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## Acetabular Insert - Type BS



## ■ Introduction

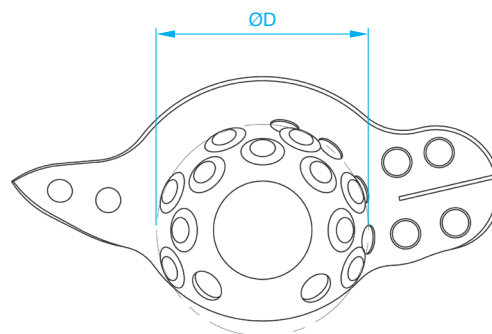
The type BS acetabular insert was designed in light of the latest findings and experience with the Burch-Schneider ring. During its manufacturing, sophisticated technology, including 3D computerized modelling, was used.

This publication should serve as a brief user's manual for the given implant and instrumentarium. For the sake of conciseness, it is focused only on the implantation of this implant, and it is assumed that the surgeon and other trained staff are acquainted with general principles of hip joint arthroplasty. The aim of this publication is to provide surgeons and scrub nurses with a quick reference guide on the correct use of individual components of the instrumentarium, so that optimum outcomes are achieved and – last but not the least – unnecessary damage or devaluation of the instrumentarium and/or the implant are avoided. By no means is this intended as a manual for surgical technique.



## Sizes

The type BS acetabular insert (hereinafter the “BS insert”) is intended for the treatment of cases where there is extensive bone loss in the acetabulum. It is manufactured from ISO 5832-1 stainless steel in two sizes, with an external diameter of 56 mm and 51 mm, in both right and left variants. The below-listed cortical or spongious bone screws are part of the assembly for the BS insert. The BS insert is intended as a load-bearing component under a cemented flat cup for the hip joint (UHMWPE) with diameters of 49 mm and 44 mm.



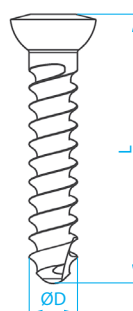
BS Acetabular insert		
Ø D / Ø cup (mm)	version (mm)	Order number
51/44	L	333600
51/44	R	333601
56/49	L	333610
56/49	R	333611

## Screws

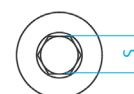
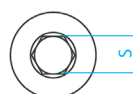
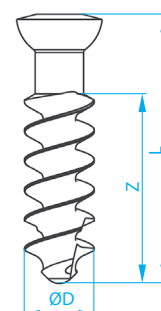
Cortical hex cup screws with a low-profile head of 3.5 mm are distributed in five lengths from 25 to 45 mm in 5 mm increments. These screws are fitted with a self-cutting tip.

Cancellous hex cup screws with a low-profile head of 3.5 mm are distributed in five lengths from 25 to 45 mm in 5 mm increments. These screws are fitted with a self-cutting tip.

Cortical Screw



Cancellous Screw



Material: ISO 5832-1

## General part

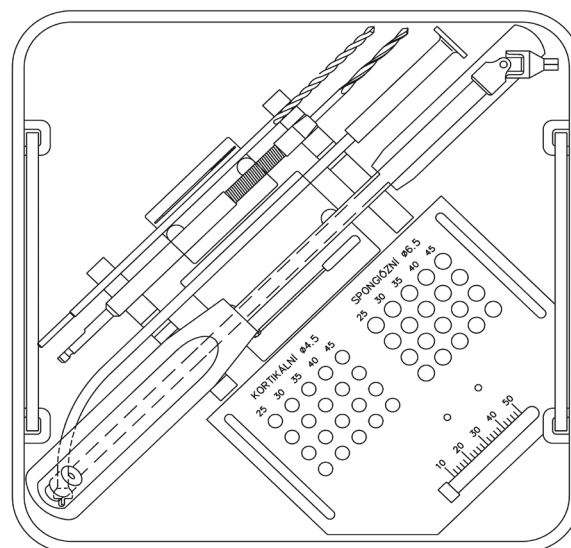
The type BS acetabular insert assembly consists of the BS insert itself and the screws. The complete assembly of the acetabular construction consists of the type BS acetabular insert, in combination with a cemented flat acetabular cup corresponding to the parameters set by the manufacturer’s specifications indicated in the respective insert package for the type BS acetabular insert.

The flat acetabular cup is intended for heads corresponding to the parameters set by the manufacturer’s specifications indicated in the respective insert package.

	Ø D (mm)	L (mm)	Order number
Cortical Screw	4,5	25	119025
	4,5	30	119030
	4,5	35	119035
	4,5	40	119040
	4,5	45	119045
Cancellous Screw	6,5	25	119125
	6,5	30	119130
	6,5	35	119135
	6,5	40	119140
	6,5	45	119145

## Instruments

The instrumentarium is positioned in a tray as an instrument kit for the application of the type BS acetabular insert (Catalogue No. 301040), enabling a well-arranged layout for the instruments during surgery, transportation, sterilization and storage. The instrument kit components are listed in the table "Contents of Instrument Kit for Application of Type BS Insert". Along with the instruments, the tray also contains a removable holder for screws, a fork for screws, and a screw length gauge.



### Set of instr. for appl. of reconstruction cage - BS (301040)

	Denomination	Qty	Order No.
1	Cortical screw, D4.5, L25, short head	4	119025
2	Cortical screw, D4.5, L30, short head	4	119030
3	Cortical screw, D4.5, L35, short head	4	119035
4	Cortical screw, D4.5, L40, short head	4	119040
5	Cortical screw, D4.5, L45, short head	4	119045
6	Cancellous screw, D6.5, L25, short head	4	119125
7	Cancellous screw, D6.5, L30, short head	4	119130
8	Cancellous screw, D6.5, L35, short head	4	119135
9	Cancellous screw, D6.5, L40, short head	4	119140
10	Cancellous screw, D6.5, L45, short head	4	119145
11	Screw holder	1	104700
12	SF - Guiding drilling sleeve, D3.2	1	304115
13	SF - Guiding drilling sleeve, D4.0	1	304116
14	SF - Depth gauge	1	304120
15	SF - Holding pliers	1	304122
16	Articulated hexagonal screwdriver, D3.5	1	304125
17	Flexible adapter for drill bit, D3.2 - triangular conn.	1	403051
18	Flexible adapter for drill bit, D4.0 - triangular conn.	1	403052
19	Drill bit, D3.2, L65/35	1	403063
20	Drill bit, D4.0, L65/35	1	403067
21	Drill bit, D3.2, L200 - triangular conn.	1	702320
22	Stand for screws - BS	1	301044
23	Tray - instr. for appl. of reconstruction cage - BS	1	301042

*Instruments used as standard for the application of similar implants can be used as an addition to the instrumentarium for the application of the type BS acetabular insert. Some of these instruments are listed in the table "Recommended instruments".*

### RECOMMENDED INSTRUMENTS

	Order No.	Instrument
D1	102450	Hexagonal screwdriver, D3.5, L250
D2	304102	Acetabular reamer extender - triangular conn. (Synthes)
D3	304650	Acetabular reamer, D52
D4	304665	Acetabular reamer, D56
D5	306800	Impactor
D6	307050	Chisel

*Recommended instruments are not part of the instrument kit for the application of the type BS insert.*



## ■ Surgical Technique

### General Principles

Prior to surgery, we recommend carrying out preoperative planning, allowing the size of the BS insert to be determined using the provided transparent templates, and the approximate number of grafts. However, the final decision is made during surgery after preparation of the acetabulum for insertion of the BS insert, allowing the determination of the extent of the defect.

The BS insert surgery can be carried out using any approach at the surgeon's discretion.

The surgical technique and the surgical procedure may differ according to the selected approach. It is recommended to use a transtrochanteric approach when the trochanter major with muscle insertion must be cut loose. Although cutting loose the trochanter major is not always necessary, the use of the BS insert requires more extensive exposure of the acetabulum and the wing of the iliac bone.

Trochanteric osteotomy is never required with an anterolateral approach, although it requires the uncovering of the large lobe with the gluteal muscles.

### Surgical Procedure for BS Insert

1. Remove the loosened component and thoroughly remove all foreign bodies and debris.
2. Determine the extent of the defect, visualize edges of the acetabulum, and uncover the surface of the iliac bone above the acetabulum (the gluteus minimus muscle needs to be shifted aside to the same extent to which the proximal flange of the BS insert needs on the iliac bone).
3. Prepare shading and the bottom of the acetabulum with a rotary reamer (D2, D4, D5) evenly several centimetres in a proximal direction, and excochleate its cavities.
4. If the BS insert is to be notched into the ischium

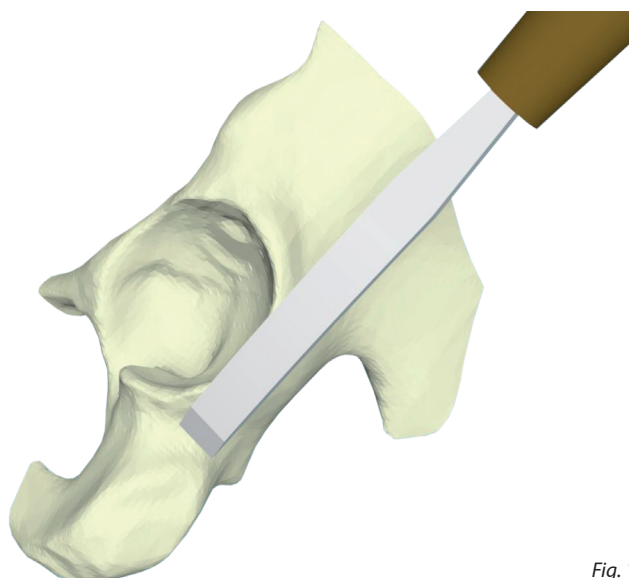


Fig. 1



bone, use a chisel (D7) to make a notch about 2 mm deep, outwardly concaved (three-armed), which is prepared for the distal tip of the BS insert and serves as its introducer. (Fig. 1.)

**Note:**

*The width and position of the notch can be approximately determined after placing the BS insert into the acetabulum, if you are certain about the size of the BS insert that you are going to use.*

5. Fill in any defects of the acetabulum, its bottom and all cavities with spongy homografts, and then hammer them tightly with a round head mallet.
6. Select the correct size of the BS insert and corresponding size of the PE cup.

**Note:**

*The BS insert can be inserted into the acetabulum and the proximal flange can be slightly shaped using tongs or a screwdriver, as needed. While shaping, attention should be paid to avoiding deformation of the holes for screws and crossing the proximal flange.*

7. Insert the BS insert's distal tip into the notch in the ischium bone, then press it as far laterally as possible; even in this position, the proximal wing can still be slightly elevated. Using the positioner (D6), impact the insert through the above-mentioned notch in the ischium bone into the required position (Fig. 2). The same positioner can be used for impacting the proximal wing of the BS insert to the iliac wing (Fig. 3); if necessary, further homografts may be added through the hole in the bottom of the BS insert, so that the insert fits well on the iliac bone, as well as on grafts.

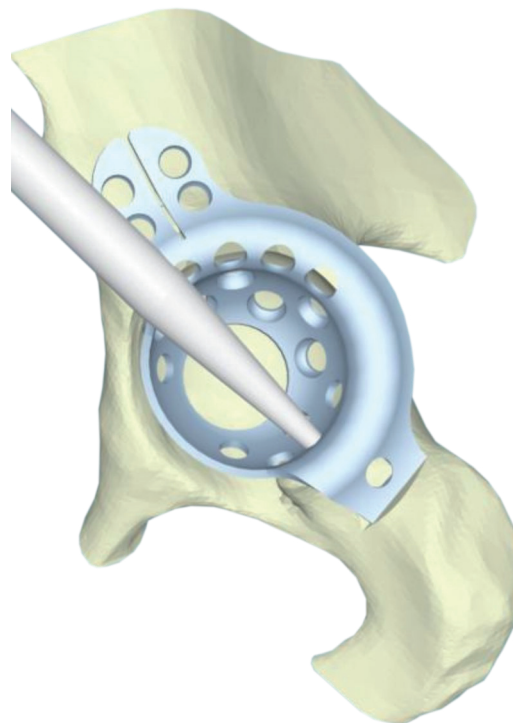


Fig. 2

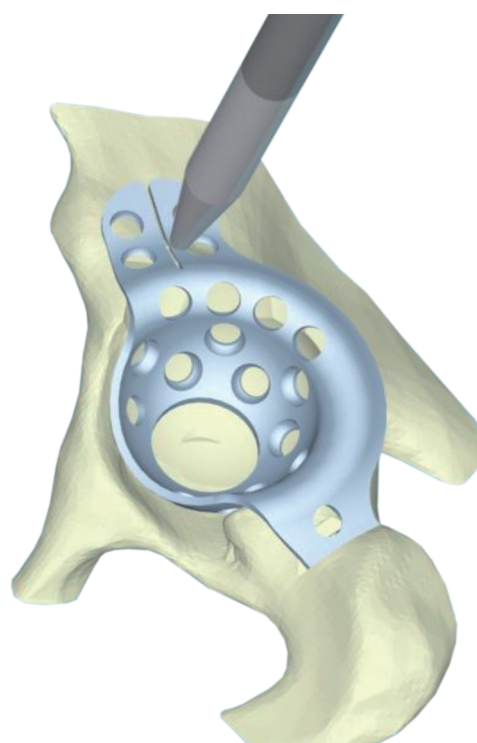


Fig. 3



**Note:**

The positioning of the BS insert depends on the surgeon's preferred position. The insert can be placed on the ischium bone with its distal tip, or it can be placed into the already prepared notch. If we do not wish to place the distal tip on the ischium bone or into it, we can interlace it along the incisure of the acetabulum to the obturator foramen and bend it for firmer fixation.

8. In the proximal direction, fix the BS insert to the iliac bone with a minimum of four self-cutting cortical or spongious screws with a low-profile head (Fig. 4); the type of screws is selected based on the surgeon's preference. Screw holes are drilled using a 3.2 diameter drill bit with a flexible extension (or a straight drill bit can be used) {11, 12} and a drilling sleeve {14}. The depth of the holes is measured with a special depth gauge {13}, whereas its scale directly shows the proper screw length. Screw in the screws in different directions, and make sure not to move the BS insert in the proximal direction.

**During application of the BS insert, always use screws intended for insert fixation!**

When placing a screw, clasp it into the holding tongs {D3} and screw it in using an articulated screwdriver {15}. It is necessary to ensure that the fixation is stable and the BS insert is tightly seated to the bone and homografts.

**Note:**

We recommend placing the screws against one another at the widest angle. In case the BS insert shifts proximally, add grafts underneath the insert. The screws can be placed into 4 holes in the mouldable proximal flange, into 4 holes in the

proximal part of the rim, and into all the holes in the inner hemispheric part of the insert that have a setting for a screw head.

When necessary, additional fixation of the distal tip can be performed using 2 screw holes located in the distal tip.

9. Into the BS insert, and cement the acetabular cup (UHMWPE) of corresponding size. It is necessary to check the size of the stem head, as it must correspond to the articular surface diameter of the cemented flat cup (28 mm), and replace it, if needed.

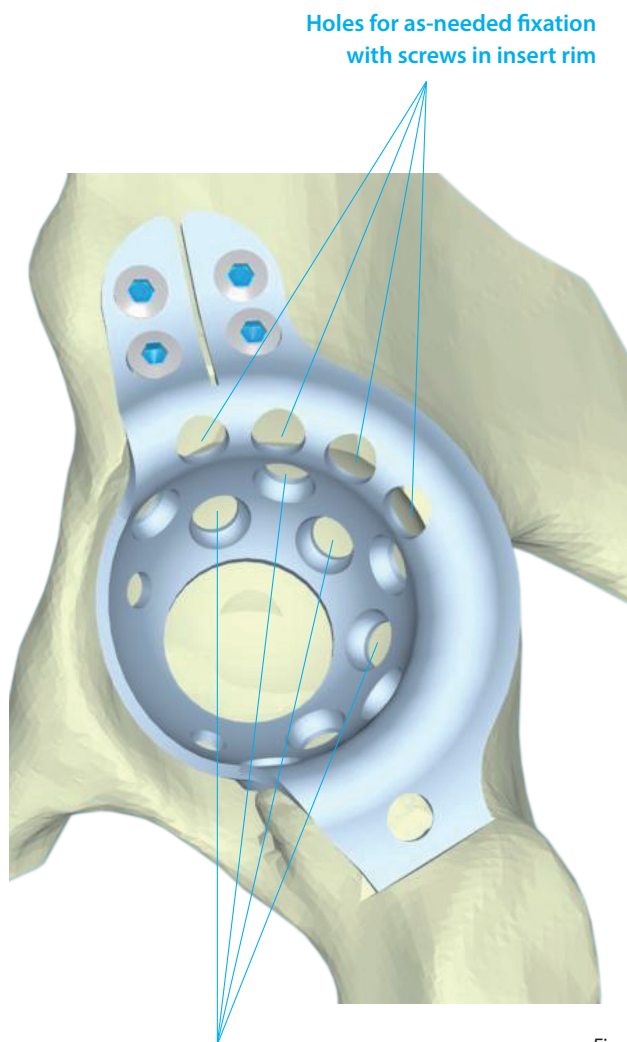



Fig. 4


Holes for as-needed fixation with screws from inner side of insert



■ Contact

**Export:**

tel.:  +420 312 811 221

 +420 312 811 225

[export@beznoska.cz](mailto:export@beznoska.cz)

CE 1014