

EcoFit®

total hip system



Surgical Technique
Hemi Arthroplasty with a
Dual Articulating Head



implantcasts



Introduction

The EcoFit® stem is designed based on the philosophy of Prof. M. E. Müller of a flat tapered wedge that has shown to provide excellent clinical results over decades of time. The tapered geometry provides proximal offloading and allows for optimal bone preservation. The EcoFit® stem is collarless, to allow for self-seating of the implant between the medial and lateral cortices of the femoral canal. The taper of the stem provides a wedge effect in the medullary canal for optimal primary rotational stability and consistent axial loading.

Cemented and Cementless

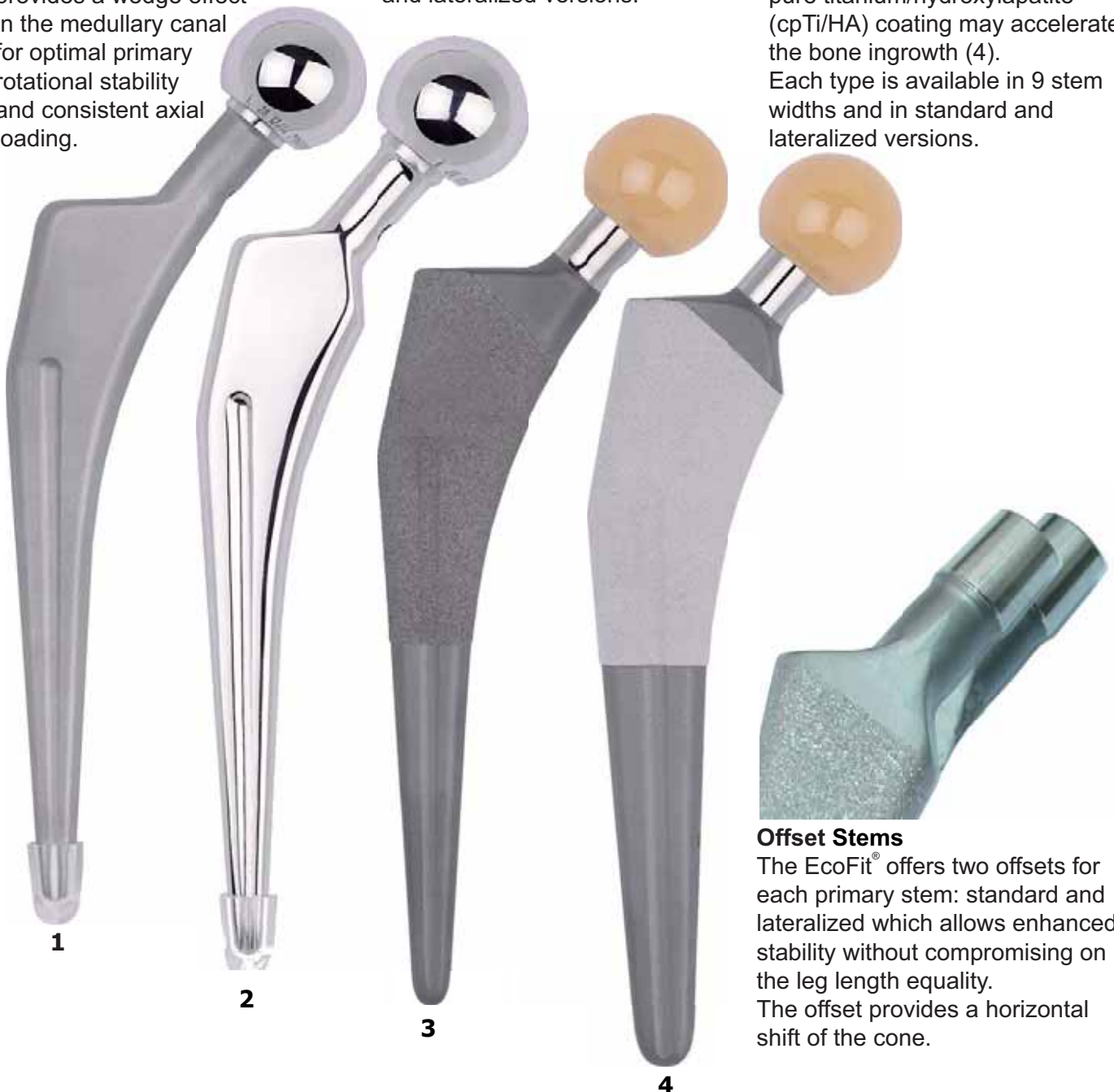
The EcoFit® is designed for cemented and cementless application each with their material demands and characteristics.

Stems for cemented application

The EcoFit® cemented stems are made from implavit® casted Cobalt Chromium alloy and are available in sand blasted (1) and high-polished versions (2). Cemented stem are available in five (5) stem widths in standard and lateralized versions.

Stems for cementless application

The EcoFit® cementless stems are made from implatan® a $TiAl_6V_4$ Titanium alloy. The pure Titanium plasma spray porous coating provides optimal fixation and has proven excellent bone ingrowth characteristics. Application of the plasma spray porous coating to the substrate of the implant at a low temperature will preserve the mechanical strength of the implant (3). An optional, additional pure titanium/hydroxylapatite (cpTi/HA) coating may accelerate the bone ingrowth (4). Each type is available in 9 stem widths and in standard and lateralized versions.



Offset Stems

The EcoFit® offers two offsets for each primary stem: standard and lateralized which allows enhanced stability without compromising on the leg length equality. The offset provides a horizontal shift of the cone.

EcoFit®

Instrumentation EcoFit®

With the EcoFit® only one instrument kit is needed for cementless and cemented application. The choice to use bone cement can be made during the procedure depending on the patients conditions.



Femoral Heads for Hemi-Arthroplasty: Bipolar Heads

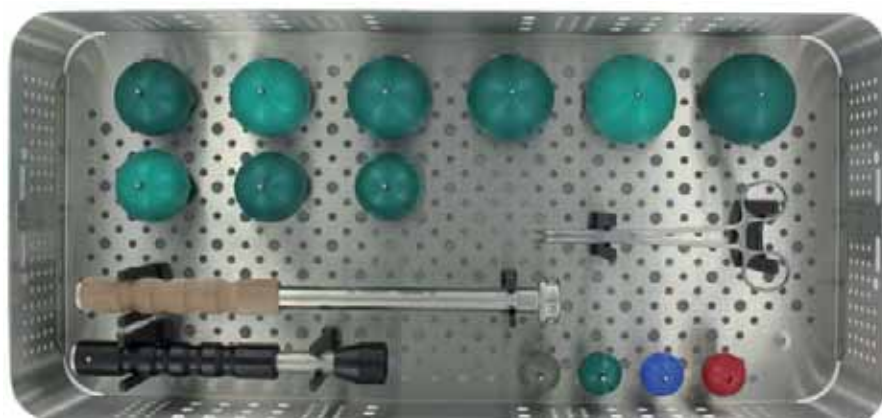
The EcoFit® stem can be used with Bipolar femoral heads:

- wide range of outer diameters (44-60mm) in 2mm increments
- can be combined with hip balls of short, standard, long and extra long necks
- Cobalt chrome outer shell to minimise wear
- the outer shell is made of highly polished Cobalt Chromium alloy
- the inner shell is made from durable polyethylene
- the inner and outer shell are assembled intraoperatively with one single instrument
- the Bipolar head will accommodate standard 28 mm femoral heads in Chromium-Cobalt alloy or in Titanium Nitride Ceramic coated Titanium heads, as well as BioloX® forte and BioloX® delta



Instrumentation Bipolar Head

Also for the bipolar heads, only one instrument kit is needed.



**X-Ray templates for pre-operative planning**

The EcoFit® template system offers precise implant sizing and preoperative evaluation of the anatomic offset. The templates have a standard magnification of 115%. Other magnifications are available on request.

Patient Positioning And Surgical Approach

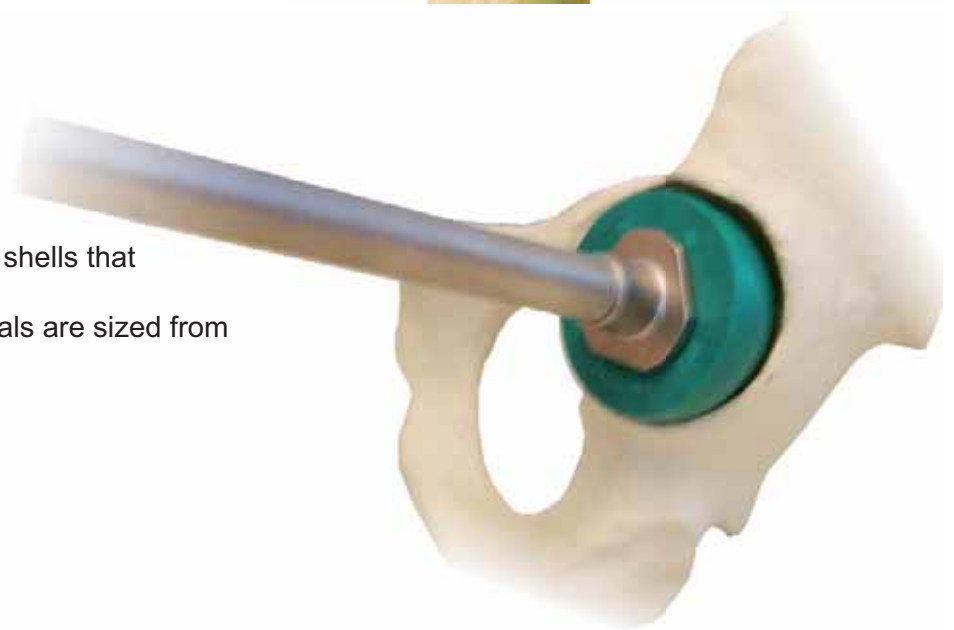
The patient is placed in a lateral decubitus position with the affected hip up. Both the lateral and posterior approach can be used. It is imperative that the pelvis remains stable, and the operated leg mobile. Once the soft tissues and capsule have been opened, the femoral head is dislocated.

**Femoral Neck Resection**

If the neck is fractured the femoral head is removed with a corkscrew. A broach can be used as a template for the resection level. A straight 45° cut or an angled cut can be used.

**Sizing of the acetabulum**

Sizing is done by using provisional shells that are snapped onto the trial handle. The Bipolar implants and provisionals are sized from 44–60mm in 2mm increments.



**Opening the Femoral Canal**

A hollow chisel is introduced into the trochanteric fossa. This initial opening is made in-line with the proximal shaft axis.

**Reaming the Femoral Canal**

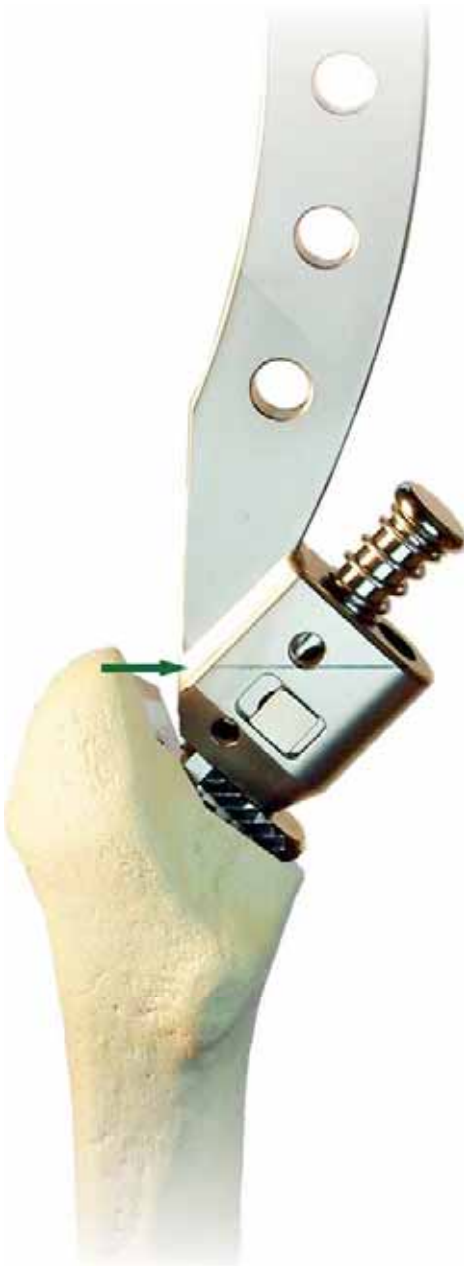
The femoral canal is entered using the straight tapered reamer. The lateral greater trochanter is reamed to allow straight access to the femoral canal. The correct reaming depth, measured from the medial resection, should correspond to the stem length.

**Shaping the Femoral Canal**

The broach handle is attached to the smallest broach. Using a mallet with short, controlled strokes broaching is commenced. The broach size is increased sequentially. Throughout broaching, lateral pressure should be applied to ensure neutral alignment of the implant. Broaching is continued till the corners of the broach contact the cortical bone of the femur.

Trial Reduction

The trial reduction may be performed with the already implanted stem, but it is recommended to do the trial reduction by leaving the femoral broach in place in order to adjust the lateral Offset, if necessary.



A Use the broach for trialing

The correct broach depth is achieved when the horizontal marking on the instrument handle lies at the level of the greater trochanter. Once optimal fit is found, the broach is left seated in the femoral canal and the broach handle is detached to allow for trial reduction.



B Standard Offset

The standard trial neck is placed on the broach.



C Use of Trial Head

The trial femoral head with the medium neck length is placed on the neck.



D Lateralized Offset

If necessary the trial neck can be replaced with a lateralized trial and / or trials heads with other neck lengths can be selected. Range of Motion is then checked again.



E Bipolar Trial Head

The trial head of the Dual Head is placed on top of the 28 mm trial head and range of motion, neck length and joint stability is checked.

Implant Selection

Cementless Application

The size of the broach last used is the size of the implant to be inserted. (size for size nomenclature)

Cemented Application

The size of the implant should be *one size smaller* than the last broach used, allowing for the cement mantle.

broach size	cemented stem size
7,50 mm	6,25 mm
8,75 mm	7,50 mm
10,00 mm	7,50 mm
11,25 mm	10,00 mm
12,50 mm	10,00 mm
13,75 mm	12,50 mm
15,00 mm	12,50 mm
17,50 mm	15,00 mm

Head impaction

The femoral head is placed on the cone of the stem and gently impacted with the femoral head impactor.



Stem Insertion

Once the trial reduction is considered stable, the broach is removed from the femoral canal. The implant of the selected size is inserted and driven home using the femoral inserter. The elliptical shape of the distal end of the inserter assists in controlling rotation of the implant and enables the implant to be inserted into the femur with the proper amount of anteversion. The inserter is tapped gently to seat the implant. A trial head component with trial Bipolar Head can be placed on the femoral implant neck cone for an additional trial reduction.

Bipolar Head Assembly

The Bipolar Head is placed on the femoral head. The locking ring is placed around the neck and either with finger force or with the locking ring forceps seated.

If desired, the assembly of the femoral head, the Bipolar Head and the locking ring can be performed on the instrument table. After which the assembled components can be placed on the cone of the femoral stem and impacted with the femoral head impactor for secure fit.





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