

Biotech Acetabular Cup System

Surgical Technique



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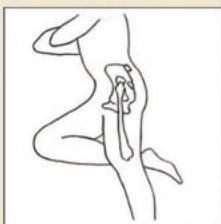
"Movement is Life"

Surgical Technique BA Acetabular Components

A full set of dedicated instruments and trial components is available to implant BA Acetabular Components and the associated inserts. The Pressfit shells are provided with a 15 degree rim flare, oblique rim fins and a titanium porous plasma sprayed coating for optimal initial stability and long lasting survival. In case initial stability can not be achieved, as for example might happen in revision surgery, screws can be inserted for improved fixation.

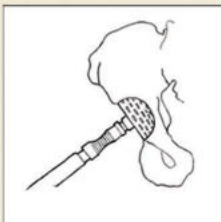
Pre-operative templating

Full pelvis AP X-ray should be available prior to surgery. The BA acetabular cup templates allow determining the most likely implant size, location and position. The cup should be positioned on sound bone to optimize stability and bone ingrowth. The head center is as near as possible to the anatomical position, whereas the most inferior part normally is at the level of the bottom of the teardrop.



Surgical exposure

The surgeon selects the preferred surgical exposure, based on experience and type of procedure. Exposure of the entire acetabular rim should be ensured.

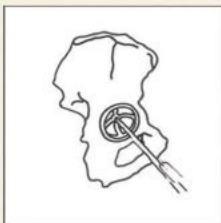
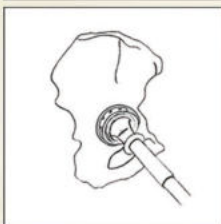


Preparation & Reaming of the Acetabulum

After removal of the femoral head, the acetabular cavity is fully exposed by removing soft tissue and osteophytes. Identifying the medial wall can be of help to act as a guide for the depth of the required reaming.

Starting with the smallest size, the acetabular reamer is introduced in 45° of abduction and 15 to 20° of anteversion. Reamer size is progressively increased to remove cartilage and until healthy, bleeding subchondral bone is exposed and the dome of the acetabulum is hemispherical. Care should be taken not to penetrate the medial wall of the acetabulum, to maintain as much as possible of the subchondral plate and remove sclerotic bone only.

Avoid applying pressure to the dome of the acetabulum if larger reamers need to be used for completion of the peripheral hemispherical configuration. Thickness and strength of the anterior and posterior columns is of major importance, for which reason they need to be assessed regularly. Since the BA BIOTAN pressfit Acetabular Components are provided with a rim flare, line-to-line reaming is recommended.

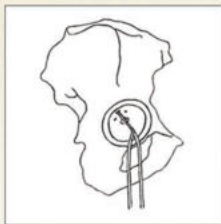
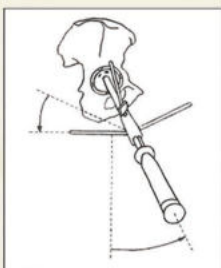


Trial sizing and Shell insertion

Following the preparation of the acetabular cavity, **a trial shell corresponding with the size of the last reamer is inserted.** Bone coverage, seating depth and apposition are determined.

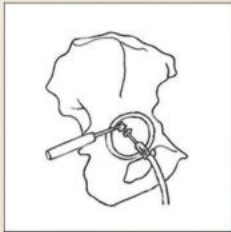
The final implant corresponding to the size of the trial shell is attached to the inserter and the cup is impacted at the preferred angles; usually 45° abduction - 15° anteversion. In case the bone quality or acetabular rim configuration does not allow for this position, the orientation of the shell may need to be adapted to achieve a firm seating.

The BA Pressfit Acetabular Series allow for additional screw fixation if primary stability is not obtained. Since it is recommended that screws are positioned in the dorsal-cranial quadrant, this position of the holes in the shell should be kept in mind at impaction.



The cup is slowly impacted, carefully ensuring that the preferred angles are maintained while advancing. The alignment guide, attached to the inserter handle, may be of help to achieve the proper orientation. The seating level of the acetabular shell can be verified through the apex hole, after removal of the inserter tool. Once the shell has reached its final position, the inserter tool is removed.

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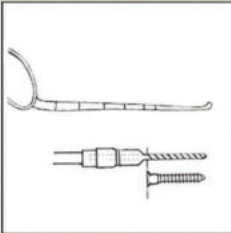
Acetabular Screw Placement

In case initial stability can not be obtained, acetabular screws may be used which are preferably inserted into the dorsal-cranial quadrant. Screws are available from 25 mm to 40 mm length with 5 mm increments. There is a flexible drill shaft available and drill bits of 2.8 and 3.2 mm of which the latter is used in case sclerotic bone is encountered.

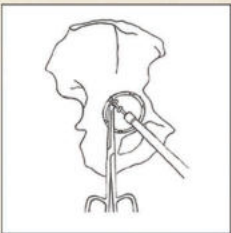
Start drilling to orientate the drill hole in the proper direction and avoid unexpected penetration of the second cortex.

A depth gauge can be used to establish the required screw length in order to avoid screw threads behind the second cortex.

Firm screw fixation might be obtained without penetrating the second cortex, yet a bicortical fixation may be needed in osteoporotic patients.



For screw placement there are a universal screwdriver and screw forceps available in the set of instruments. It is advocated that screws are firmly seated requiring strong rotational resistance.



Trial Insert Insertion and Trial Reduction

Before inserting the trial insert, make sure there is no chance on soft tissue interference and thoroughly clean the metal component. The rim taps of the acetabular shell allow for various positions of the trial insert, which will loosely fit into the shell without activating the Cliploc fixation mechanism.

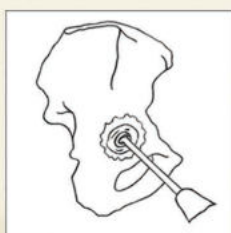
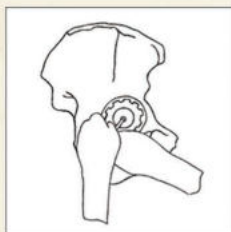
After preparing the femoral side, a trial reduction can be performed with the high-walled trial insert positioned such that optimal stability seems warranted. Joint stability and range of motion is checked in the usual manner. In case it is preferred to adjust the position of the trial insert, the femoral head is dislocated, followed by repositioning of the insert as preferred. Joint stability and range of motion check is repeated.



Final Insert Insertion

Once the optimal position of the acetabular trial insert is determined the final component can be inserted according to the same position as the trial component. Before insertion of this final insert, make sure that the Cliploc ring is floating unobstructed in its groove and that no soft tissue can interfere in a proper seating.

After inserting initially by hand, the insert is impacted into its final position by means of the insert impactor. Make sure that the insert is well locked into place by attempting to lift the insert out of the shell, for which an osteotome or hemostat can be used. If the insert disengages from the shell the cause needs to be investigated. Check again carefully the locking ring and if any tissue or bone is preventing the insert from proper seating. Clear the obstruction and repeat the previously mentioned actions until proper seating is achieved.



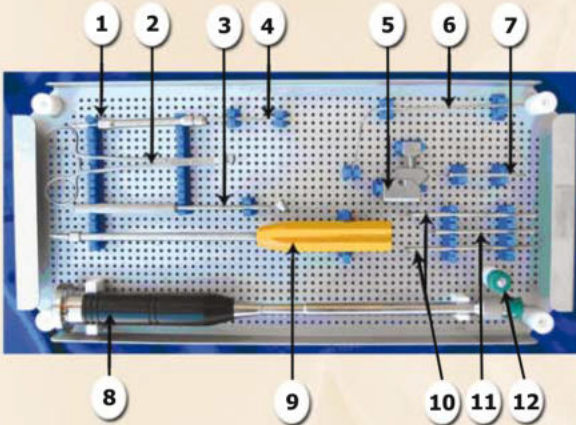
Cemented Cup Insertion

Following to the preparation of the acetabular cavity, a trial cemented cup sizer, one size smaller than the size of the last reamer is chosen. Bone coverage, seating depth and opposition are determined. **Choosing a final cemented cup (according to the size of the trial cemented cup) one size smaller than the final reamer size, allows for a 2mm circumferential cement mantle**

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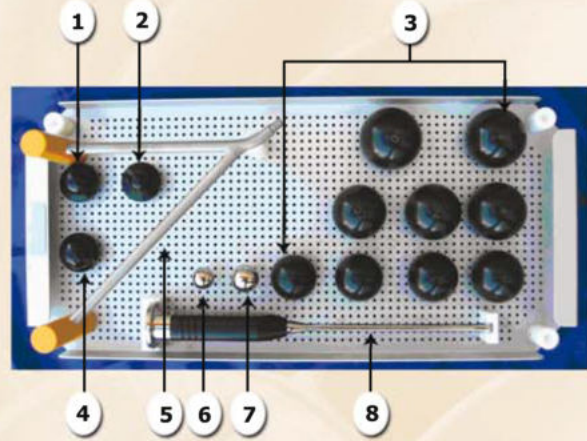
Basis Acetabular Instrument Tray 720-0003-0000

Biotech art.nr.	description	Qty/set
1. 720-0003-0003	Flexible drill shaft A. (quick connect)	1 pc
2. 720-0003-0021	Screw forceps	1 pc
3. 720-0003-0022	Drill guide 3,2	1 pc
4. 720-0003-0029	Drill 3,2x40	1 pc
5. 720-0003-0004	Angle Guide	1 pc
6. 720-0003-0023	Depth Gauge	1 pc
7. 720-0003-0025	Screwdriver plate for 0004	1 pc
8. 720-0003-0001C-1	Cup impactor shaft with changeable head	1 pc
9. 720-0003-0028	Screwdriver (for fixation screw)	1 pc
10. 720-0003-0005	Rod for angle guide, Long	2 pc
11. 720-0003-0006	Rod for angle guide, Short	1 pc
12. 720-0003-0001C-4	Reserve head for Cup impactor	1 pc



Müller Cup Instrumentation Tray 720-0006-0000

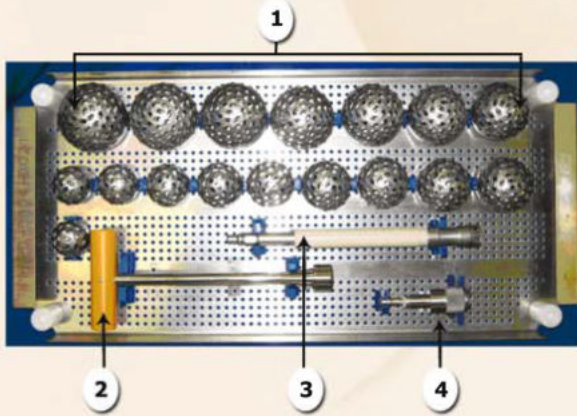
Biotech art.nr.	description	Qty/set
1. 720-0006-0002	Insert adapter for 28mm	1 pc
2. 720-0006-0014	Insert adapter for 32mm	1 pc
3. 720-0006-0013	Insert adapter for 22mm	1 pc
4. 720-0006-0003 ..0011	Trial cup (44-60mm)	1 pc/size
5. 720-0006-0001	Müller cup inserter	1 pc
6. 720-0003-0020	Insert pusher 22mm	1 pc
7. 720-0003-0019	Insert pusher 28mm	1 pc
8. 720-0006-0015	Trial cup inserter	1 pc



Acetabulum Reamers Tray 720-0004-0000

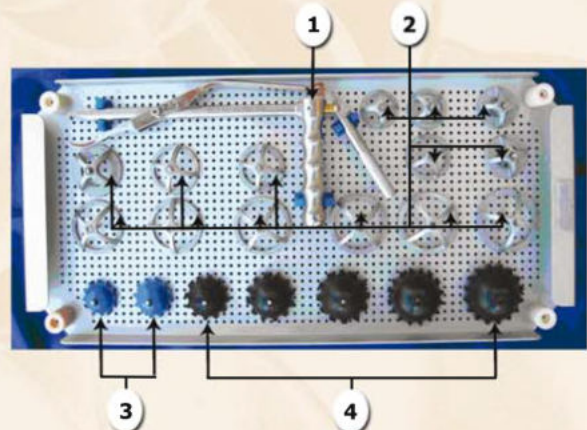
Biotech art.nr.	description	Qty/set
1. 720-0004-0004...0020	Acetabulum reamer 38...70mm	1 pc/size
2. 720-0004-0002	T-handle for reamer shaft	1 pc
3. 720-0004-0003	Reamer shaft (Aesculap connection)	1 pc
4. 720-0004-0023	Adapter for reamer shaft *	1 pc

*optionally: for other type of connections



Acetabular Trial Insert and Gauges Tray 720-0005-0000

Biotech art.nr.	description	Qty/set
1. 720-0005-0028	Cup insert extractor	1 pc
2. 720-0005-0010...0023	Acetabular shell gauge (38mm 64mm)	1 pc / size
3. 720-0005-0001...0002	Acetabular trial insert 22mm (20,21)	1 pc / size
4. 720-0005-0003...0007	Acetabular trial insert 28mm (22,23,24,25,26)	1 pc / size



Biotech™ does not practice medicine and does not recommend any particular surgical technique or implant for use on a specific patient. Choosing the appropriate technique and implant is the responsibility of the surgeon performing implant procedures.



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