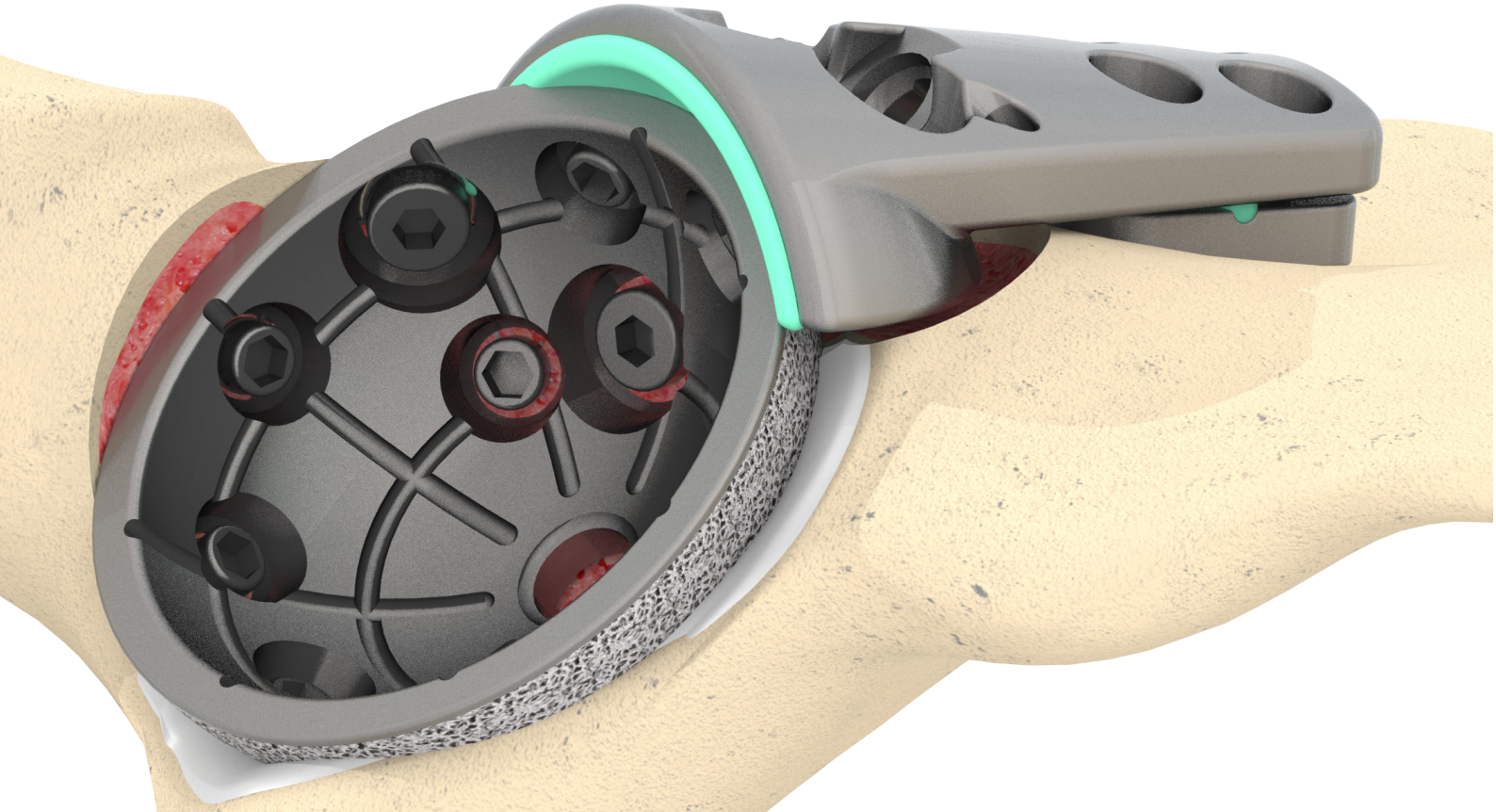
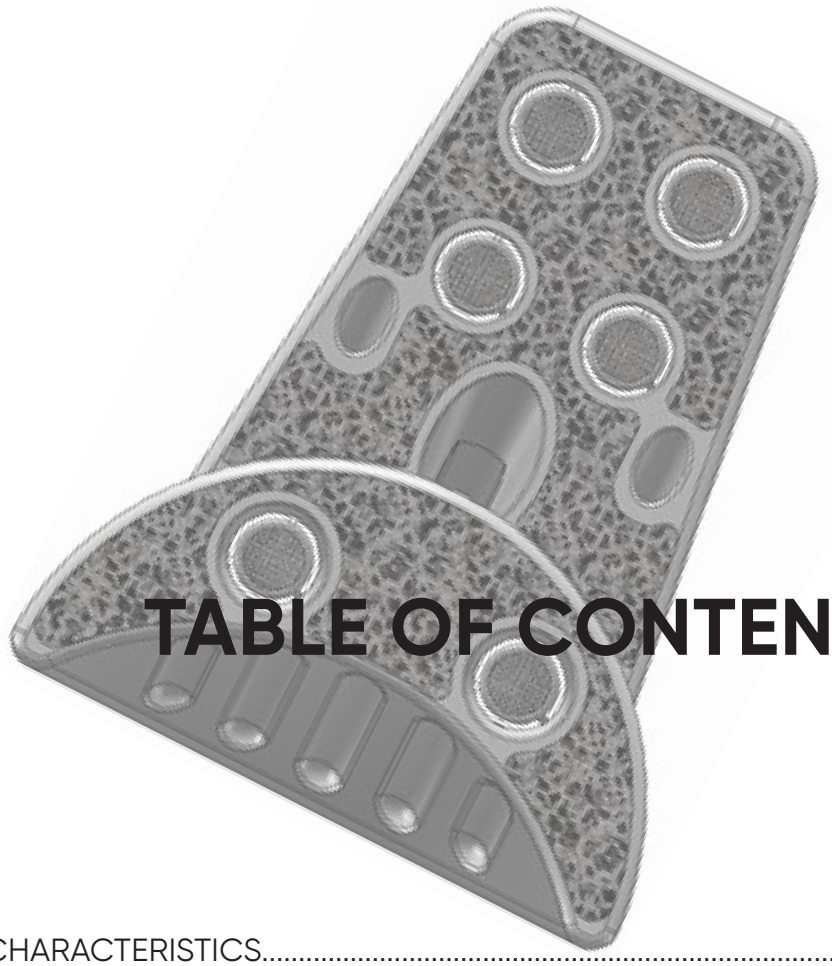
EPORE®
Buttress / Shims



implantcast

SURGICAL TECHNIQUE



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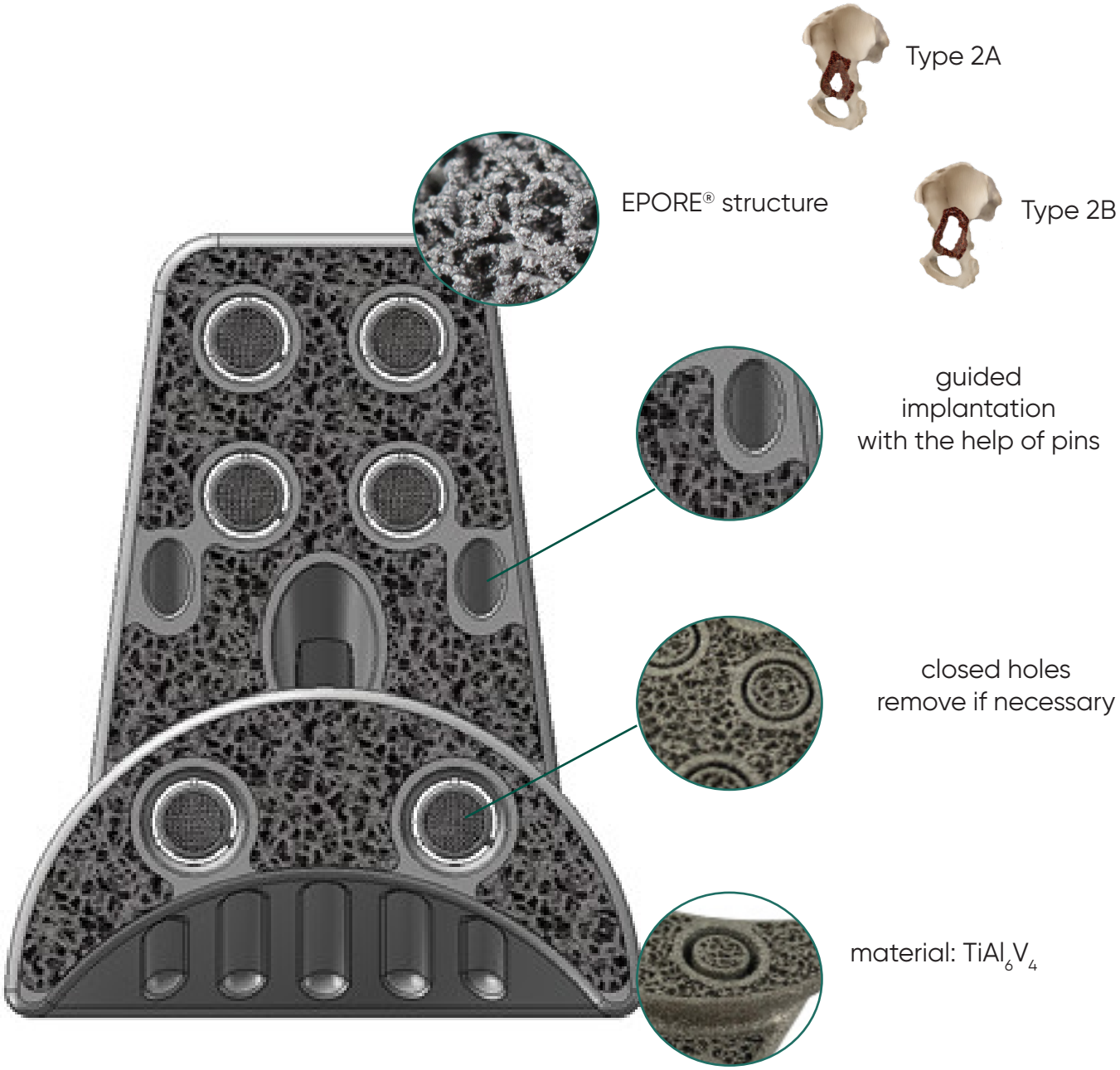
Nota Bene: The described surgical technique is the suggested treatment for the uncomplicated procedure. In the final analysis the preferred treatment is that which addresses the needs of the individual patient.

DESIGN CHARACTERISTICS

For the treatment of extensive superior segmental defects (Paprosky 2A-2B).
The Buttress augments are available in four size variants: straight 54mm and 58mm, as well as left posterior/right anterior and right posterior/left anterior.



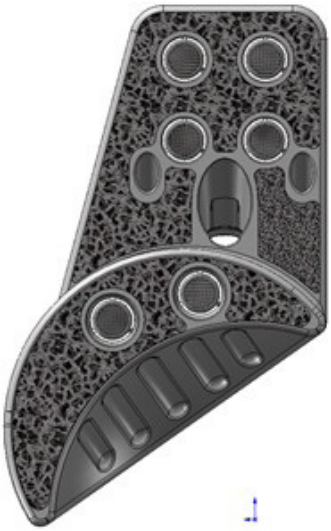
PREOPERATIVE PLANNING

Preoperative planning and precise surgical techniques are mandatory for optimal results. The instructions and the procedure given in the surgical technique to the system must be adhered to, familiarity with the recommended surgical technique and its careful application is essential to achieve the best possible outcome.

Before surgery a surgical planning with regard to the dimensions of the prosthetic model and the positioning of the implant components in the bone has to be carried out by the surgeon.

For this purpose, x-ray templates are available:
Digital templates: Digital templates are included in the data base of the common planning systems. For missing templates, please contact the provider of the planning software and request for these templates.
Radiographic templates: Alternatively radiographic templates are available in various scale factors, which can be obtained from your local representative.

EPORE® Buttress
straight 54mm



EPORE® left posterior
/ right anterior

Further prior to surgery the following should be ensured:

- all needed components are available during surgery. An adequate number of various implant components should be available for surgery.
- all instruments for the implantation are present and are matching the corresponding implants. The insertion instruments must be designed to the implant and the implants may only be used with the instruments provided by implantcast GmbH. Any exeption are exclusively reserved for the standardised instruments used during surgery.

SURGICAL TECHNIQUE

Please expose the hip joint completely.

Resect the articular capsule and the acetabular labrum. Dissect the bony rim of the acetabulum, if possible, completely (Fig. 1).

Remove the osteophytes and the connective tissue of the acetabular fossa. In order to rebuild normal anatomical proportions, the acetabulum should be medialised to the extent to which you are able to reconstruct the preoperatively chosen centre of rotation.

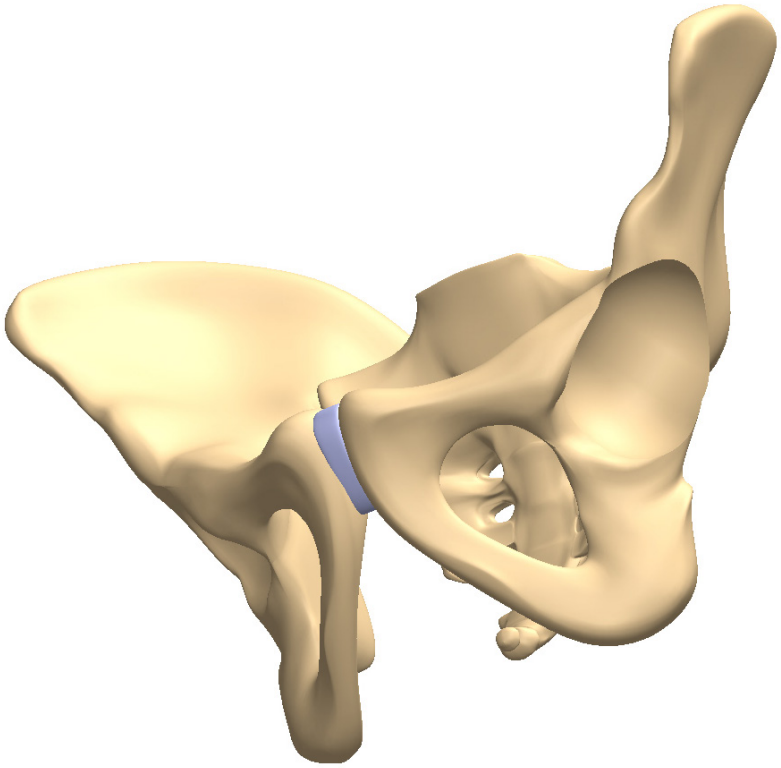


Figure 1

The existing defects have to be evaluated intraoperative very carefully. Please note the grade, position as well as the kind of the bone defect. The preparation of the acetabulum is performed via reamers with increasing diameters and after completion the defect has to be evaluated again.

To prepare the acetabular bone, reamers of outer diameters in increments of 2mm are available.

Align the reamer anatomically, in abduction of about 45° and anteversion of 20 - 30°, with the aid of the reamer the acetabulum is prepared until bleeding subchondral bone is reached.

Sizing

The trial shell can be used to check the size of the prepared implant size (Fig. 2).

The slots in the trial shells are used to assess the bone contact between the trial shells and the prepared acetabulum (Fig. 2).

To determine the buttress size, use the trial shell and the corresponding trial for the buttress augments (Fig. 3). Place the buttress trial implant on the ilium. Keep bone loss as low as possible and only remove as much bone material as necessary. The surface of the defect can be smoothed by using the milling cutters available to optimize the fit.

Please ensure that maximum contact between the buttress and the prepared implant bed of the Ilium is achieved. Shims are available in various designs to support this.

When the optimal position of the buttress is reached, please use the pins to fix the trial buttress using the two cannulated holes (Fig. 3).

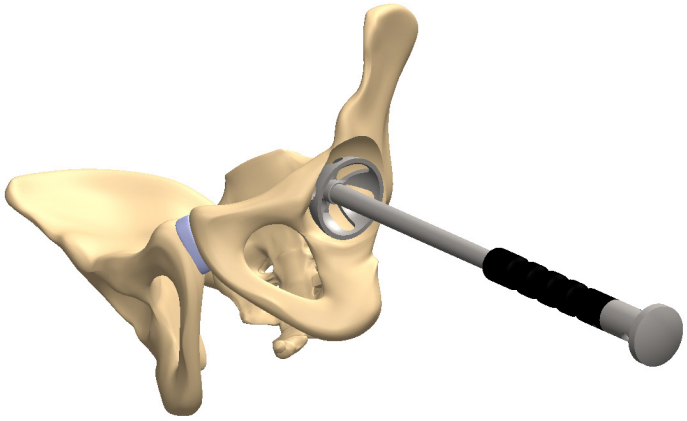


Figure 2

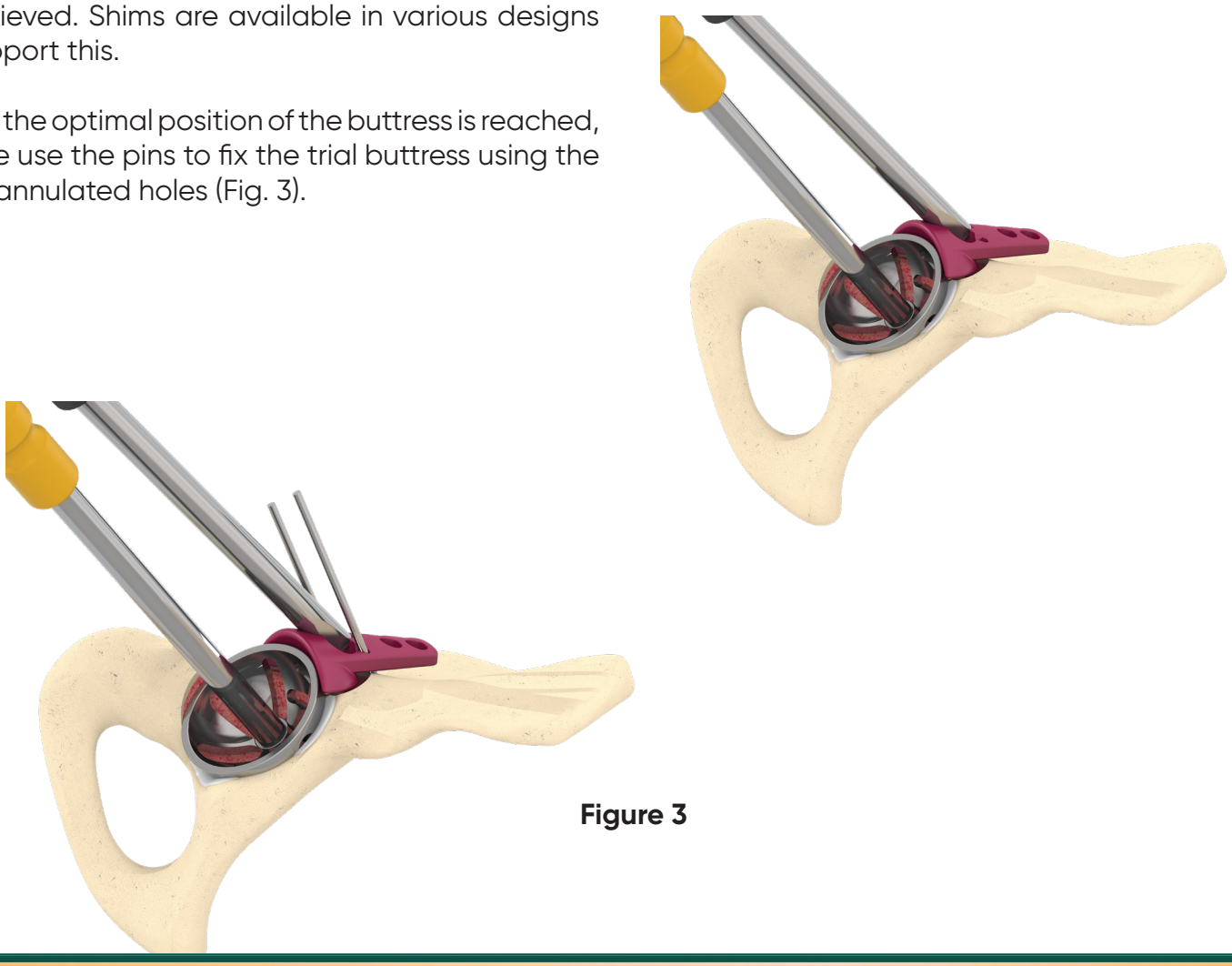


Figure 3

As shown in Fig. 4 and 5, the trial spacer can be removed from the acetabulum after the pin has been inserted by using the spacer insertion instrument (Fig. 6).

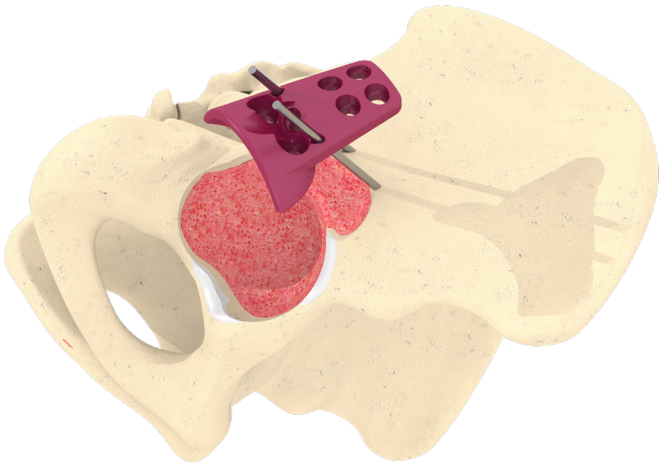


Figure 4

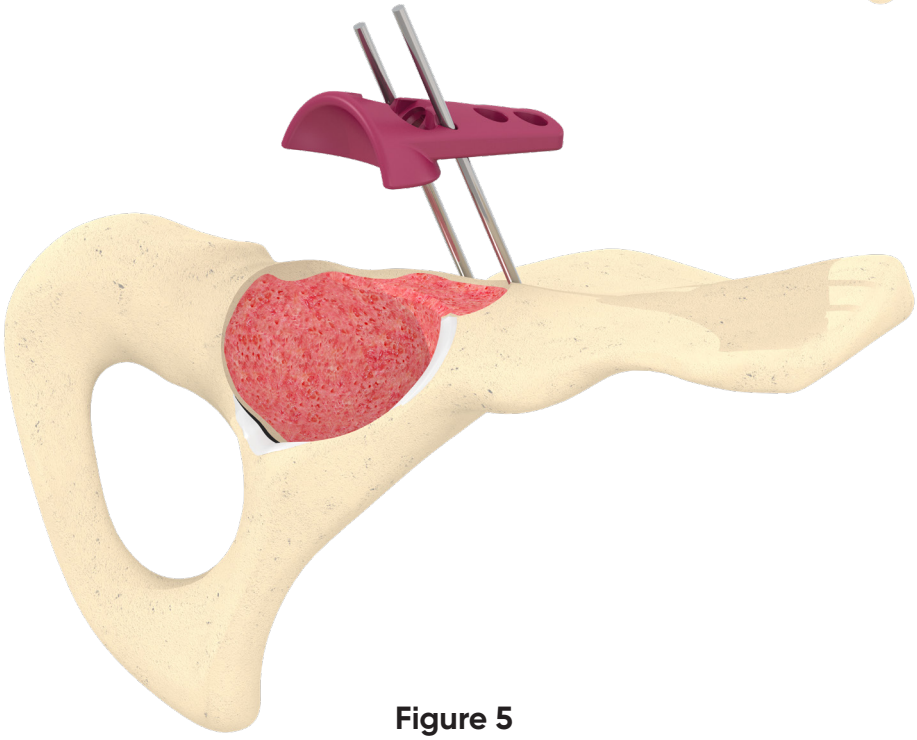


Figure 5

Make sure that the pins remain in position accordingly.

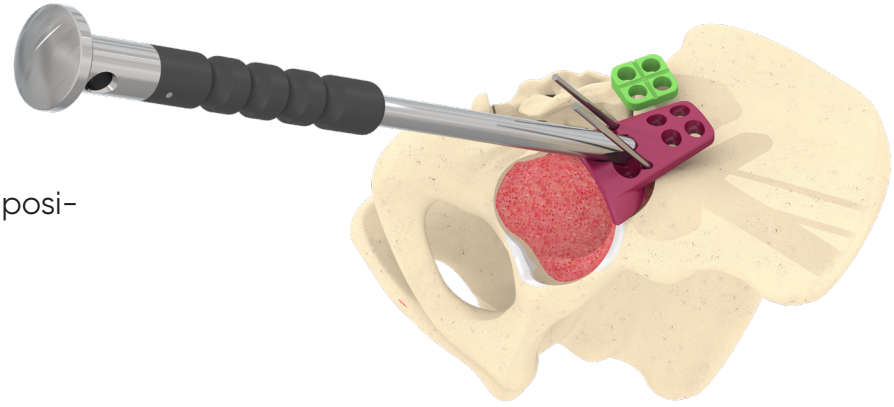


Figure 6

USAGE OF THE SHIMS

Check whether there is sufficient contact between the implant and the bone (Fig. 7). To increase the contact area there is the possibility of using shims in 5 °, 10 ° or 15 °. To do this, place the trial implant under the already aligned buttress and turn it until the optimal contact with the ilium is achieved. Pay attention to the alignment of the screw holes.

Remove the trial components.

EPORE® shims

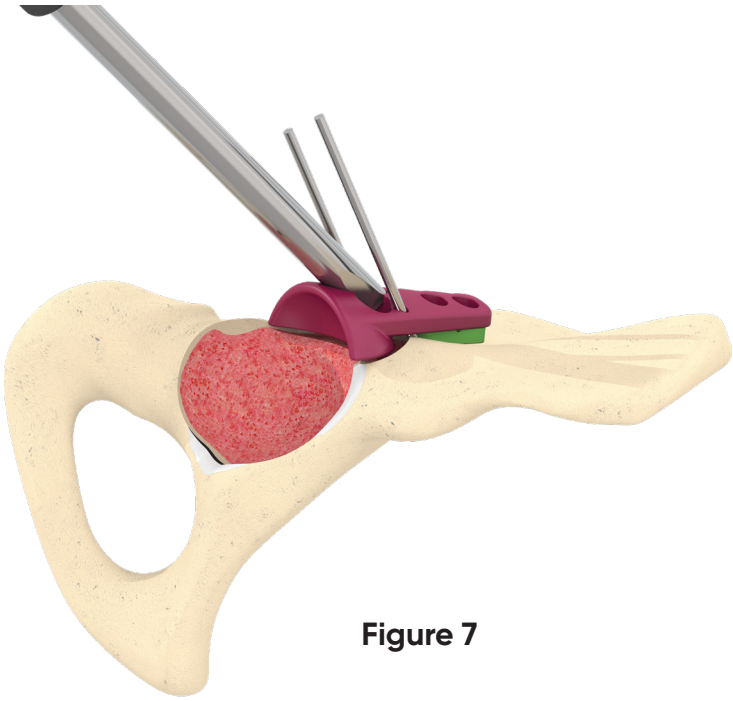


Figure 7

USAGE OF THE IMPLANTS

The selected implant is placed with the setting instrument over the set pins (Fig. 8).

It is possible to screw the buttress and shims together. Drill attachments in various lengths are available for preparing the screw holes.

Insert a drill bit into the flexible drill shaft and pre-drill 6.5mm using the angled drill guide for the cancellous bone screws.

Use the depth gauge to determine the screw length.

Note:
When using a shim augment, it is imperative to connect the two components with bone cement. No bone cement must penetrate the screw holes in the implants.

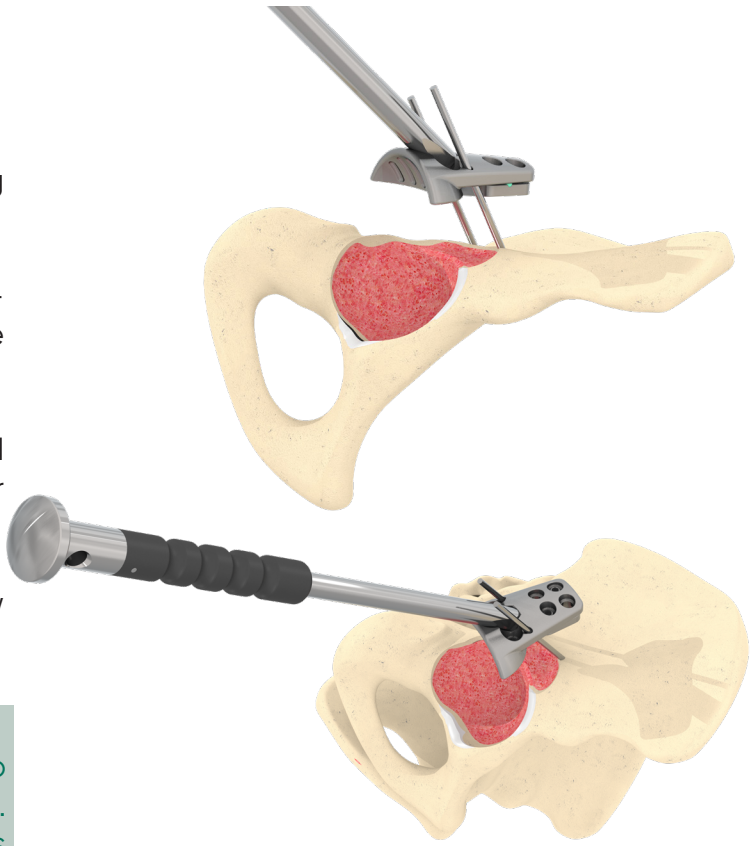


Figure 8

USE OF THE IMPLANT

Drill attachments in various lengths are available for preparing the screw holes.

Insert a drill bit into the flexible drill shaft and pre-drill 6.5mm using the angled drill guide for the cancellous bone screws. Position the screws so that they are optimally positioned on the ilium and take care not to damage any nerves or vessels (Fig. 9). Use a screwdriver to remove the plugs that you want to use for setting screws.

Note:
Please note here that breaking out the plugs can result in sharp edges at the break ends.

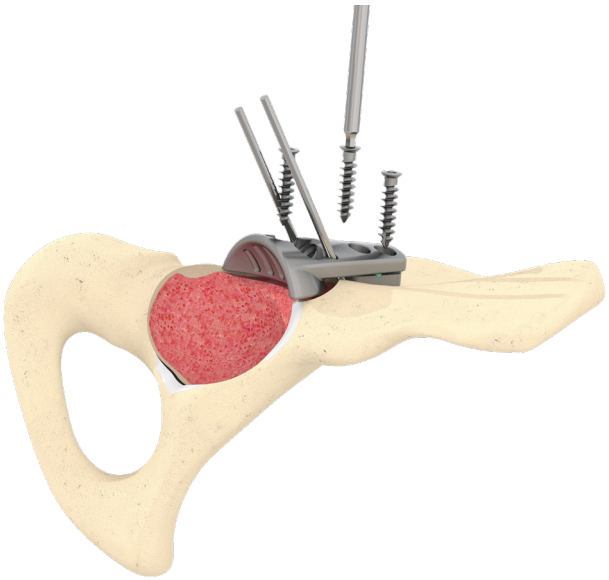


Figure 9

Before the final implantation of the acetabular cup, check the optimal fit again with the trial shell.

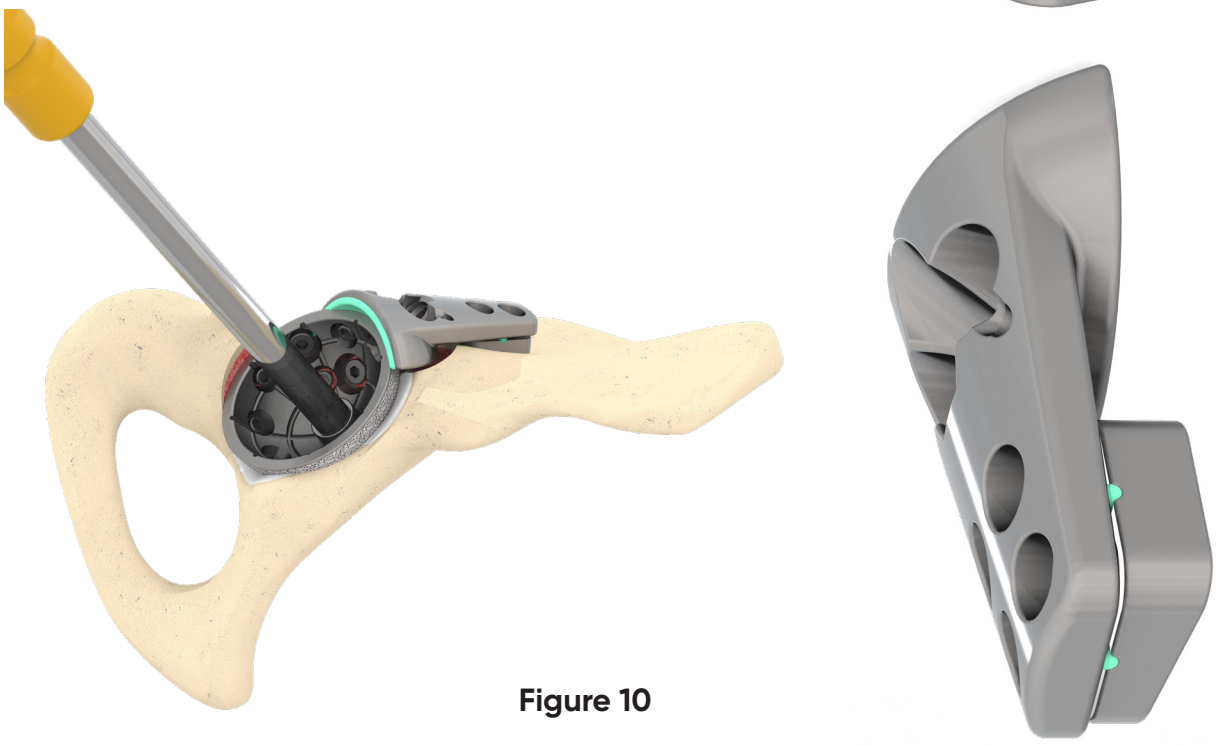


Figure 10

USE OF THE IMPLANT

Note:
When applying the standard viscous bone cement to the concave contact surface of the EPORE® Buttress, care must be taken to ensure that no cement escapes into the acetabulum so that the ingrowth of the EPORE® structure is not constricted.

Before the bone cement hardens, the cup implant must be inserted in an exact orientation.

Optionally, additional screws can be inserted to fix the cup provided the positions of the holes allow this. Contact between the cancellous screws and the EPORE® Buttress should be avoided.

Note:
Open holes can be closed, for example, with allograft or ceramic bone substitute.

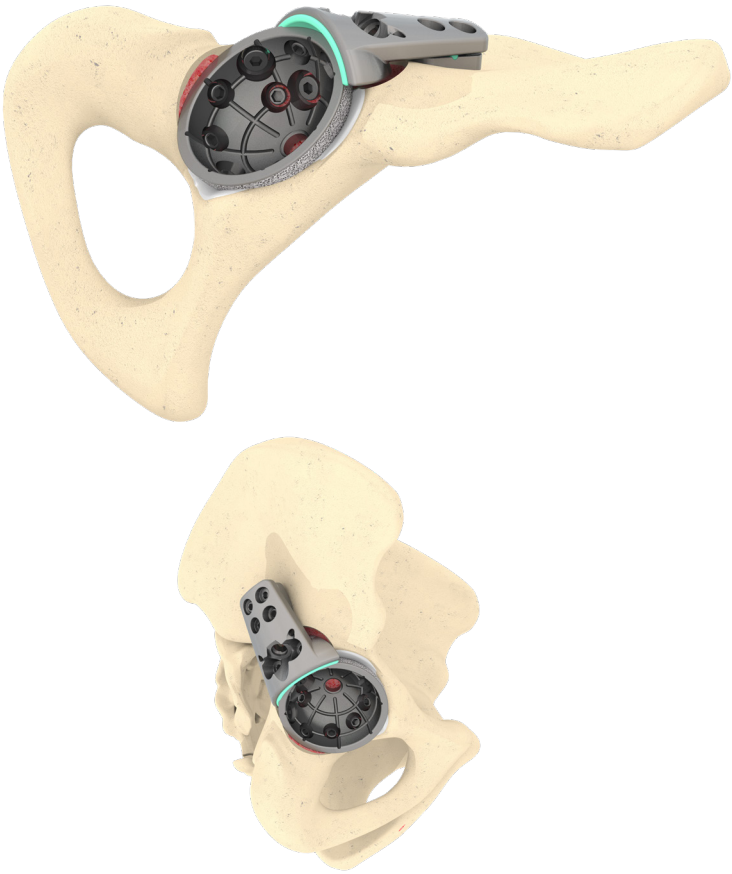


Figure 11
(EPORE® Buttress straight)

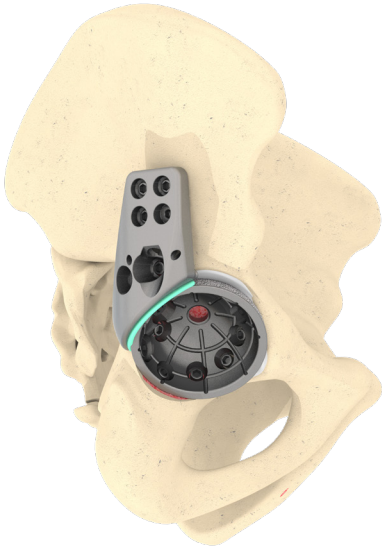


Figure 12
(EPORE® Buttress anatomic)

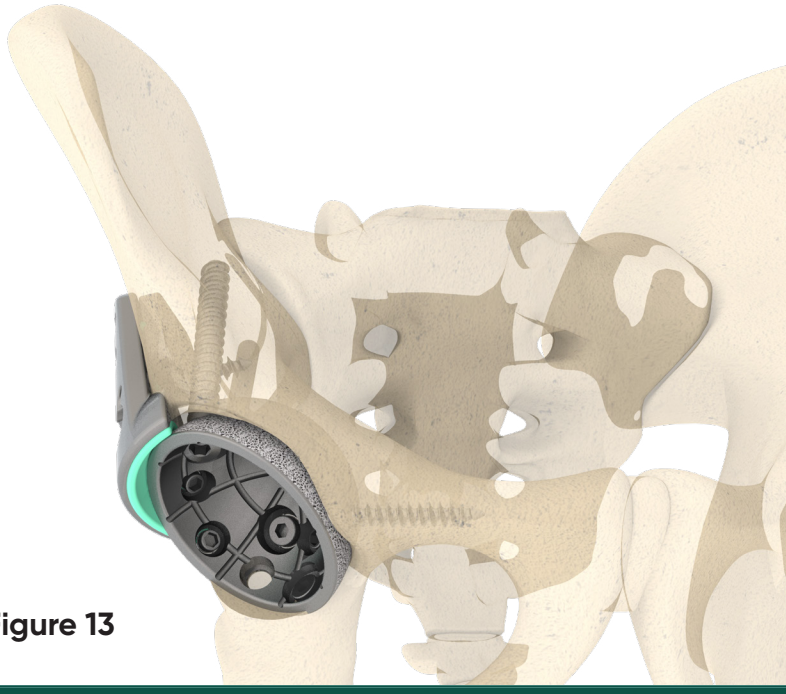
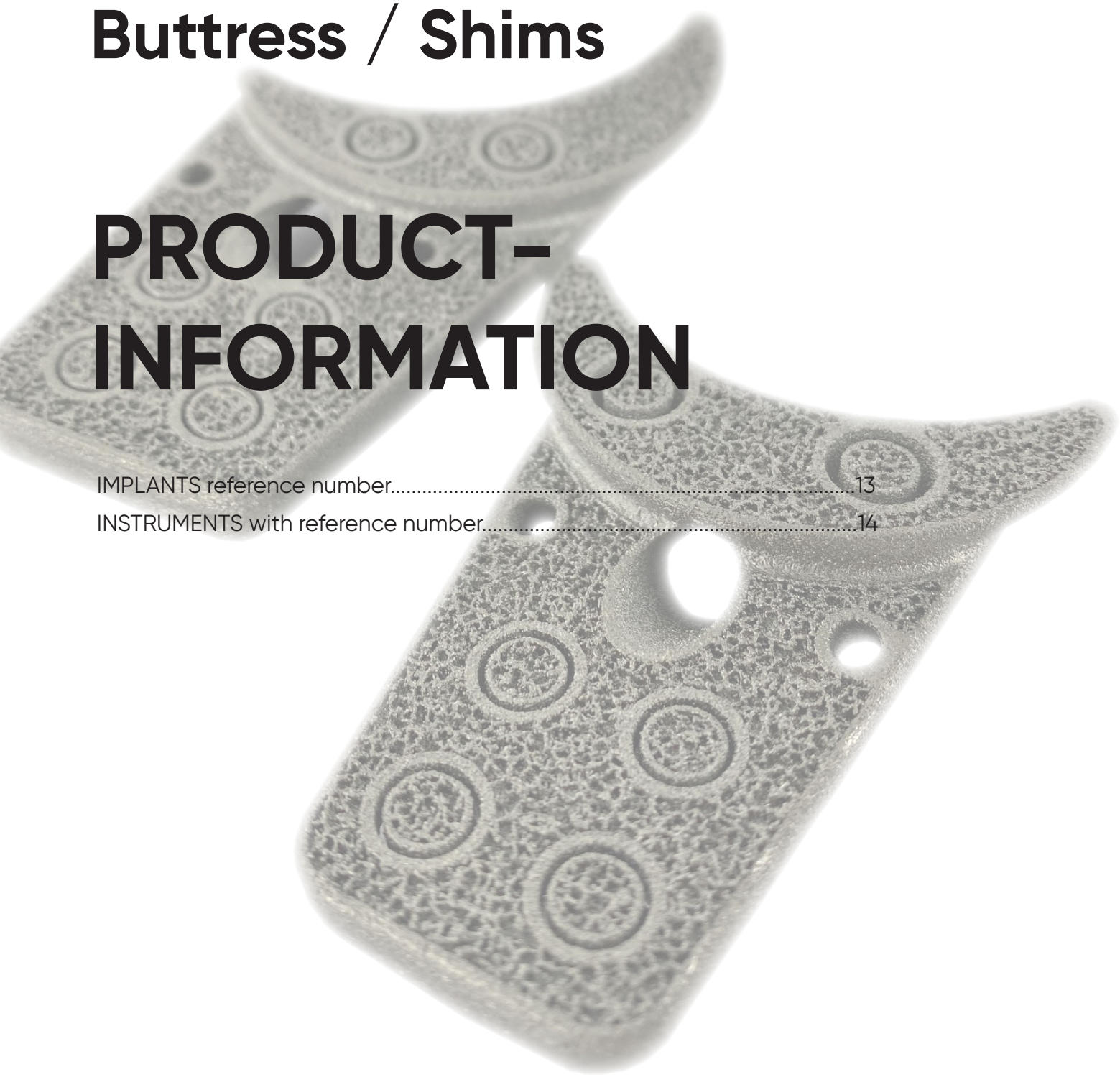


Figure 13

EPORE®
Buttress / Shims

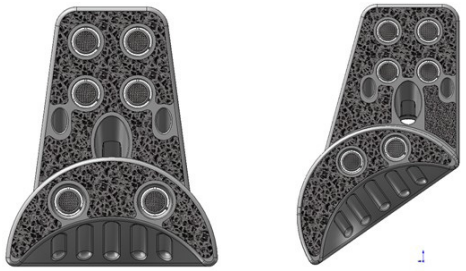
PRODUCT-INFORMATION



IMPLANTS

EPORE® Buttress Augment
implatan®, $TiAl_6V_4$

REF	size
02960100	left posterior / right anterior
02960101	right posterior / left anterior
02960154	straight 54mm
02960158	straight 58mm

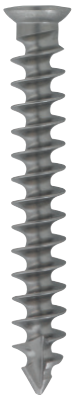


EPORE® Shim Augment
implatan®, $TiAl_6V_4$

REF	size
0296-1005	5°
0296-1010	10°
0296-1015	15°

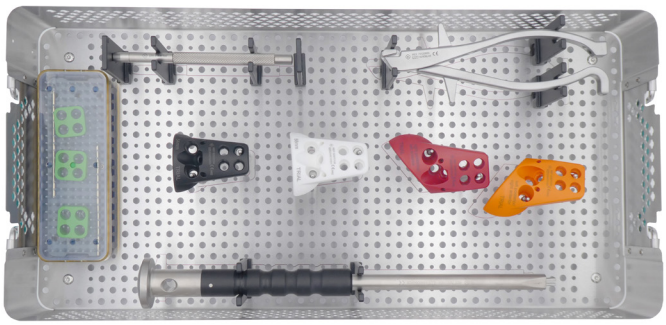
spongiosa screw flat head 6,5mm
Mat.: implatan®, $TiAl_6V_4$ acc. to ISO 5832-3

REF	length
0280-1015	15mm
0280-1020	20mm
0280-1025	25mm
0280-1030	30mm
0280-1035	35mm
0280-1040	40mm
0280-1045	45mm
0280-1050	50mm
0280-1055	55mm
0280-1060	60mm
0280-1065	65mm
0280-1070	70mm
0280-1075	75mm
0280-1080	80mm

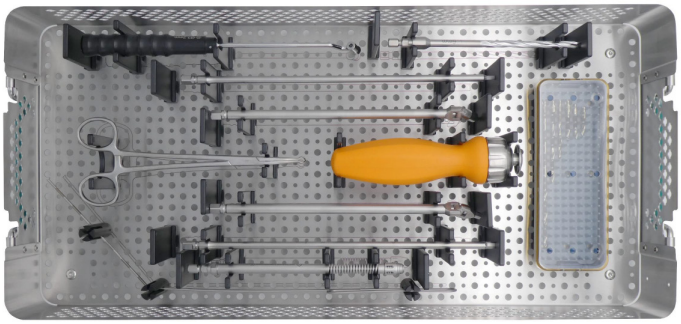


INSTRUMENTS

EPORE® acetabular spacer container
02970002



container for screw instruments modular MUTARS® PRS
02960003



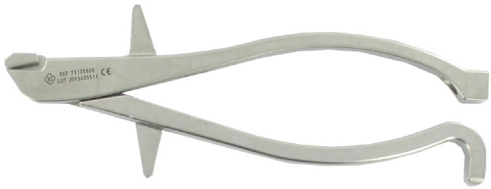
Note for container 02960003:
From this container 02960003, only the instruments that are suitable for the 6.5 mm cancellous bone screws are to be used. It is not possible to combine the EPORE® Buttress and Shims augments with the 8mm cancellous screws.

INSTRUMENTS

content container 02970002

EPORE® acetabular impactor
72951000

pin extractor
75120800



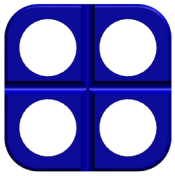
fixation pin 3,2mm x 300mm
15mm threaded
42240034

fixation pin 3,2mm x 97mm
42230008

pin inserter 3,2 mm
42230006

trial for EPORE® Buttress Augment
02970154 - straight 54mm
02970158 - straight 58mm

trial for EPORE® Shim Augment
02971005 - 5°
02971010 - 10°
02971015 - 15°



trial for EPORE® Buttress Augment
02970100 - left posterior / right anterior
02970101 - right posterior / left anterior

INSTRUMENTS

content container 02960003

drill with depth marking
REF 02320015 Ø 3,2/15mm
REF 02320020 Ø 3,2/20mm
REF 02320025 Ø 3,2/25mm
REF 02320040 Ø 3,2/40mm
REF 02320060 Ø 3,2/ 60mm
REF 02320115 Ø 3,2/115mm

cardan screw driver
REF 02701009 3,5mm modular
REF 02701030 5mm modular

depth gauge
REF 02701070 0-100mm

angled drill guide
REF 02821001 3,2mm

bolt retainer clamp
REF 02821002 180mm
alternative:
REF 02821050
bolt retainer clamp I

flexible drill shaft ic
REF 02822120

drill bit cannulated
REF 02965001 Ø 6mm

INSTRUMENTS

ratchet handle
REF RIV-10-11-02DB

screw driver long
REF 02801009 3,5mm modular

screw driver straight
REF 02701050 5mm modular

PREOPERATIVE AND POSTOPERATIVE INSTRUCTIONS

Intended Use:
The EPORE® buttress augment[1] is intended for use in total hip arthroplasty to fill and replace bone defects in the acetabulum with the use of screws. It is intended for bone-side cementless and implant-side cemented fixation.

((1) EPORE® buttress augment straight, EPORE® buttress augment left posterior/right anterior, EPORE® buttress augment right posterior/left anterior)

The EPORE® shim augment is intended for use in total hip arthroplasty to fill and replace bone defects in the acetabulum with the use of screws. The EPORE® shim augment will be placed under the EPORE® buttress augment in the acetabulum. It is intended for bone-side cementless and implant-side cemented fixation.

Intended Use spongiosa screw flat head Ø6.5mm/spongiosa screw Ø8mm

Bone Screws are intended for screwing into the bone for primary and/or permanent stable anchorage of an implant in case of inadequate primary stability.

Preoperative Instructions:
A preoperative planning is mandatory for optimal results. Before surgery a surgical planning with regard to the dimensions of the prosthetic model and the positioning of the implant components in the bone has to be carried out by the surgeon.

For this purpose, x-ray templates are available:
Digital templates: Digital templates are included in the data base of the common planning systems. For missing templates, please contact the provider of the planning software and request for these templates.
Radiographic templates: Alternatively, radiographic templates are available in various scale factors, which can be obtained from your local representative.
The surgeon must ensure that:

- all needed components are available during surgery. An adequate number of all necessary implant components will be available during surgery. It should be determined whether the implantation should be done cemented or cementless.
- all instruments necessary will be present for surgery and that they match the implants being used. Only instruments designed for use with the implant system by implantcast GmbH should be used. An exception are exclusively the standardized instruments used during surgery.
- The correct sized instruments are used during surgery to prevent damage to the implants.

Post-operative Instructions:
Post-operative patient care, patient instructions and warnings are of the utmost importance. The use of an external support of the operated extremity for a limited period is recommended. Active and passive movements of the operated extremity should be monitored.

The post-operative regime should be aimed at the prevention of overloading of the operated extremity and stimulation of the healing process.

Regular monitoring of the position and condition of the prosthetic components and the surrounding bone is recommended.

INDICATIONS/CONTRAINDICATIONS

Indications:
The decision for replacement of the joint should be based on careful evaluation. The indication for this type of surgery should only be made when all other conservative or surgical alternatives are less promising. Danger of post-operative complications can be limited by careful evaluation of the individual anatomical and load conditions, the condition of the soft tissues and the condition of the bone bed for the implants. The provision of metal augments is generally indicated only in patients whose skeleton is fully grown. Before intervention, preoperative examinations should be performed. The examinations depend on the patient's medical history.

Under consideration of these conditions, for the hip joint replacement with the EPORE® buttress augment, EPORE® shim augment in the acetabular area apply to the following indications:
- acetabular bone defects
- non-inflammatory degenerative joint disease including osteoarthritis and avascular necrosis,
- post-traumatic osteoarthritis,
- fractures,
- rheumatoid arthritis,

The indications of the corresponding endoprosthesis system must also be considered.

Contraindications:
The longevity of an orthopaedic implant can be reduced by biological aspects, material characteristics and biomechanical factors. Therefore, a careful examination of the indications is recommended in overweight patients, in patients with very high joint loads due to high physical activity as well as in patients younger than 60 years.

The metal augments are contraindicated in cases of:
- Known implant allergy to one of the materials used. Allergy to one of the implant materials. (The label on the secondary packaging of the respective component indicates the materials used. It is strongly recommended to perform an allergy test.)
- Ongoing infections.
- Physiological or anatomic conditions, which preclude or are not expected to maintain an adequate bony support of the implant or do not allow the implantation of a sufficiently large prosthesis
- Bone tumors (metastases) in the implant fixation area,
- untreated vascular diseases which limit blood supply to the affected limb,
- metabolic disorders that may impair bone formation.

In case of insufficient quantity and quality of bone stock, an alternative prosthetic treatment allowing for sufficient bony fixation should be considered.

The contraindications of the corresponding endoprosthesis system must also be considered.

RISKFACTORS

Riskfactors
The following risk factors may affect the success of the metal augments:
- excessive loading of the operated joint by strong physical work and/or inappropriate sports,
- severe deformities which lead to an impairment of bone fixation or the exact positioning or the function of the implant,
- therapies that may affect bone quality,
- muscle insufficiency,
- neuromuscular diseases of the affected limb,
- conditions that restrict the patient's ability or willingness to comply with medical instructions, especially during the healing process,
- Obesity,
- nicotine and/or drug abuse,
- alcoholism,
- previous surgeries on the affected limb,
- diabetes,
- psoriasis,
- Intra-articular injection of corticosteroids

Note compatibility:
The EPORE® buttress augments (straight, left posterior/right anterior and right posterior/left anterior) are interchangeable in every size of the ic acetabular cup systems (EcoFit® acetabular cup system; EcoFit® EPORE® acetabular cup, EcoFit® 2M acetabular cup, Ceraco® ROM, PE acetabular cup Müller II), as well as with the MUTARS® PRS system. Furthermore, they can be used in combination with each other and are to be affixed with bone cement. Depending on different radii and sizes or the positioning, different cement layer thicknesses can arise. It should be noted that biomechanically unfavorable properties of PMMA might occur, if the bone cement thickness is over 4mm. Therefore, the thickness of the connecting layer should be aimed not to be more than 4mm. The choice of implant combinations depends on the indications and the existing defect.
All EPORE® shim augments can be combined with all sizes/variants of the EPORE® buttress augments exclusively with bone cement. Depending on the indication and the bone defects, the EPORE® shim augment can be placed under the EPORE® buttress augment in the acetabulum. The EPORE® shim augments must not be combined with the artificial acetabular cups.

Note:
Further information can be found in the instructions of use for metal augments (09300087GB).

NOTES

NOTES

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

CE 0482

Your Local Distributor: