

# Liverpool™

Radial Head Replacement



## Operative Technique



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### Introduction

The Liverpool™ Radial Head Replacement (“RHR”) was developed for use in the treatment of trauma, post traumatic deformity and elbow instability of the radio capitellar joint, by Professor S. P. Frostick, MA DM FRCS., Professor of Orthopaedics and Head of Department, Department of Musculoskeletal Science, Royal Liverpool Hospital, Liverpool, UK.

### Design Concept

The Liverpool™ RHR has been designed to restore the anatomy of the natural radio capitellar joint and has the following features:

- The articulating surface of the prosthesis is angled at 10° to approximate the position of the natural radial head articulating surface.
- The stem is offset from the body of the prosthesis to approximate the angular curve of the radius.
- The stem has a MacroBond® coating for enhanced fixation.
- A range of 2 head diameters and 13 implant lengths to allow for all procedure types to be accommodated.

# Operative Technique

by Professor Simon P. Frostick

## 1. Patient Positioning

The patient is positioned on the operating table supine, arm angled and palm facing downwards, with an arm board. It is important to ensure the arm is mobile and unencumbered by the drapes. A pneumatic tourniquet is applied.

## 2. Surgical Approach

A limited Kocher approach provides visualization of the lateral joint adequate to resect and replace the radial head.

The skin incision begins 4cm proximal to the joint just posterior to the supracondylar bony ridge and distally over the anconeus for approximately 6cm distal to the tip of the olecranon.

The interval between the extensor carpi radialis longus and anconeus is then identified proximally and distally. The interval is developed to expose the capsule of the radiohumeral joint. The anconeus is reflected subperiostally from the proximal ulna. Sharp dissection frees the bony attachment of the triceps expansion of the anconeus at the lateral epicondyle. The annular ligament is divided between stay sutures.



## 3. Resection of the Radial Neck

If the radial head is fractured, the pieces are removed and reconstructed to ensure all bone is removed from the joint.

The radius is elevated using the radial elevator hook.

The radial cutting jig is placed over the neck of the radius and the radial head is resected leaving a flat surface, so the contact between the collar of the prosthesis and the bone is complete.



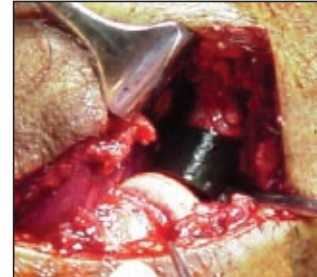
## 4. Preparation of the radial canal

The 16mm radial reamer is introduced into the radial canal, seated and twisted through at least 90° to create the stem hole.



## 5. Trial Reduction

With the hand in full supination an appropriate size trial is inserted with the sign X on the lateral side, the joint is reduced and the length of the radius plus implant is evaluated. If this is satisfactory then the diameter of the head is assessed, and if it is decided that the larger diameter head is needed the trial is removed and the radial canal is enlarged with the 18mm radial reamer. A slight press-fit of the trial stem in the medullary canal should be achieved. Excessive compression should be avoided. The forearm is carried through all range of movements so the relationship of the implant and the capitellum is observed.



## 6. Implantation of Prosthesis

After the size and head height have been established, the canal is reamed again to achieve a cement mantle. If the 16mm implant was selected, use the 17.5mm reamer. If the 18mm implant was selected, use the 19.5mm reamer. The prosthesis corresponding to the final trial is selected and orientated to the same position as the final trial (using the X on the implant as a reference). The implant is gently impacted into place using the impaction tool. The annular ligament should be re-approximated.



## 7. Closure

Routine closure in layers is performed. The use of a drain is at surgeons' discretion.

## 8. Postoperative Regime

Mobilization is started the next day avoiding valgus stress.

This brochure is presented to demonstrate the surgical technique utilized by Professor S. P. Frostick, MA DM FRCS. Biomet, 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 utilizing the appropriate techniques for implanting the prosthesis in each individual patient. Biomet is not responsible for selection of the appropriate surgical technique to be utilized on an individual patient.

## Ordering Information

Liverpool™ Implant Radial Head Replacement		
Part No.	Provisional	Description
11-200000	408000	16mm Dia. 6mm
11-200001	408001	16mm Dia. 8mm
11-200002	408002	16mm Dia. 10mm
11-200003	408003	16mm Dia. 12mm
11-200004	408004	16mm Dia. 14mm
11-200005	408005	16mm Dia. 16mm
11-200006	408006	16mm Dia. 18mm
11-200007	408007	18mm Dia. 14mm
11-200008	408008	18mm Dia. 16mm
11-200009	408009	18mm Dia. 18mm
11-200010	408010	18mm Dia. 20mm
11-200011	408011	18mm Dia. 22mm
11-200012	408012	18mm Dia. 24mm

## Instruments

### Radial Reamer

408020	16mm
408021	18mm

### Discovery™ T-Handle

414892

### Radial Head Cutting Jig

408030

### Trial Implant Insertion/ Alignment Forceps

408031

### Radial Distractor Hook

408034

### Cutting Jig Nails x 3

408033

### X-Ray Templates

408035	16mm
408036	18mm

## Instruments, cont.

### Radial Head Impactor

408032

### Discovery™ Impactor Handle

414925

### Radial Reamer

408025	17.5mm
408026	19.5mm

### Instrument Case

408037	without instruments
408038	with instruments





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Y-BMT-792R/063003/M