



*RingLoc® Acetabular
Series*

operative technique



Spine

Trauma

BioMaterials

Cement

Joint Replacement





Disclaimer

Biomet UK Ltd., as the manufacturer of this device, does not practice medicine and does not recommend any particular surgical technique for use on a specific patient. The surgeon who performs any implant procedure is responsible for determining and utilising the appropriate techniques for implanting the prosthesis in each individual patient. Biomet UK Ltd. is not responsible for selection of the appropriate surgical technique to be utilised on an individual patient.

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Pre-Operative Planning

Pre-operative planning can be accomplished by using the appropriate RingLoc® acetabular shell x-ray template. It is recommended that a radiographic marker be used to properly determine the x-ray magnification.

Once the x-ray magnification has been determined, the appropriate acetabular component is chosen to suit the diameter of the acetabulum.

Positioning of the Patient

The Biomet UK Ltd range of RingLoc® acetabular shells can be implanted using any of the standard approaches for total hip arthroplasty. In any approach, the goal is to achieve a full exposure of the proximal femur and the acetabulum. Full exposure of the hip joint allows a direct view of the femoral canal and visualisation of the rim and depth of the acetabulum. Effective preparation of the bone and implantation of the device can then be carried out when these are realised.

step 1

Acetabular Preparation

Acetabular preparation is undertaken using the grater reamers supplied in the RingLoc® graphic trays. The acetabular reamers are prepared by securely placing the grater onto the drive shaft using the locking mechanism shown below.



step 2

Acetabular Preparation

It is important to remove all soft tissue and any articular cartilage down to bleeding bone. Some loss of subcondral bone may be inevitable in order to completely seat the acetabular component. It is important to note, that whenever possible, subcondral bone particularly peripheral bone, should be preserved.

The axis of the grater reamer should be positioned at 40 to 45 degrees from the vertical axis, and in 10 to 15 degrees of anteversion.

Begin reaming with the smallest available grater reamer, progressively increasing the diameter of each sequential grater reamer until the required diameter is achieved. The final grater reamer used should be equivalent to the diameter of acetabular shell to be implanted. (e.g. 54 mm diameter acetabular shell = 54 mm diameter grater reamer).

Note. If acetabular osteotomes are used, final shaping must still be achieved using the hemispherical RingLoc® grater reamer to ensure a congruent fit between the shell and the floor of the acetabulum.

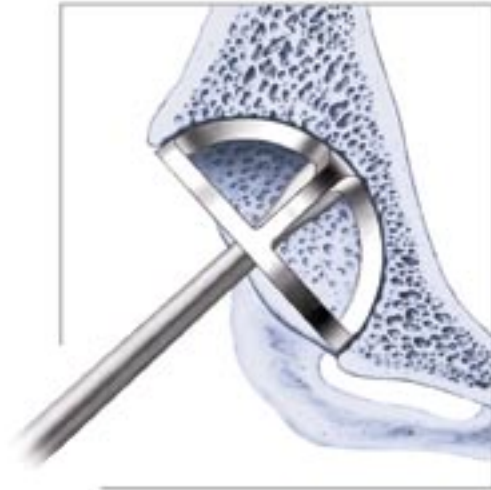


step 3

Acetabular Preparation

Thoroughly clean and dry the acetabulum prior to inserting the acetabular shell gauge into the acetabulum. The diameter should correspond to the final diameter of the grater reamer. These are used to check the acetabulum has been reamed to the correct size and ensure that the acetabulum is hemispherical.

Should there be gaps between the gauge and the acetabulum, it will be necessary to increase the diameter of the final grater reamer.



step 4

Shell Insertion

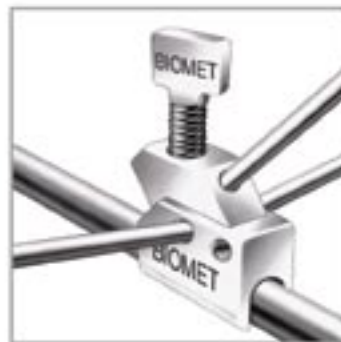
Upon correct sizing, attach the appropriate RingLoc® shell directly to the inserter handle.



step 5

Shell Insertion

For correct positioning of the shell, the cluster of three dome holes should be positioned in the superior/posterior quadrant, with the cup impacted at 40 to 45 degrees of inclination from the horizontal axis of the pelvis and with 10 to 15 degrees anteversion. As an aid to correctly orientate the shell, an acetabular alignment device is available.

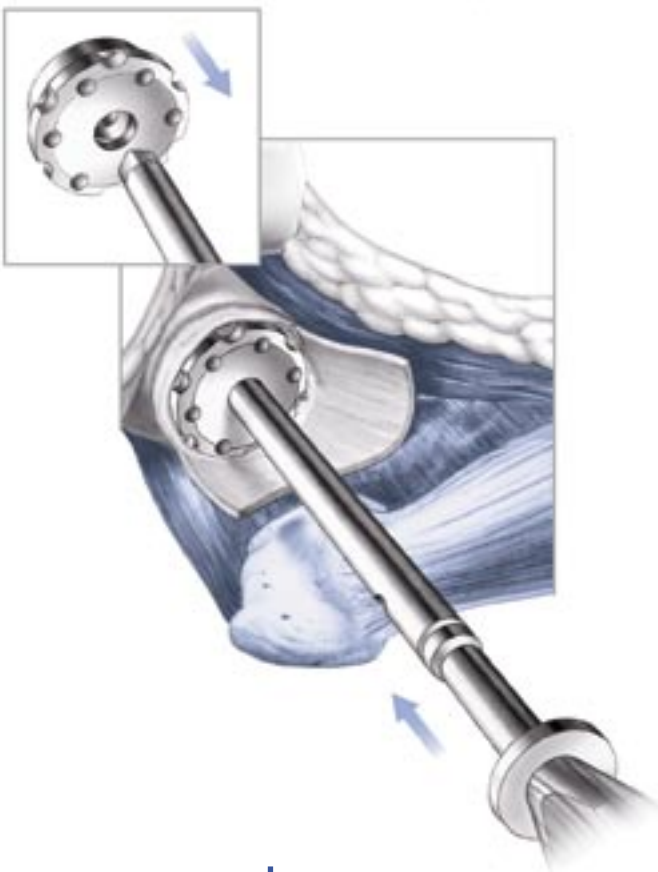


step 6

Shell Insertion

Once the shell has been correctly orientated and located within the acetabulum, final impaction is completed utilising the shell impactor plates and impactor handle.

Check via the dome holes and apex hole that the shell is in full contact with bone.

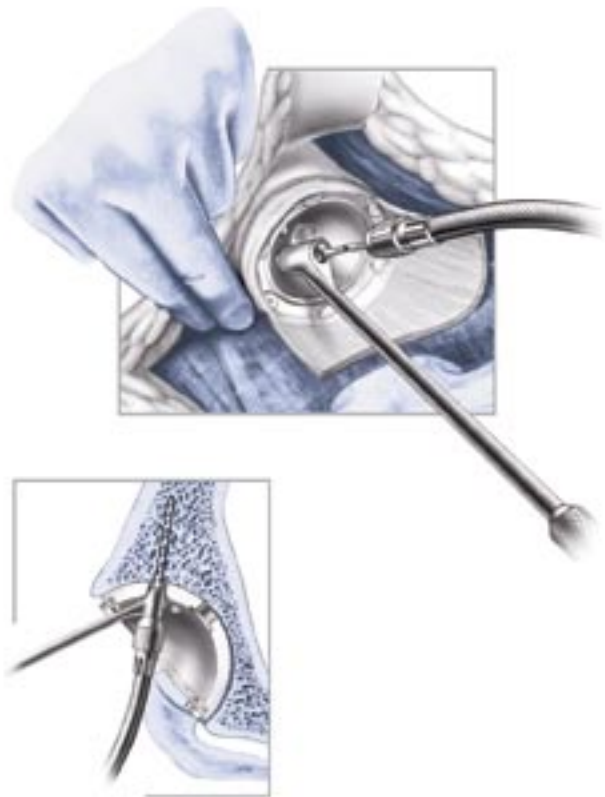


step 7

Screw Insertion

For primary cases where good bone stock is present, and if all three peripheral fins are seated, the use of fixation screws, in general is unnecessary. In cases where all fins are not seated, supplementary screw fixation is advised. When dome screws are utilised, they should be placed posterosuperiorly into the thick part of the ilium. It should be noted that screws should never be placed in the anterior-medial area of the acetabulum.

Prepare the screw holes utilising the quick connect drill bits, the drill guide and the flexible drill bit shaft. When drilling into the posterior/superior quadrant, place a finger posteriorly into the sciatic notch to ensure the screw cannot penetrate too deeply.



step 8

Shell Insertion

Measure the length of the drill holes with the depth gauge. Insert the low profile dome screws using the forceps and universal joint screwdriver. To avoid impingement of the acetabular liner, it is important to check that all screw heads are seated below the inner surface of the shell.



step 9

Trial Reduction

Remove any soft tissue or debris prior to insertion of the trial liner. Insert the required trial acetabular liner into the acetabular shell. Trial liners are easily removable and are not locked into position by the locking mechanism of the shell. There are three types of trial liners available, these being the Hi-wall, 10 degree and standard. If a Hi-wall liner is chosen, the 'hi-wall' of the trial cup should be positioned posterior/superior or posteriorly. This position provides optimal joint stability without interfering with the natural range of movement.

With the final broach in place, provisional head/necks are selected to determine the appropriate neck length and to restore lateral offset. A trial reduction is carried out to ensure the correct leg length and joint stability have been achieved.



step 10

Trial Reduction

Note the orientation of the trial liner, as this corresponds to the position of the definitive implant.

Orientate manually the Hi-wall or 10 degree face of the liner such that it is positioned posterior/superior, matching the orientation of the trial liner. Use the acetabular liner pusher to fully impact the ArCom[®] polyethylene liner into the shell. Check the liner is correctly seated.



Component Removal

Should it be necessary to remove the acetabular liner from the acetabular shell, a removal instrument is available.

Slide the foot of the removal instrument between the flange of the acetabular liner and the top face of the shell. Grip the lever so that the arm of the lever rests against the opposite side of the acetabular shell. Then, whilst gripping simultaneously the lever and shaft, this holds the device securely in position, push the trigger mechanism. This should eject the liner from the shell. See diagram.

It should be noted that if this instrument is used to remove the liner, the RingLoc® mechanism should be thoroughly inspected for damage. It is recommended to insert a new RingLoc® circlip into the shell prior to inserting a second acetabular liner.



implants

RingLoc[®] Acetabular Instrument Tray

part number	description
31-410183	Instrument tray complete with instruments
31-410173	Instrument tray
424504	3.2 mm drill guide - standard length
424412	2.8 mm drill guide - standard length
424400	Flexible drill shaft
424417	Screw forceps
31-410130	Shell impactor handle
423642	Impactor plate size 22
423643	Impactor plate size 23
423644	Impactor plate size 24
423645	Impactor plate size 25
423646	Impactor plate size 26
423647	Impactor plate size 27
423648	Impactor plate size 28
31-410180	3.5 mm T wrench

Sterile packed (single use) quick coupling twist drills

23-424505	Quick coupling twist drill 2.8 mm diameter x 20 mm
23-424506	Quick coupling twist drill 2.8 mm diameter x 30 mm
23-424507	Quick coupling twist drill 2.8 mm diameter x 40 mm
23-424508	Quick coupling twist drill 3.2 mm diameter x 20 mm
23-424509	Quick coupling twist drill 3.2 mm diameter x 30 mm
23-424510	Quick coupling twist drill 3.2 mm diameter x 40 mm

Acetabular Grater Reamer and Gauge Tray

part number	description
31-410184	Instrument tray complete with instruments
31-410174	Instrument tray
31-475690	Grater reamer shaft
29-476046	Grater reamer head 46 mm
29-476048	Grater reamer head 48 mm
29-476050	Grater reamer head 50 mm
29-476052	Grater reamer head 52 mm
29-476054	Grater reamer head 54 mm
29-476056	Grater reamer head 56 mm
29-476058	Grater reamer head 58 mm
29-476060	Grater reamer head 60 mm
29-476062	Grater reamer head 62 mm
29-476064	Grater reamer head 64 mm
29-476066	Grater reamer head 66 mm
29-476068	Grater reamer head 68 mm
29-476070	Grater reamer head 70 mm
31-400380	Hudson zimmer/AO adaptor
468730	Hudson to zimmer adaptor
423598	Gauge handle - straight
423746	Shell gauge 46 mm
423748	Shell gauge 48 mm
423750	Shell gauge 50 mm
423752	Shell gauge 52 mm
423754	Shell gauge 54 mm
423756	Shell gauge 56 mm
423758	Shell gauge 58 mm
423761	Shell gauge 60 mm
423762	Shell gauge 62 mm
423764	Shell gauge 64 mm
423766	Shell gauge 66 mm
423768	Shell gauge 68 mm
423770	Shell gauge 70 mm

Trial Acetabular Liner and General Instrument Tray

part number	description
31-410185	Instrument tray complete with instruments
31-410175	Instrument tray
31-410120	Hi-wall liner impactor plate
31-410121	Standard and 10 degree liner impactor plate
31-410122	22.2 mm liner inserter
31-410126	26 mm liner inserter
31-410128	28 mm liner inserter
31-410132	32 mm liner inserter
424495	Screwdriver 2.5 mm hex
31-400485	Screwdriver flat
424493	Universal joint screwdriver 3.5 mm hex
424486	Angle guide complete with 3 alignment rods and wrench
424492	Calibrated depth gauge
31-410138	Shell/liner impactor handle

The above tray has sufficient space to accommodate 21 provisional/trial acetabular liners

Provisional/trial acetabular liners are available in Standard, Hi-Wall and 10 degree designs in diameters 22.22 mm, 25 mm, 26 mm, 28 mm, 29 mm and 32 mm.

Revision Grater Reamer and Instrument Tray

part number	description
31-410186	Instrument tray complete with instruments
31-410176	Instrument tray
29-476072	Grater reamer 72 mm
29-476074	Grater reamer 74 mm
29-476076	Grater reamer 76 mm
29-476078	Grater reamer 78 mm
29-476080	Grater reamer 80 mm
31-475690	Grater reamer handle
31-400380	Hudson zimmer/AO adaptor
468730	Hudson to zimmer adaptor
423772	Shell gauge 72 mm
423774	Shell gauge 74 mm
423776	Shell gauge 76 mm
423778	Shell gauge 78 mm
423780	Shell gauge 80 mm
423598	Shell gauge handle
423651	Shell extractor plate 21
423652	Shell extractor plate 22
423653	Shell extractor plate 23
423654	Shell extractor plate 24
423655	Shell extractor plate 25
423656	Shell extractor plate 26
423657	Shell extractor plate 27
423658	shell extractor plate 28
423659	Shell extractor/adaptor
31-473621	Modular slide hammer assembly
423619*	Liner removal instrument
423700	Liner removal instrument

* *optional instrument available*

