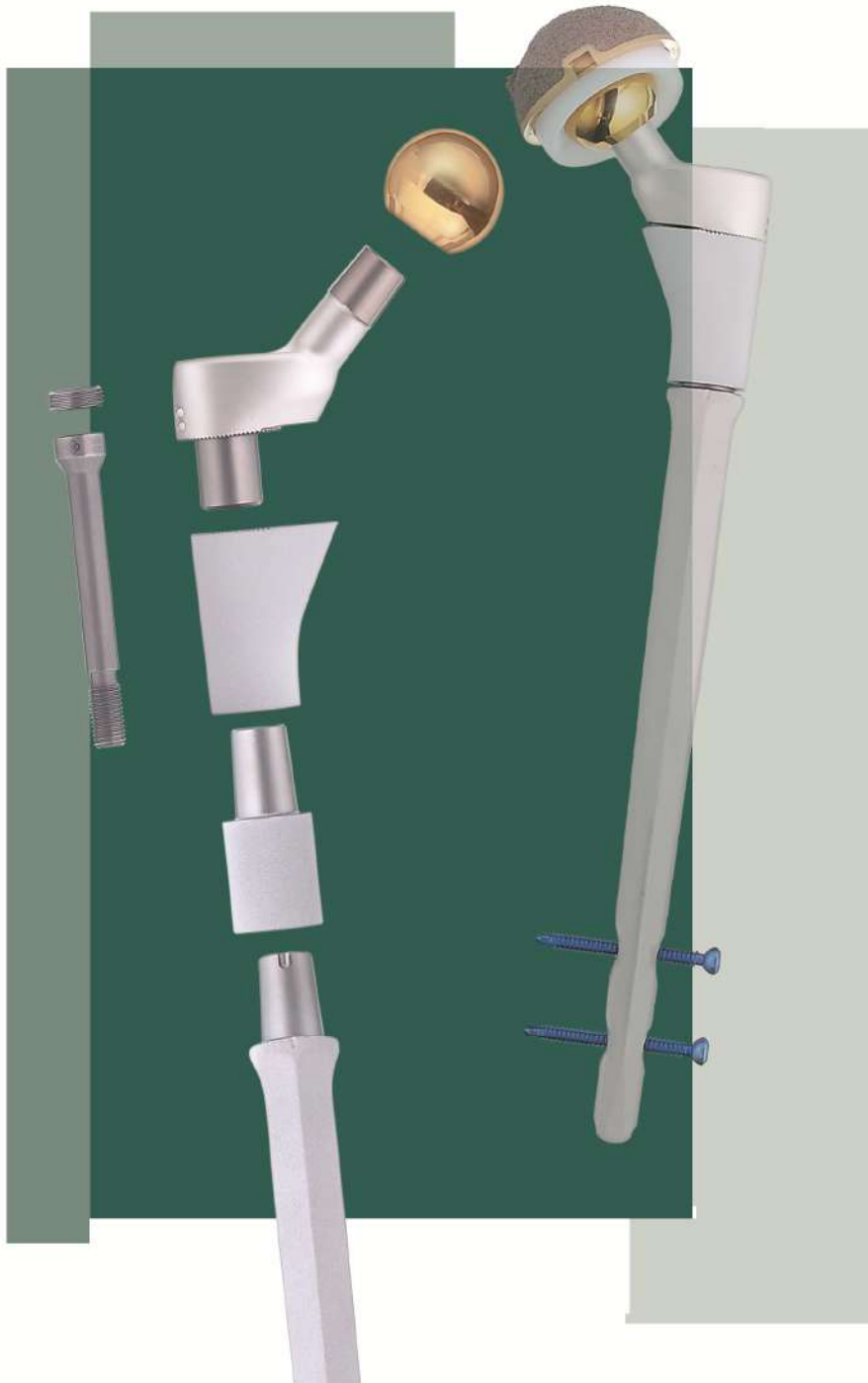


MUTARS[®] RS



revision hip system

ES surgical technique



implantcast

MUTARS® RS

revision hip system ES surgical technique (Easy System)

MUTARS® was developed in co-operation with
Prof. Dr. W. Winkelmann,
and Prof. Dr. G. Gosheger,
Clinic and Polyclinic for General Orthopedics
at the University Hospital of Münster, Germany.
MUTARS® has been in successful clinical use since 1992.

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

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The Silver coating

Early and late infections represent the most severe complications of tumour arthroplastic treatments. Although local and systemic antibiotic treatments are considered, the scientific literature reports of infection rates from 5 to 35 percent. Reasons for these high rates are, for example, the long surgery time, the large incisions and the immunosuppression due to chemo therapy and radio therapy as well as the increasing resistance of the bacteria against antibiotic drugs.

The anti-infective effect of silver ions has been known for centuries i.e. the disinfection of potable water is based on this principle. This special property of silver is used for the silver coated components of MUTARS® to build an intelligent protection against bacteria. Until now only non-articulating surfaces and surfaces without direct bony contact are coated with silver.

In the catalogue information of this brochure you can find the supplement *S indicating which MUTARS® components are available in a silver coated version. The eight digit REF number receives an addition after the last digit (e.g. 5220-0020S).

It is not permitted to flush the wound with antiseptics that contain Iodine or heavy metals (such as Betaisodona®)

Iodine and Silver form insoluble salt complexes not only with the silver ions that are released post-operatively but also with the silver layer of the implant that will be covered with an insoluble silver-iodine (AgI) film. This will destroy the anti-adhesive protective layer irreversibly. Iodine or heavy metal based antiseptics may not be used at any time. Alternatively solutions containing H₂O₂ – (like Lavasept®, Prontosan® or similar) can be used.

The silver coating can be destroyed in its function by two factors: large amounts of albumin from seroma or hematoma can bind larger amounts of silver (1 mol Albumin inactivates 3 moles Silver ions). This should be minimized by using an attachment tube. In the instance that an infection is known pre-operatively, antibiotics like Vancomycin can be mixed with the bone cement. The intramedullary stems are not silver coated and cemented components are preferred in case of a septic revision.

The TiN coating for allergy prophylaxis

As the metallic components of total knee replacements, the articulating metallic parts of the MUTARS® system are made of casted CoCrMo alloy. In the late 70's and 80's of the last century, some of the Cobalt Chromium implants had a small Nickel content to add strength to the implant. Nickel is the primary cause for metal sensitivity, although some patients have shown to be hypersensitive to other metals such as Cobalt and Chromium. The use of titanium components can't solve this problem, because the wear of the articulating polyethylene inlays will increase and so the survival time of the prosthesis is reduced. Since the end of the 1990's TiN (Titanium Nitride coating) has been successfully applied to protect the body against metal ions that could cause allergic reactions.

The metal ion release of TiN coated or TiNbN coated implants is reduced down to 10%.¹

In order to prevent allergic reactions, certain parts of the prosthesis may be supplied with a ceramic coating (TiN). Since almost all components of the tumor system consist of titanium alloy, this only concerns those components, which are made of a cast CoCr alloy (CoCrMo). The REF-numbers of the TiN coated implants have the suffix N after the last digit (e.g. 5720-0005N).

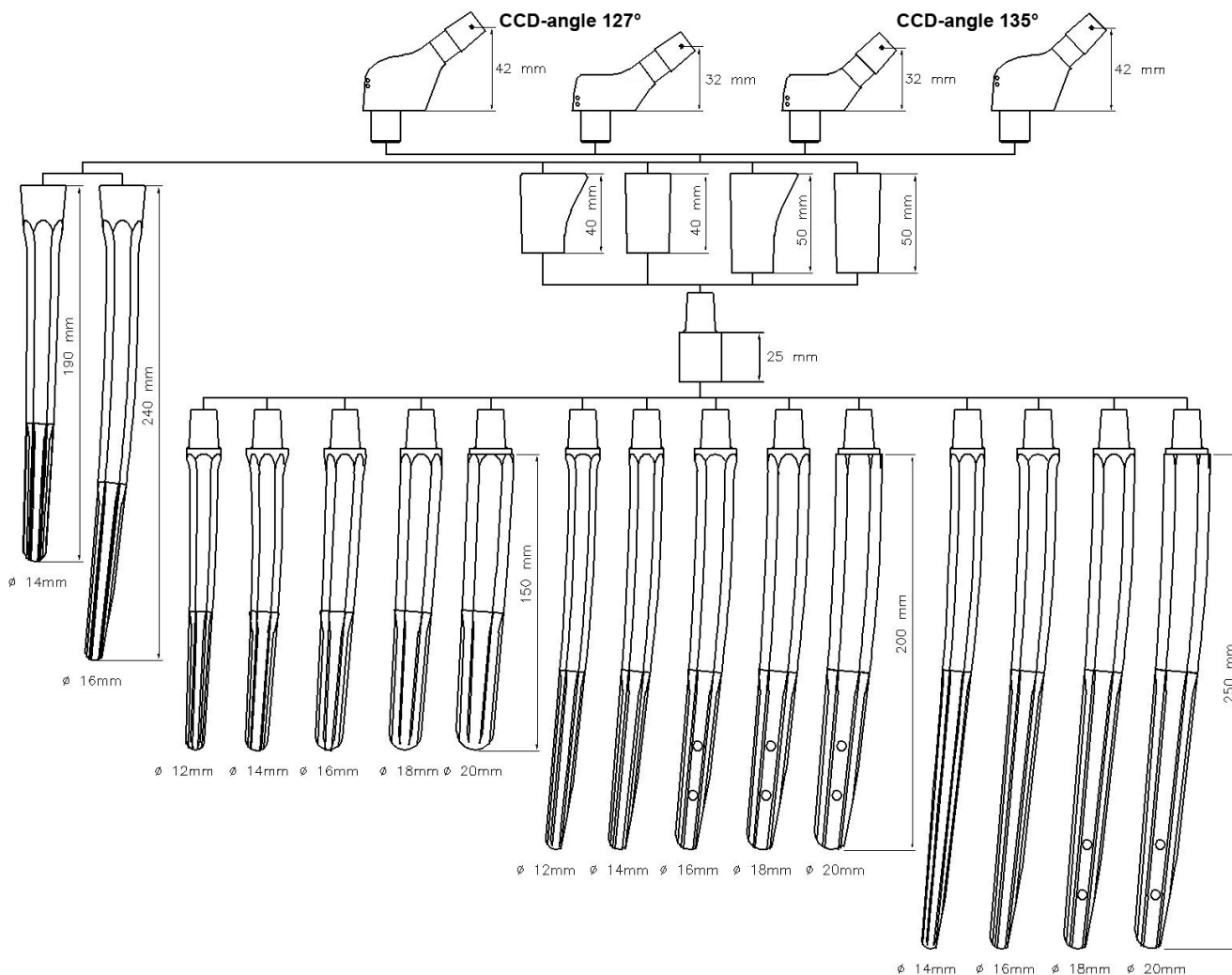
*S: For anti-infective treatment, silver coated implants are available.

*N: For anti-allergic treatment, TiN coated implants are available.

¹ Metal Ion Release from Non-Coated and Ceramic Coated Femoral Knee Components: Boil test 240h in NaCl-solution nach FMZ PhysWerk VA 97350, University Würzburg (D) (On File)

MUTARS[®] RS revision hip system

Introduction



Indication

Revision of a loose hip TEP.

The MUTARS[®] RS system can be used regardless of the stage of the bony defect as long as a primary stability can be achieved.

Contraindication

The common contraindications for cementless stem fixation have to be considered. Due to the fixation an enormous bone transformation is initiated (Atrophy of the cortical bone in the zone of fixation will occur).



Description of the system

proximal (metaphyseal) components

The MUTARS® RS system offers four different proximal components in length of 32 and 42 mm with a 12/14 taper. Both components are available in neck angles of 127° and 135°. Metaphyseal components are available in lengths of 40 mm and 50 mm. To build an extra long stem, up to three extension pieces, each of 25 mm length are available. The modularity of these components allows the optimal adaptation to the Proximal Femur without changing of the diaphyseal stem position.

distal (diaphyseal) components

The MUTARS® RS system includes 14 stems in three different lengths of 150, 200 and 250 mm. The stems of 150 and 200 mm lengths are available in diameters of 12, 14, 16, 18 and 20 mm. The design of the 200 mm stems (16, 18, 20 mm) and 250 mm stems (18, 20 mm) includes two distal locking holes are available in diameters of 16, 18 and 20 mm. 8 cementless stems are available in the lengths 150 and 200mm each in diameters of 12, 14, 16 and 18mm.

For the cementless revision procedure of a femoral stem a precise surgical technique is essential. The goal is to retain as much of the bone structure as possible to achieve an excellent primary stability.

Preoperative Planning

The most important goal of the preoperative planning is to build up the design of the femoral prosthesis, especially to meet the correct leg length in conjunction with a rigid primary stability.

It is necessary to define referencing landmarks which allows the control of the inserting depth during the surgical procedure.

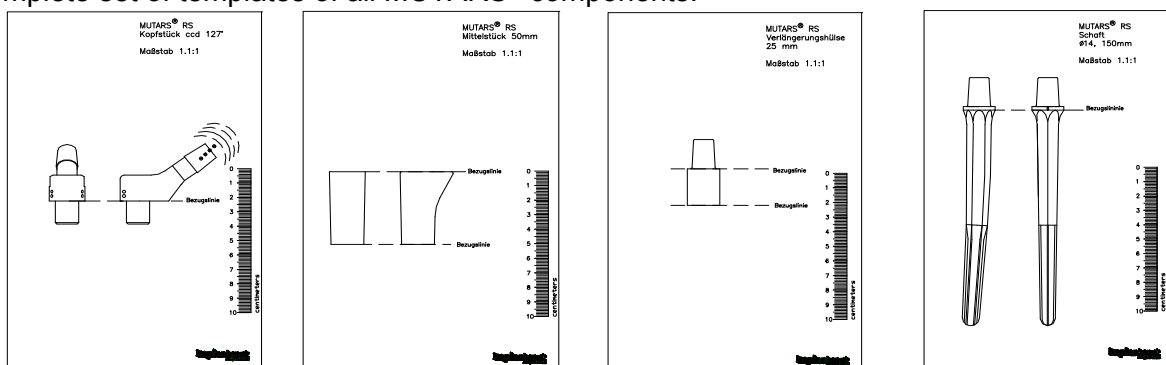
The preoperative planning of the MUTARS® RS stem is helpful, but the final is determined during the surgery.

Necessary material:

- X-rays

The basis for the planning are the A/P X-rays and the medial X-rays of the proximal femur as well as a full leg X-ray in both plans with a scale factor of 1,1:1 (using the 1,1: 1 templates, special templates with other Scale factors are available on demand)

- Complete set of templates of all MUTARS® components.





implant lengths

(Length in mm)

| implant length* | c o m p o n e n t s | | | | |
|-----------------|------------------------------|---------------|-------------------------|------|-------|
| | prox. parts 127° and 135° | metaph. parts | extension piece 25mm | stem | screw |
| 222/232 | 32/42 | 40 | | 150 | 40 |
| 232/242 | 32/42 | 50 | | 150 | 50 |
| 247/257 | 32/42 | 40 | 25 | 150 | 65 |
| 257/267 | 32/42 | 50 | 25 | 150 | 75 |
| 272/282 | 32/42 | 40 | | 200 | 40 |
| 282/292 | 32/42 | 50 | | 200 | 50 |
| 297/307 | 32/42 | 40 | 25 | 200 | 65 |
| 307/317 | 32/42 | 50 | 25 | 200 | 75 |
| 322/332 | 32/42 | 40 | 25 + 25 | 200 | 90 |
| 322/332 | 32/42 | 40 | | 250 | 40 |
| 332/342 | 32/42 | 50 | 25 + 25 | 200 | 100 |
| 332/342 | 32/42 | 50 | | 250 | 50 |
| 347/357 | 32/42 | 40 | 25 | 250 | 65 |
| 357/367 | 32/42 | 50 | 25 | 250 | 75 |
| 372/382 | 32/42 | 40 | 25 + 25 | 250 | 90 |
| 382/392 | 32/42 | 50 | 25 + 25 | 250 | 100 |

* measured from the head centre of the femoral head size medium.

Note: Please notice that the amount of implants and instruments send with an individual shipment may differ from the information in the catalogue information of this brochure. Please make sure, during the preoperatively planning, that all necessary implants and instruments are available for the surgery.



figure 1

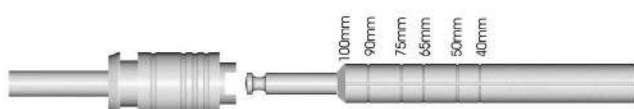


figure 2

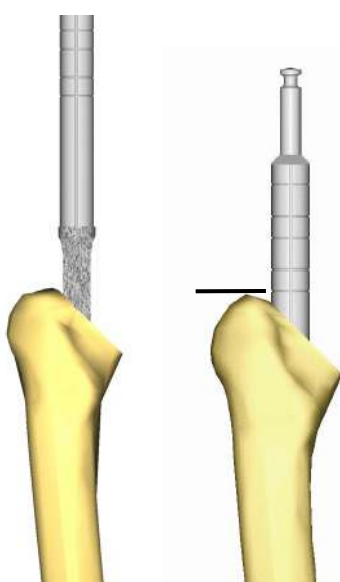


figure 3a and 3b

Preparation of the femoral canal

Remove the failed implant and, if necessary, remove the bone cement.

Prepare the femoral canal by using flexible reamers (fig. 1).

For the **cementless implantation** drill the femoral medullary cavity using a flexible medullary reamer that is 1,5 - 2mm smaller (depending on bone quality) than the diameter of the preoperatively chosen cementless RS-stem.

Connect the slide hammer with the broach which is of the same size as the chosen cementless stem (fig. 2).

For **cemented implantation** prepare the cavity with a reamer which is 1mm smaller than the cemented RS stem.

Connect the slide hammer with the broach which is two sizes larger than the chosen cemented stem (fig. 2).

Assemble the MUTARS[®] RS broach and the broach handle (fig. 2).

Make sure that the curvature of the broach corresponds to the ante-curvature of the femur during the preparation of the intramedullary canal (fig. 3a) (Check the mark on the broach).

The implant length is marked on the broach. The insertion depth of the implant is visualised on the proximal ring mark of the broaches (fig. 3b).

The mark is representing the centre of rotation when using the metaphyseal parts and extension piece (see table 1, page 6). It is recommended to use the extension pieces with a stem length of 200 mm or longer)

Remark

For preparation for a 250 mm stem the 200 mm broaches are used.

Remark

The use of the trial stems is optional.
Please follow the information on page 14.

Screw the guide rod into the stem and mount the MUTARS® RS stem impactor onto the stem (use the same size as the previously used broach) (fig. 4).

Insert the stem while respecting the correct curvature of the stem (fig. 5a). The correct implant depth can be controlled by observing the ring marks on the impactor (fig. 5b) (Tab.1). The stem should be seated firmly in the femoral bone.

Remark: If a distal locking is preferred please make sure that the stem offers the locking holes. The stems with holes are marked with * in the table on page 3. Please use 4,5 mm locking screws or the locking bolts, which are shown in the implant information chapter of this brochure.



figure 4

| Mark | Metaphyseal part | | Extension piece | |
|------|------------------|------|-----------------|--------|
| | 40mm | 50mm | 25mm | 2x25mm |
| 40 | x | | | |
| 50 | | x | | |
| 65 | x | | X | |
| 75 | | x | x | |
| 90 | x | | | x |
| 100 | | x | | x |

Table 1

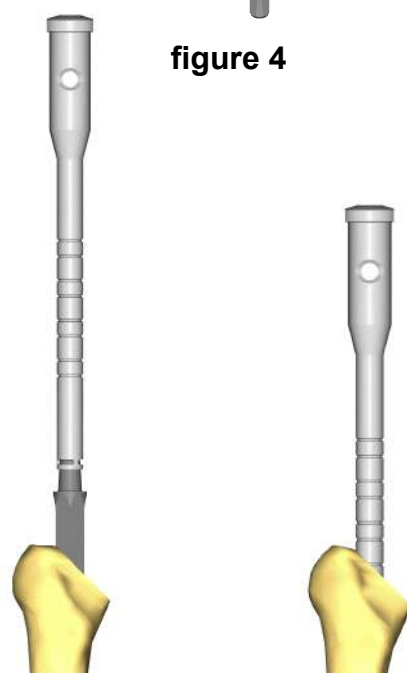


figure 5a and 5b

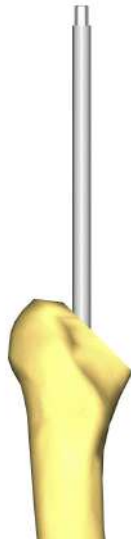


figure 6

Unlock and remove the stem impactor. Leave the ES guide rod in the stem (fig. 6).

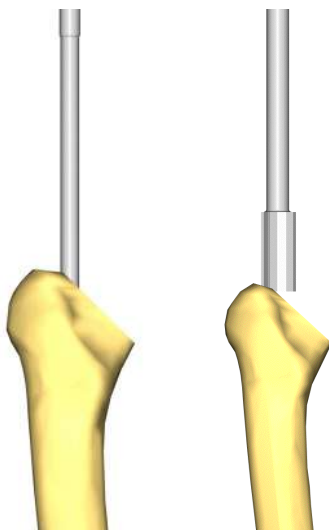


figure 7a

7b

Prepare the intramedullary bone with the hollowed reamer and ream for the metaphyseal parts until the reamer stops (fig. 7c). Please ensure to clean the reamer and finish the preparation in a second step (fig. 7a and 7b). Clean the intramedullary cavity and make sure that no bone chips rest above the taper of the stem.

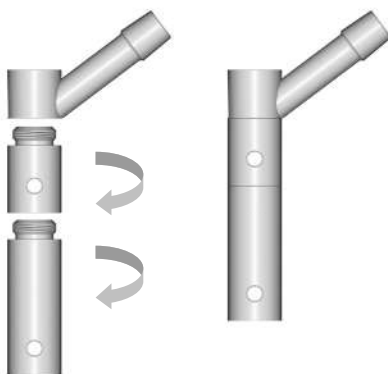


figure 8

Mount the trial components (fig. 8).

Remark:

If a 25 mm extension piece should be used, please place the extension piece trial on top of the metaphyseal trial (40 or 50 mm).

The final implants will be combined differently. The extension piece will rest below the metaphyseal implant.



Slide the trial parts over the ES guide rod (fig. 9a and 9b) and remove the ES guide rod (fig. 9c).

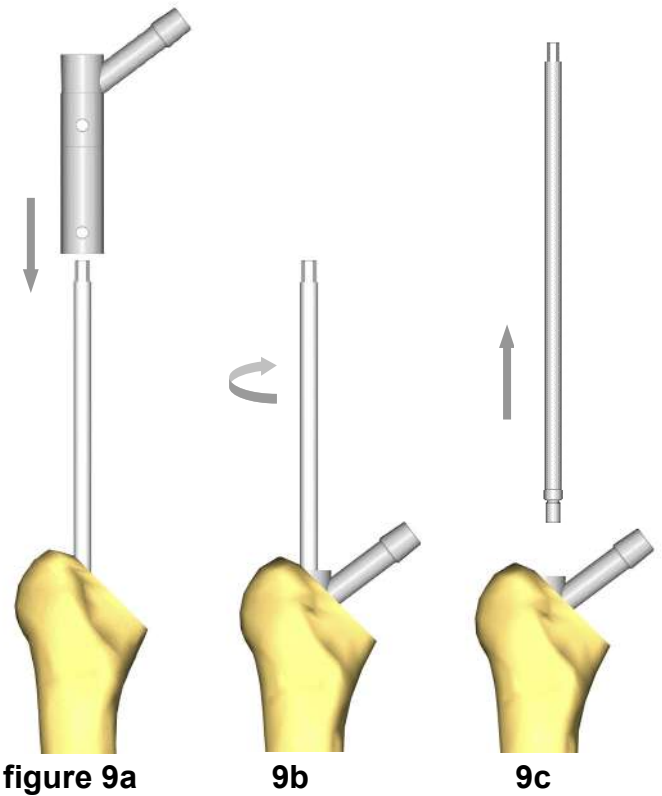


figure 9a

9b

9c

Lock the trial components into the stem by using the trial screw of the correct length. Use the socket wrench to lock the screw (fig. 10a and 10b).

Add the “Medium size” trial head and reduce the joint to check the stability (fig. 10c).

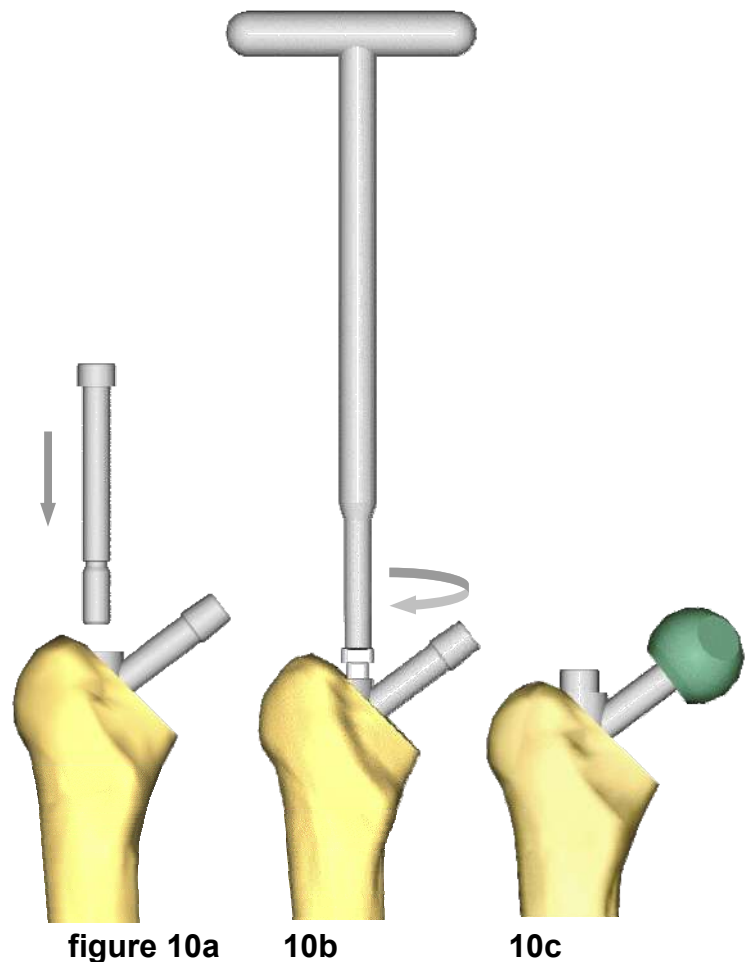


figure 10a

10b

10c

After successful trial reduction you can unlock and remove the trial screw (fig. 11a and 11b), but leave in the trial components (fig. 11c).

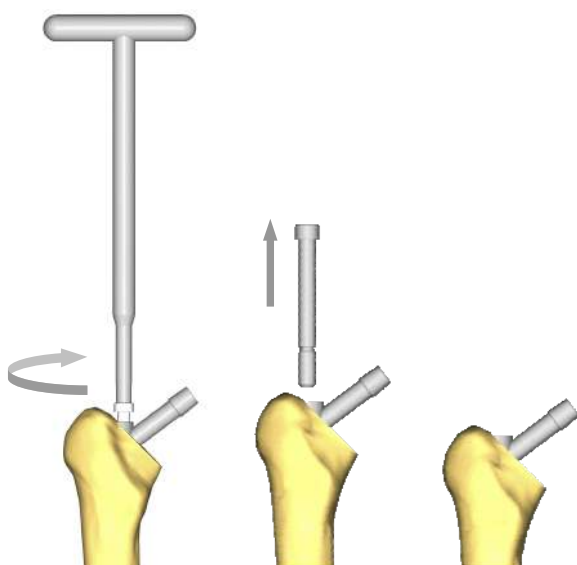


figure 11a

11b

11c

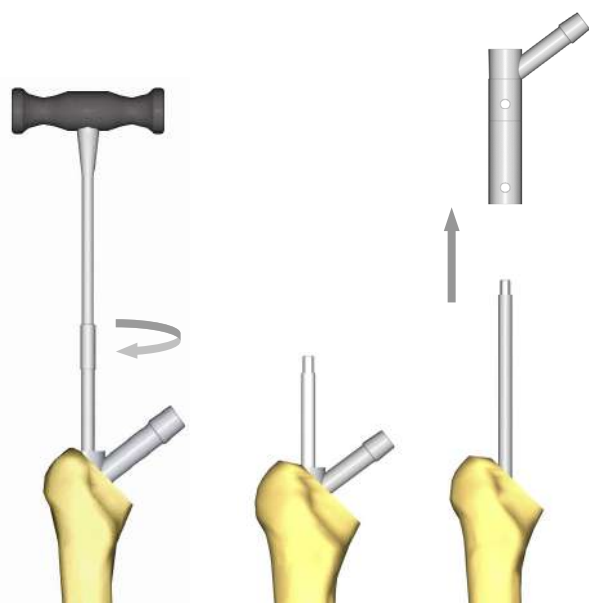


figure 12a

12b

12c

Screw the guide rod ES into stem and lock it again with the hex wrench SW6 (fig. 12a and 12b).

Please remove the trial components, leave in the guide rod (fig. 12c).



Clean the intramedullary cavity. If a 25 mm extension piece should be used please slide the extension piece over the rod and impact it by using the impactor for metaphyseal parts (fig. 13).

Use the broach for the metaphyseal part of the correct size (40mm or 50mm) to finish the proximal bone preparation. The broach will be guided by the rod and will stop either on the taper of the stem or the taper of the extension piece (fig. 14a and 14b).

Remove the broach after it has reached the correct depth (fig. 14b).

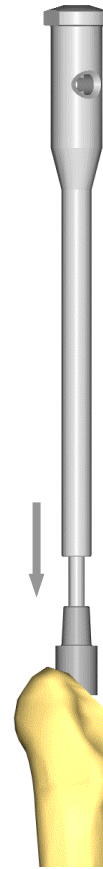


figure 13



figure 14a

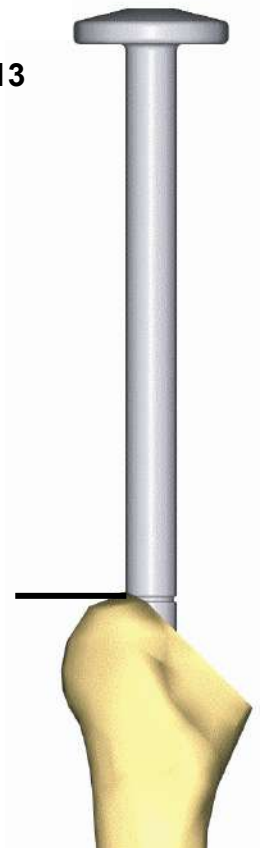


figure 14b

MUTARS[®] RS revision hip system

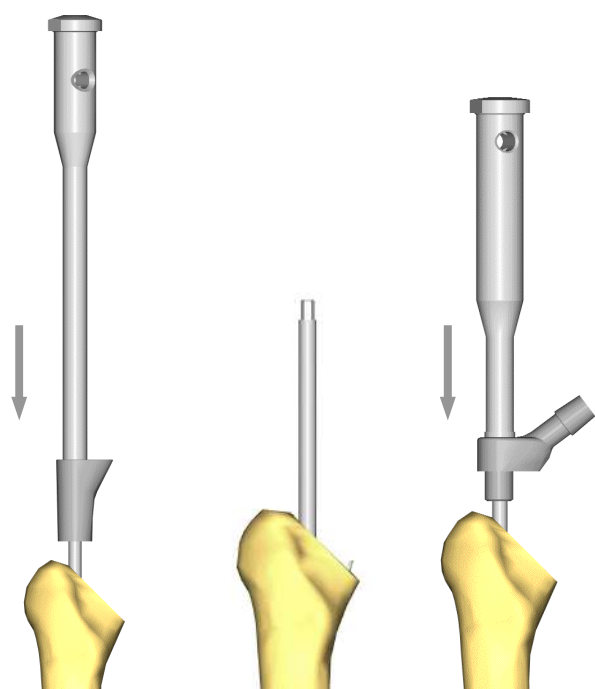


figure 15a

15b

15c

Before inserting the metaphyseal part clean again the taper of the stem or the extension piece. Use the impactor for metaphyseal part (fig. 15b).

After fully seating remove the impactor, but leave in the guide rod (fig. 15c).

Add the proximal part in the correct rotation using the impactor carefully without a mallet (fig. 15c).

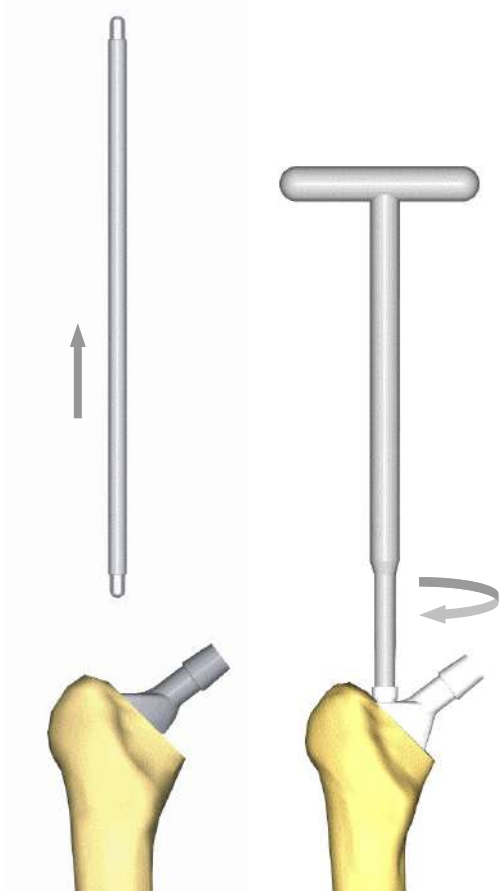


figure 16a and 16b

Unlock and remove the guide rod (fig. 16a).

Slide in the implant screw of the correct length and lock it by using the socket wrench (fig. 16b).

Check range of motion and leg length reconstruction and the joint stability during a final trial reduction. The antetorsion can be adjusted clockwise in 5° increments (fig. 17).

If the joint stability can not be achieved the use of a proximal part 42 mm is recommended.

When the stem should be lateralised please use the Proximal part of 127°.

Secure the components by using the swing wrench while countering it with the counter instrument (fig. 18).

Please insert and lock the safety screw in the same way.

Clean and dry the taper before impacting the femoral head (fig. 19).

Reduce the hip joint.

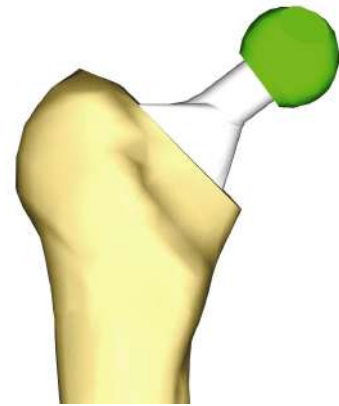


figure 17

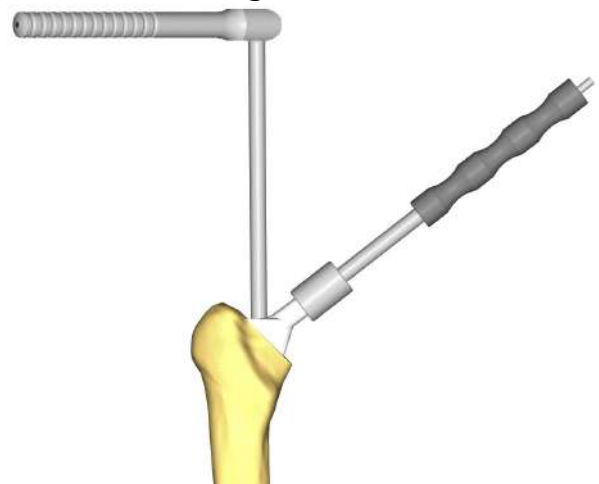


figure 18

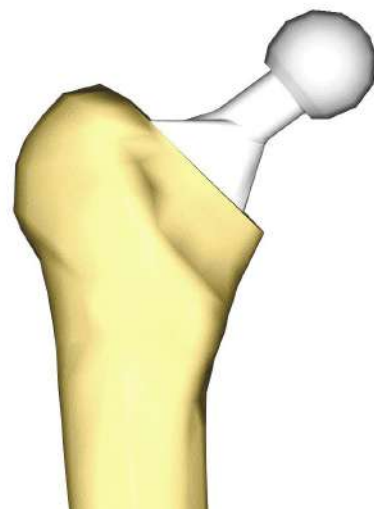


figure 19

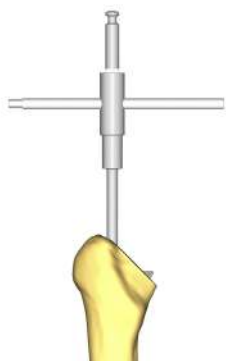


figure 20

Extraction of a stem

The RS removal adapter is attached to the RS stem. Use the RS guide rod to screw the removal adapter into the stem (fig. 20). You might use the guide rod to enhance the torque.



figure 21

Attach the slide hammer to the RS removal adapter and lock it (fig. 21).



figure 22

Remove the assembled stem and metaphyseal component by using the slide hammer (fig. 22).

After removing of the prosthesis remove the slide hammer and removal adapter. Use again the guide rod if necessary to unlock the instruments.

The use of trials stems

Screw the guide rod into the trial stem and mount the MUTARS® RS stem impactor onto the stem (use the same size as the previously used broach) (fig. 23).

Insert the stem while respecting the correct curvature of the trial stem (fig. 24a). The correct implant depth can be controlled by observing the ring marks on the impactor (fig. 24b) (Tab. 2). The trial stem should be seated firmly in the femoral bone.



figure 23

| Mark | Metaphyseal part | | Extension piece | |
|------|------------------|------|-----------------|--------|
| | 40mm | 50mm | 25mm | 2x25mm |
| 40 | x | | | |
| 50 | | x | | |
| 65 | x | | x | |
| 75 | | x | x | |
| 90 | x | | | x |
| 100 | | x | | x |

Table2



figure 24a and 24b



figure 25

Unlock and remove the stem impactor. Leave the guide rod ES into the stem (fig. 25).

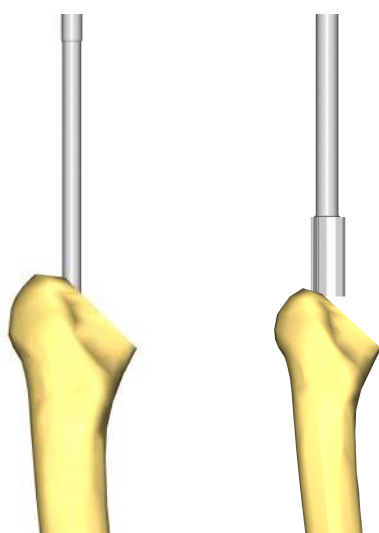


figure 26a

26b

Prepare the intramedullary bone with the hollowed reamer and ream for the metaphyseal parts until the reamer stops (fig. 26c). Please consider to clean the reamer and finish the preparation in a second step (fig. 26a and 26b). Clean the intramedullary cavity and make sure that no bone chips rest above the taper of the stem.

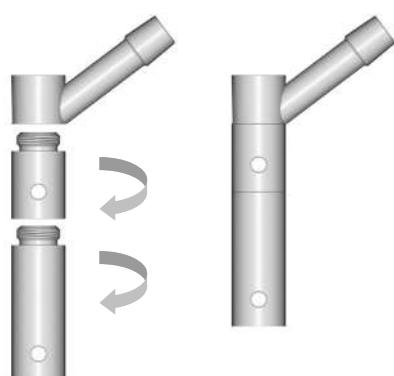


figure 27

Mount the trial components into (fig. 27).

Remark:

If a 25mm extension piece should be used, please place the extension piece trial on top of the metaphyseal trial (40 or 50mm).

The final implants will be combined different. The extension piece will rest below the metaphyseal implant.



Slide the trial parts over the guide rod ES (fig. 28a and 28b) and remove the guide rod ES (fig. 28c).

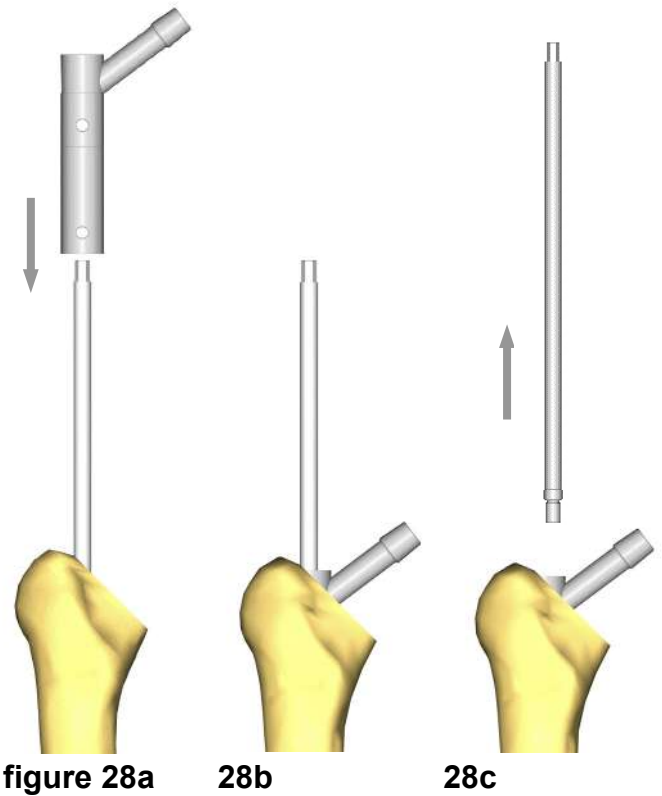


figure 28a

28b

28c

Lock the trial components into the stem by using the trial screw of the correct length. Use the socket wrench to lock the screw (fig. 29a and 29b).

Add the “Medium size” trial head and reduce the joint to check the stability (fig. 29c).

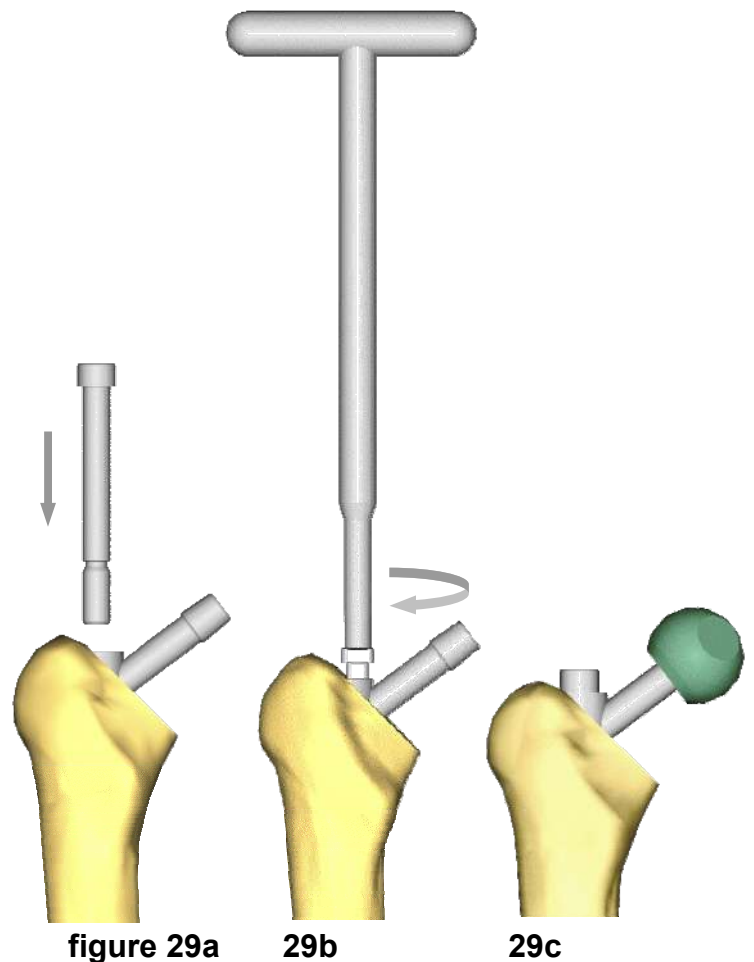


figure 29a

29b

29c

After successful trial reduction you can unlock and remove the trial screw (fig. 30a and 30b), but leave in the trial components (fig. 30c).

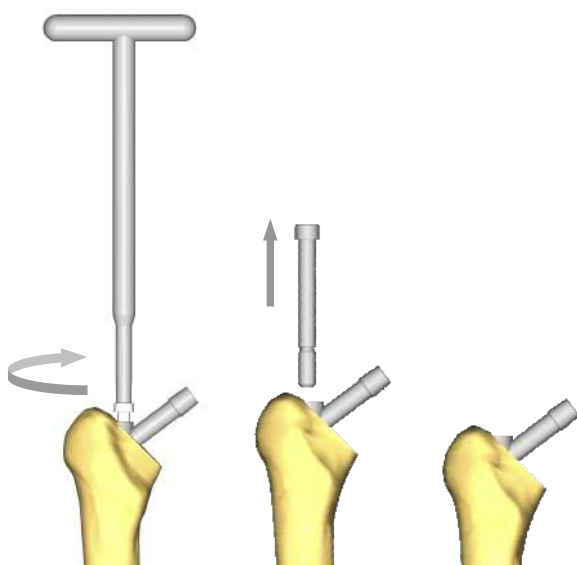


figure 30a

30b

30c

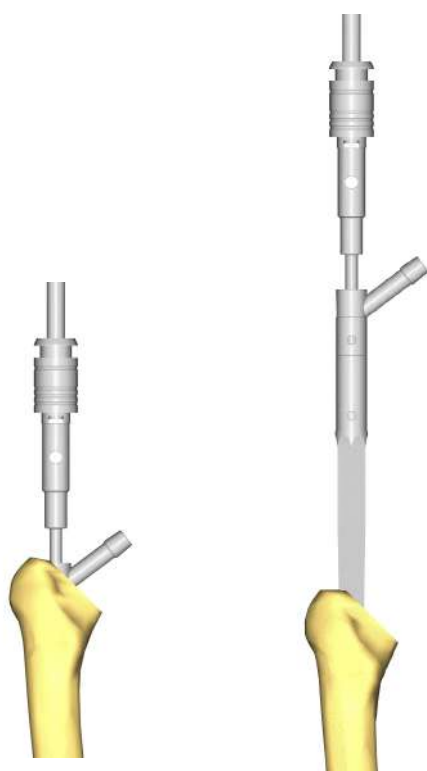


figure 31a

31b

Screw the removal adapter into the trial (fig. 31a).

Combine the slide hammer with the removal adapter and remove the trial stem together with the trial components (fig. 31b).

Screw the guide rod into the stem and mount the MUTARS® RS stem impactor onto the stem (use the same size as the previously used broach) (fig. 32).

Insert the stem while respecting the correct curvature of the stem (fig. 33a). The correct implant depth can be controlled by observing the ring marks on the impactor (fig. 33b) (Tab.3). The stem should be seated firmly in the femoral bone.

Remark: If a distal locking is preferred please make sure that the stem offers the locking holes. The stem with holes are marked with * in the table on page 3. Please use 4,5 mm locking screws or locking bolts, which are shown in the implant information chapter of this brochure.



figure 32

| Mark | Metaphyseal part | | Extension piece | |
|------|------------------|------|-----------------|--------|
| | 40mm | 50mm | 25mm | 2x25mm |
| 40 | x | | | |
| 50 | | x | | |
| 65 | x | | x | |
| 75 | | x | x | |
| 90 | x | | | x |
| 100 | | x | | x |

Table 3



figure 33a

33b

Clean the intramedullary cavity. If a 25mm extension piece should be used please slide the extension piece over the rod and impact it by using the impactor for metaphyseal parts (fig. 34).

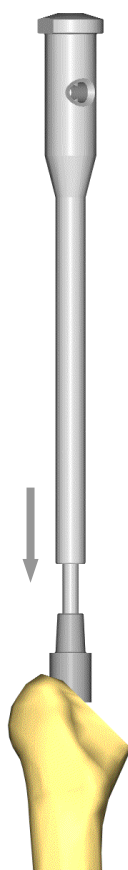


figure 34

Use the broach for the metaphyseal part to finish the proximal bone preparation. The broach will be guided by the rod and will stop either on the taper of the stem or the taper of the extension piece (fig. 35a and 35b).

Remove the broach after it has reached the correct depth (fig. 35b).



figure 35a

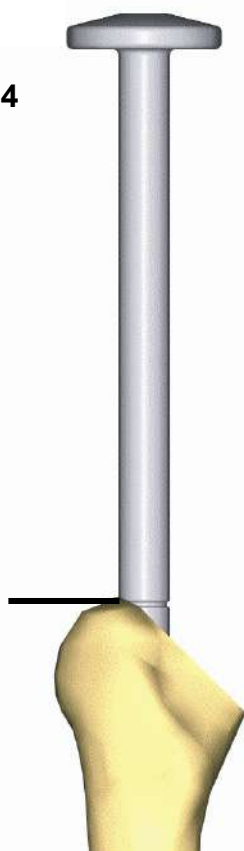
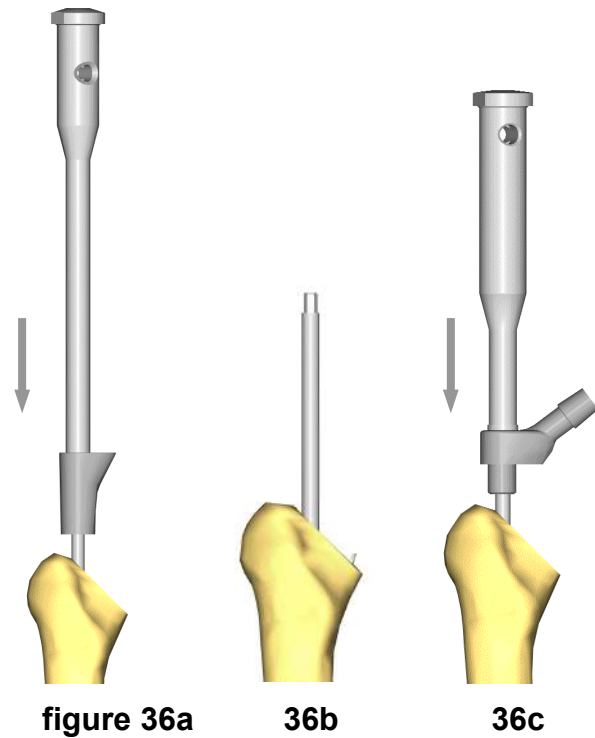


figure 35b

Before inserting the metaphyseal part clean again the taper of the stem or the extension piece. Use the impactor for metaphyseal part.

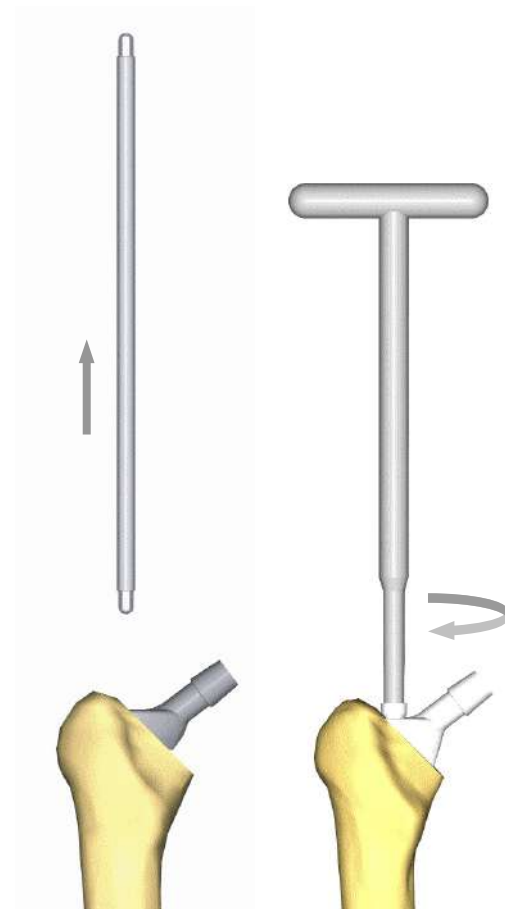
After fully seating remove the impactor, but leave in the guide rod (fig. 36b).

Add the proximal part in the correct rotation using the impactor carefully without a mallet (fig. 36c).



Unlock and remove the guide rod (fig. 37a).

Slide in the implant screw of the correct length and lock it by using the socket wrench (fig. 37b).



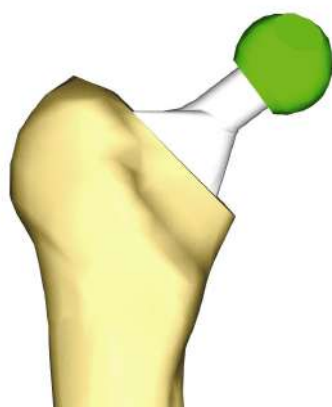


figure 38

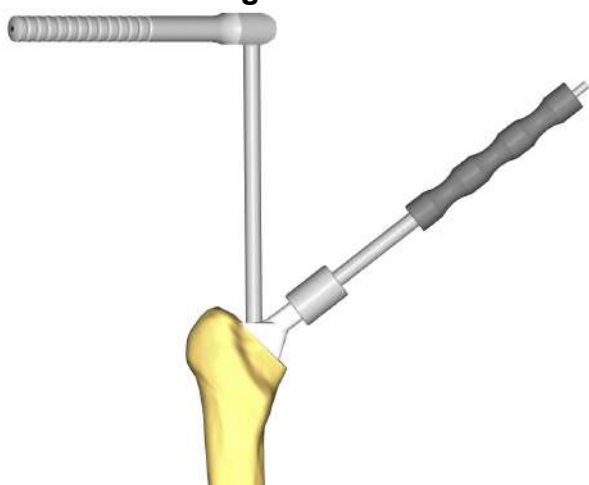


figure 39

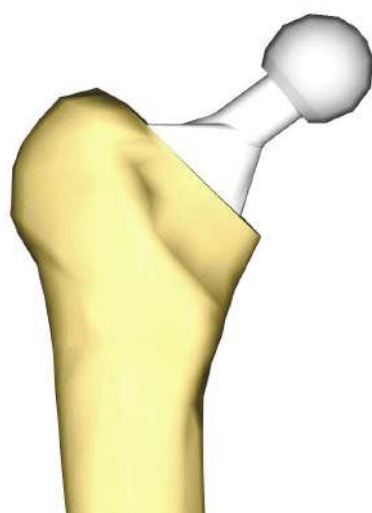


figure 40

Check range of motion and leg length reconstruction and the joint stability during a final trial reduction. The antetorsion can be adjusted clockwise in 5° increments (fig. 38).

If the joint stability can not be achieved the use of a proximal part 42 mm is recommended.

When the stem should be lateralised please use the Proximal part of 127°.

Secure die components by using the swing wrench while countering it with the counter instrument (fig. 39).

Please insert and lock the safety screw in the same way.

Clean and dry the taper before impacting the femoral head (fig. 40).

Reduce the hip joint.

IMPLANTS

***S:** For anti-infective treatment, silver coated implants are available.

***N:** For anti-allergic treatment, TiN coated implants are available.



MUTARS[®] RS screw

mat.: implatan[®]; TiAl₆V₄ according to DIN ISO 5832/3

| | |
|-----------|-----------|
| 6720-4008 | M8x 40 mm |
| 6720-5008 | M8x 50 mm |
| 6720-6508 | M8x 65 mm |
| 6720-7508 | M8x 75 mm |
| 6720-9008 | M8x 90 mm |
| 6720-1008 | M8x100 mm |
| 6720-1158 | M8x115 mm |
| 6720-1258 | M8x125 mm |



MUTARS[®] RS proximal component *S

mat.: implatan[®]; TiAl₆V₄ according to DIN ISO 5832/3

| | |
|-----------|-------------|
| 6710-1527 | 127°, 32 mm |
| 6710-1535 | 135°, 32 mm |
| 6710-1627 | 127°, 42 mm |
| 6710-1635 | 135°, 42 mm |



MUTARS[®] RS metaphyseal component

mat.: implatan[®]; TiAl₆V₄ according to DIN ISO 5832/3 and hydroxylapatite coating

| | |
|-----------|-----------------------|
| 6730-4121 | 40 mm |
| 6730-5121 | 50 mm |
| 6730-4221 | 40 mm small (tapered) |
| 6730-5221 | 50 mm small (tapered) |



MUTARS[®] RS extension piece *S

mat.: implatan[®]; TiAl₆V₄ according to DIN ISO 5832/3 and hydroxylapatite coating

| | |
|-----------|-------|
| 6730-0125 | 25 mm |
|-----------|-------|



IMPLANTS

MUTARS® RS stem cementless

mat.: *implatan*®; $TiAl_6V_4$ according to DIN ISO 5832/3 and hydroxylapatite coating

| | |
|-----------|------------|
| 6762-1512 | 12/150 mm |
| 6762-1514 | 14/150 mm |
| 6762-1516 | 16/150 mm |
| 6762-1518 | 18/150 mm |
| 6762-1520 | 20/150 mm |
| 6762-2012 | 12/200 mm |
| 6762-2014 | 14/200 mm |
| 6762-2016 | 16/200 mm* |
| 6762-2018 | 18/200 mm* |
| 6762-2020 | 20/200 mm* |
| 6762-2514 | 14/250 mm |
| 6762-2516 | 16/250 mm |
| 6762-2518 | 18/250 mm* |
| 6762-2520 | 20/250 mm* |

*marked sizes of length 200 and 250 mm have 2 distal locking screw holes

MUTARS® RS stem cemented *N

mat.: *implavit*® CoCrMo-casting alloy according to DIN ISO 5832/4

| | |
|-----------|-----------|
| 6760-1215 | 12/150 mm |
| 6760-1415 | 14/150 mm |
| 6760-1615 | 16/150 mm |
| 6760-1815 | 18/150 mm |
| 6761-1220 | 12/200 mm |
| 6761-1420 | 14/200 mm |
| 6761-1620 | 16/200 mm |
| 6761-1820 | 18/200 mm |

*cemented stems in length of 120mm are available on special demand!

RS cortical screw Ø 4,5 mm

mat.: *implatan*®; $TiAl_6V_4$ according to DIN ISO 5832/3

| | |
|-----------|----------|
| 5792-4525 | L: 25 mm |
| 5792-4530 | L: 30 mm |
| 5792-4535 | L: 35 mm |
| 5792-4540 | L: 40 mm |
| 5792-4545 | L: 45 mm |
| 5792-4550 | L: 50 mm |
| 5792-4555 | L: 55 mm |
| 5792-4560 | L: 60 mm |





IMPLANTS

MUTARS[®] RS Trauma interlocking stem, cementless

mat.: implavit[®]; CoCrMo acc. to DIN ISO 5832/4

6763-2012 12/200 mm

6763-2014 14/200 mm

6763-2016 16/200 mm

6763-2512 12/250 mm

6763-2514 14/250 mm

6763-2516 16/250 mm



MUTARS[®] RS stem extra small cementless

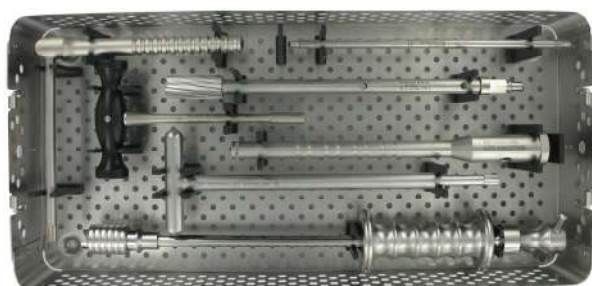
mat.: implatan[®]; TiAl₆V₄ acc. to DIN ISO 5832/3

6764-1514 14/150 mm

6764-2014 14/200 mm

Notice: These stems are implanted without the use of metaphyseal component. They are combined directly with the proximal part to treat dysplasia patients.

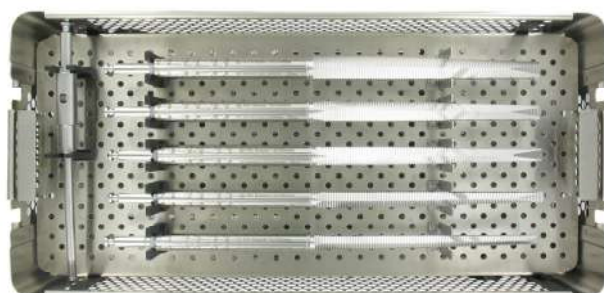
INSTRUMENTS



MUTARS® RS ES Container 2
7999-6715



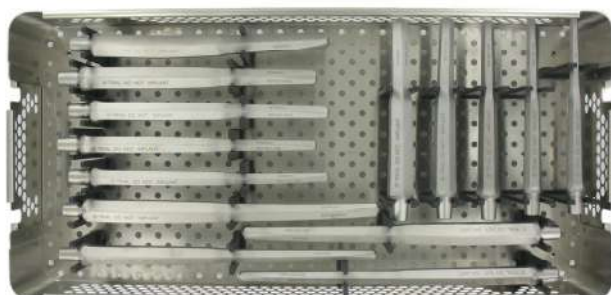
MUTARS® RS ES Container 3
7999-6716



MUTARS® RS broach container (top)
7999-6721



MUTARS® RS broach container (bottom)
7999-6721



MUTARS® RS trial stem container
7999-6724



INSTRUMENTS

MUTARS® RS Broach

| | |
|-----------|----------|
| 6500-1512 | 12/150mm |
| 6500-1514 | 14/150mm |
| 6500-1516 | 16/150mm |
| 6500-1518 | 18/150mm |
| 6500-1520 | 20/150mm |
| 6501-2012 | 12/200mm |
| 6501-2014 | 14/200mm |
| 6501-2016 | 16/200mm |
| 6501-2018 | 18/200mm |
| 6501-2020 | 20/200mm |



MUTARS® RS slide hammer with snap mechanism

6500-0012



MUTARS® RS broach impactor

6500-0008



MUTARS® RS stem impactor ES

6500-3000



MUTARS® RS guide rod ES

6500-3003



MUTARS® RS ES stem extractor adapt.

6500 3007



MUTARS® socket wrench

7420-0300



MUTARS® swing wrench long

7411-0001



INSTRUMENTS



MUTARS® RS impactor for metaphyseal part
6500-3001



MUTARS® RS socket wrench SW 6
6500-0013



MUTARS® RS ES impactor for proximal part
6500-0019



MUTARS® RS reamer for metaphyseal part ES 21 mm
6500-3021



MUTARS® RS broach ES for metaphyseal part

6500-3004 40mm



6500-3005 50mm



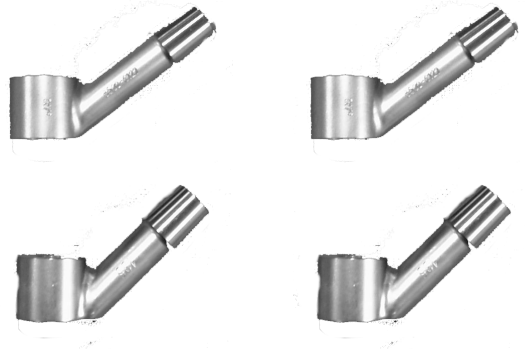
ic counter instrument
8650-0003



INSTRUMENTS

MUTARS® RS Proximal Part Trial

| | |
|-----------|-----------|
| 6500-3327 | 127° 32mm |
| 6500-3335 | 135° 32mm |
| 6500-3427 | 127° 42mm |
| 6500-3435 | 135° 42mm |



MUTARS® RS Metaphyseal Part Trial

| | |
|-----------|------|
| 6500-3040 | 40mm |
| 6500-3050 | 50mm |



MUTARS® RS Trial extension piece 25mm

6500-3025



MUTARS® RS Trial Screw

| | |
|-----------|-------|
| 6500-4008 | 40mm |
| 6500-5008 | 50mm |
| 6500-6508 | 65mm |
| 6500-7508 | 75mm |
| 6500-9008 | 90mm |
| 6500-1008 | 100mm |



Trial head

| | |
|-----------|------------------|
| 7962-2800 | 28 mm small |
| 7962-2805 | 28 mm medium |
| 7962-2810 | 28 mm long |
| 7962-2815 | 28 mm extra long |
| 7962-3200 | 32 mm small |
| 7962-3205 | 32 mm medium |
| 7962-3210 | 32 mm long |
| 7962-3215 | 32 mm extra long |



INSTRUMENTS

MUTARS[®] RS Trial stem



| | |
|-----------|----------|
| 6511-1215 | 12/150mm |
| 6511-1415 | 14/150mm |
| 6511-1615 | 16/150mm |
| 6511-1815 | 18/150mm |
| 6511-2015 | 20/150mm |
| 6511-1220 | 12/200mm |
| 6511-1420 | 14/200mm |
| 6511-1620 | 16/200mm |
| 6511-1820 | 18/200mm |
| 6511-2020 | 20/200mm |
| 6511-1625 | 16/250mm |
| 6511-1825 | 18/250mm |
| 6511-2025 | 20/250mm |



implantcast GmbH
Lüneburger Schanze 26
D-21614 Buxtehude
Germany
phone: +49 4161 744-0
fax: +49 4161 744-200
e-mail: info@implantcast.de 
internet: www.implantcast.de

Your local distributor:

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