



# Modular Bipolar Femoral Head Replacement

Surgical Technique



## Introduction

The Modular Bipolar Femoral Head construct consists of a CoCr shell, a polyethylene insert, and a standard CoCr femoral head. The Bipolar Shells are available in incremental sizes from 38mm to 70mm. Size 22mm and 26mm CoCr femoral heads with offset lengths from -3.5mm to +8mm may be used, allowing for optimal recreation of the patient's anatomy.

**N** **Note: Ceramic heads are not to be used**

## Femoral Preparation and Implantation

For detailed instructions on the osteotomy of the femoral neck, preparation of the femur, trial reduction of the femoral implant, insertion of the femoral stem, and post-operative management, please refer to the femoral implant's specific surgical technique, or contact your Zimmer representative.

## Preparing the Acetabulum

Examine the hip joint for congruency articular lesions, and leave the labrum and transverse ligament intact. Once the femoral head has been resected, measure it using the head gauge or calipers (**Fig. 1**) and select an endoprosthesis trial. Try measuring 1mm over and under to obtain closest fit.



**Fig. 1**

## Trial Fit

Connect the appropriate endoprosthesis trial to the trial handle using the snap-fit tip that is threaded onto the handle (Fig. 2).

**N** Note: The adapter of the trial handle comes in 22mm and 26mm sizes.

At this time, make sure that the endoprosthesis trial is appropriately fit (Fig. 3). There should be no play in any direction. If there is any question, use the next larger sized trial. Bipolar Shells come in 1mm increments.



Fig. 2

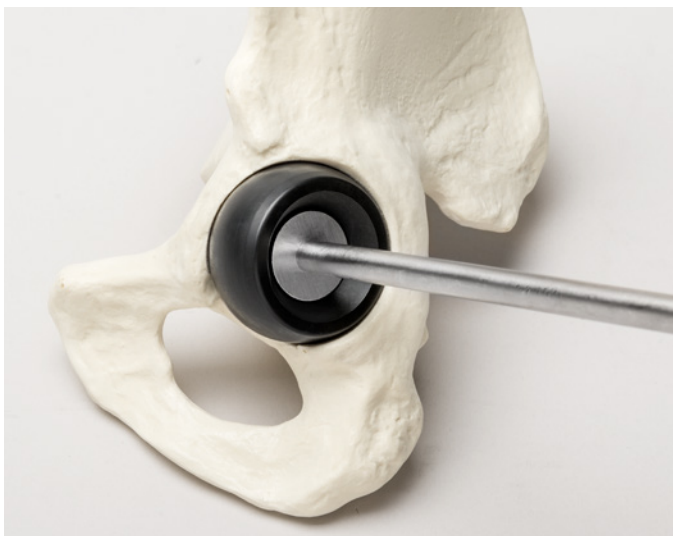


Fig. 3

## Trial Reduction

Place the appropriate trial head into the endoprosthesis trial, then connect it to the trial stem and perform a trial reduction (Figs. 4 & 5). The initial trial head is typically the neutral head, which allows the neck length to be either lengthened or shortened.



Fig. 4



Fig. 5

**N** Note: If using a pre-assembled Bipolar Shell and Insert (4404-22-038\_044 or 4404-26-042\_070) advance to the Assembly of the Bipolar Construct section on page 6.

## Assembly of the Bipolar Shell and Insert

Set the Bipolar Assembly Adapter of the appropriate size on the post of the Bipolar II Assembly Instrument (Fig. 6).

Check the sizes of the Bipolar Shell and Insert, and preliminarily assemble them by hand.

Put the partially assembled Bipolar Shell and Insert on the Assembly Adapter. Turn the knob to press the Insert into the Bipolar Shell (Figs 7 & 8).



Fig. 6



Fig. 7



Fig. 8

When correctly assembled the edge of the Insert is aligned with the edge of the Bipolar Shell (**Fig. 9**).



 Fig. 9

## Assembly of the Bipolar Construct

Remove the Bipolar Assembly Adapter from the post of the Bipolar II Assembly Instrument. Place the femoral head on the instrument post (**Fig. 10**).



Fig. 10

Hold the assembled Bipolar Shell and Insert over the femoral head and turn the knob to position the instrument cup over the assembled Bipolar Shell and Insert (**Fig. 11**).

Continue turning the knob to engage the Insert with the femoral head. An audible expulsion of air will indicate connection.



Fig. 11

Make sure that the femoral head is fully seated in the Insert (Fig. 12). If the femoral head does not rotate around the entire circumference of the Insert, repeat the assembly.



 Fig. 12



## Assembly of Bipolar Construct and Femoral Stem

Clean and dry the femoral head and neck tapers. Assemble the Bipolar Construct on the femoral neck (**Fig. 13**) and impact it with the femoral head impactor and mallet. Test the security of the Bipolar Construct fixation by trying to remove it by hand.

## Bipolar Construct Removal

Disassociation of the Bipolar Construct from the femoral stem can be accomplished by striking the inferior surface of the femoral head with a punch and mallet.

## Femoral Head Removal

The disassembly tools are designed for 6° and 12/14 tapers. Make sure that the disassembly tool is for the desired taper.

Interlock the Bipolar Construct with the taper of the disassembly tool, by striking it with the head impactor and mallet. Test the taper connection by trying to remove the Bipolar Construct by hand. Set the disassembly tool on a flat surface with the taper facing up (**Fig. 14**).



 Fig. 13



 Fig. 14



Remove the femoral head from the Bipolar Construct by turning the threaded sleeve of the disassembly tool counterclockwise to contact the lower surface of the Bipolar Construct and the sleeve of the disassembly tool (Fig. 15).

Continue turning the threaded sleeve counterclockwise until the femoral head is completely removed from the assembled Bipolar Shell and Insert. Do not turn the disassembly tool upside down, as the assembled Bipolar Shell and Insert might fall off. Remove the assembled Bipolar Shell and Insert from the femoral head by hand.

Remove the femoral head from the disassembly tool by turning the threaded sleeve counterclockwise until the femoral head is out of the tapered portion of the disassembly tool (Fig. 16).



Fig. 15



Fig. 16

## Ordering Information

### Preassembled Bipolar Shells and Inserts\*

Prod. No.	Description
4404-22-038	Bipolar CoCr, 22mm ID/38mm OD*
4404-22-039	Bipolar CoCr, 22mm ID/39mm OD*
4404-22-040	Bipolar CoCr, 22mm ID/40mm OD*
4404-22-041	Bipolar CoCr, 22mm ID/41mm OD*
4404-22-042	Bipolar CoCr, 22mm ID/42mm OD*
4404-22-043	Bipolar CoCr, 22mm ID/43mm OD*
4404-22-044	Bipolar CoCr, 22mm ID/44mm OD*
4404-26-042	Bipolar CoCr, 26mm ID/42mm OD*
4404-26-043	Bipolar CoCr, 26mm ID/43mm OD*
4404-26-044	Bipolar CoCr, 26mm ID/44mm OD*
4404-26-045	Bipolar CoCr, 26mm ID/45mm OD*
4404-26-046	Bipolar CoCr, 26mm ID/46mm OD*
4404-26-047	Bipolar CoCr, 26mm ID/47mm OD*
4404-26-048	Bipolar CoCr, 26mm ID/48mm OD*
4404-26-049	Bipolar CoCr, 26mm ID/49mm OD*
4404-26-050	Bipolar CoCr, 26mm ID/50mm OD*
4404-26-051	Bipolar CoCr, 26mm ID/51mm OD*
4404-26-052	Bipolar CoCr, 26mm ID/52mm OD*
4404-26-053	Bipolar CoCr, 26mm ID/53mm OD*
4404-26-054	Bipolar CoCr, 26mm ID/54mm OD*
4404-26-055	Bipolar CoCr, 26mm ID/55mm OD*
4404-26-056	Bipolar CoCr, 26mm ID/56mm OD*
4404-26-057	Bipolar CoCr, 26mm ID/57mm OD*
4404-26-058	Bipolar CoCr, 26mm ID/58mm OD*
4404-26-059	Bipolar CoCr, 26mm ID/59mm OD*
4404-26-060	Bipolar CoCr, 26mm ID/60mm OD*
4404-26-064	Bipolar CoCr, 26mm ID/64mm OD*
4404-26-068	Bipolar CoCr, 26mm ID/68mm OD*
4404-26-070	Bipolar CoCr, 26mm ID/70mm OD*

\*Assembled Bipolar CoCr Shell and PE Insert

### Endoprosthesis Trials

Prod. No.	Description
9401-22-038	Bipolar Articulating Trial 22mm ID/38mm OD
9401-22-039	Bipolar Articulating Trial 22mm ID/39mm OD
9401-22-040	Bipolar Articulating Trial 22mm ID/40mm OD
9401-22-041	Bipolar Articulating Trial 22mm ID/41mm OD
9401-22-042	Bipolar Articulating Trial 22mm ID/42mm OD
9401-22-043	Bipolar Articulating Trial 22mm ID/43mm OD
9401-22-044	Bipolar Articulating Trial 22mm ID/44mm OD
9401-00-042	Bipolar Articulating Trial 26mm ID/42mm OD
9401-00-043	Bipolar Articulating Trial 26mm ID/43mm OD
9401-00-044	Bipolar Articulating Trial 26mm ID/44mm OD
9401-00-045	Bipolar Articulating Trial 26mm ID/45mm OD
9401-00-046	Bipolar Articulating Trial 26mm ID/46mm OD
9401-00-047	Bipolar Articulating Trial 26mm ID/47mm OD
9401-00-048	Bipolar Articulating Trial 26mm ID/48mm OD
9401-00-049	Bipolar Articulating Trial 26mm ID/49mm OD
9401-00-050	Bipolar Articulating Trial 26mm ID/50mm OD
9401-00-051	Bipolar Articulating Trial 26mm ID/51mm OD
9401-00-052	Bipolar Articulating Trial 26mm ID/52mm OD
9401-00-053	Bipolar Articulating Trial 26mm ID/53mm OD
9401-00-054	Bipolar Articulating Trial 26mm ID/54mm OD
9401-00-055	Bipolar Articulating Trial 26mm ID/55mm OD
9401-00-056	Bipolar Articulating Trial 26mm ID/56mm OD
9401-00-057	Bipolar Articulating Trial 26mm ID/57mm OD
9401-00-058	Bipolar Articulating Trial 26mm ID/58mm OD
9401-00-059	Bipolar Articulating Trial 26mm ID/59mm OD
9401-00-060	Bipolar Articulating Trial 26mm ID/60mm OD
9401-00-064	Bipolar Articulating Trial 26mm ID/64mm OD
9401-00-068	Bipolar Articulating Trial 26mm ID/68mm OD
9401-00-070	Bipolar Articulating Trial 26mm ID/70mm OD

### Instruments

Prod. No.	Description
9401-00-152	Bipolar Assembly Instrument
9401-00-103	Bipolar Disassembly Tool

## Ordering Information

### Bipolar Shells\*

Prod. No.	Description
4405-00-038	Bipolar CoCr Shell 38 mm OD*
4405-00-039	Bipolar CoCr Shell 39 mm OD*
4405-00-040	Bipolar CoCr Shell 40 mm OD*
4405-00-041	Bipolar CoCr Shell 41 mm OD*
4405-00-042	Bipolar CoCr Shell 42 mm OD*
4405-00-043	Bipolar CoCr Shell 43 mm OD*
4405-00-044	Bipolar CoCr Shell 44 mm OD*
4405-00-045	Bipolar CoCr Shell 45 mm OD*
4405-00-046	Bipolar CoCr Shell 46 mm OD*
4405-00-047	Bipolar CoCr Shell 47 mm OD*
4405-00-048	Bipolar CoCr Shell 48 mm OD*
4405-00-049	Bipolar CoCr Shell 49 mm OD*
4405-00-050	Bipolar CoCr Shell 50 mm OD*
4405-00-051	Bipolar CoCr Shell 51 mm OD*
4405-00-052	Bipolar CoCr Shell 52 mm OD*
4405-00-053	Bipolar CoCr Shell 53 mm OD*
4405-00-054	Bipolar CoCr Shell 54 mm OD*
4405-00-055	Bipolar CoCr Shell 55 mm OD*
4405-00-056	Bipolar CoCr Shell 56 mm OD*
4405-00-057	Bipolar CoCr Shell 57 mm OD*
4405-00-058	Bipolar CoCr Shell 58 mm OD*
4405-00-059	Bipolar CoCr Shell 59 mm OD*
4405-00-060	Bipolar CoCr Shell 60 mm OD*
4405-00-064	Bipolar CoCr Shell 64 mm OD*
4405-00-068	Bipolar CoCr Shell 68 mm OD*
4405-00-070	Bipolar CoCr Shell 70 mm OD*

\*Not available in the US

### Bipolar Inserts\*

Prod. No.	Description
4405-22-038	Bipolar Durasul Insert 38-39 x 22*
4405-22-040	Bipolar Durasul Insert 40-41 x 22*
4405-22-042	Bipolar Durasul Insert 42-43 x 22*
4405-22-044	Bipolar Durasul Insert 44 x 22*
4405-26-042	Bipolar Durasul Insert 42-43 x 26*
4405-26-044	Bipolar Durasul Insert 44-47 x 26*
4405-26-048	Bipolar Durasul Insert 48-51 x 26*
4405-26-052	Bipolar Durasul Insert 52-60 x 26*
4405-26-061	Bipolar Durasul Insert 61-72 x 26*

\*Not available in the US

### Instruments

Prod. No.	Description
9401-00-161	Bipolar Instrument Stand Assembly*
9401-00-162	Bipolar Assembly Adapter*

\*Not available in the US

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