

MetaFix™

Cementless Total Hip Replacement  
Surgical technique



Corin

# MetaFix™

## Contents

Operative summary	4
Acetabular preparation	5
Pre-operative templating	5
Femoral neck osteotomy	6
Femoral canal preparation	6
Femoral punch	6
Tapered IM reamer	7
Broaching	7
Calcar preparation	8
Trial reduction	8
Stem implantation	9
Bone grafting	9
Femoral head impaction	9
Stem removal	9
Ordering information	10



# MetaFix™

Evolution | Versatility | Simplicity



The universal choice for cementless total hip replacement

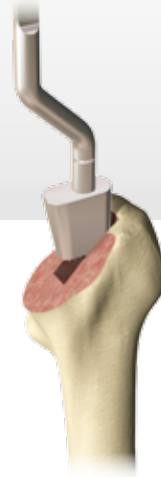
## Operative summary



a. Femoral neck osteotomy



b. Femoral canal preparation



c. Femoral punch



d. Tapered IM reamer



e. Broaching



f. Calcar preparation



g. Trial reduction



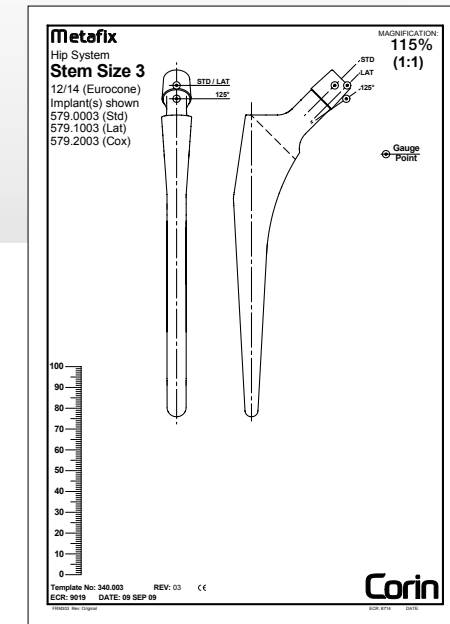
h. Stem implantation



i. Bone grafting



j. Femoral head impaction



### Acetabular preparation

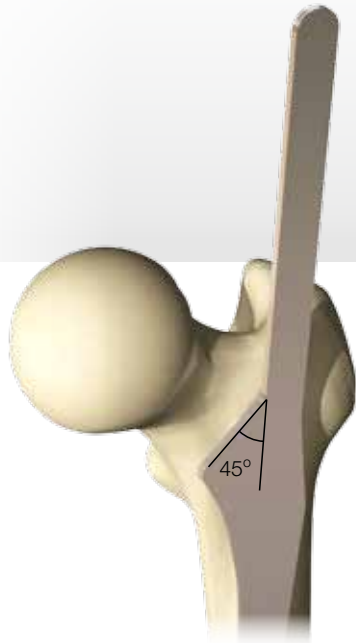
The acetabulum is prepared as instructed for the chosen acetabular cup system. The MetaFix™ stem can be used in combination with the large diameter Optimom™ head and Cormet™ cup, or the Trinity™ acetabular cup system – please refer to the respective surgical technique.

### Pre-operative templating

MetaFix X-ray templates are available in magnifications of 100%, 110%, 115% and 120% in both digital and acetate format – 115% is provided as standard. The X-ray templates assist in determining the correct size and offset required pre-operatively. Both the stem size and offset are confirmed during the preparation of the femur.

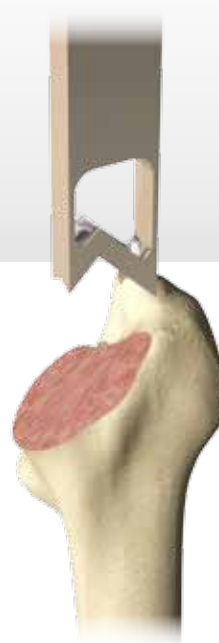
An antero-posterior (A-P) X-ray of the pelvis is used in combination with the MetaFix X-ray template to determine the size (in the medio-lateral [M-L] plane) and offset required. The level of the neck resection required to restore the correct biomechanics of the hip can also be assessed. A direct lateral X-ray is used in combination with the MetaFix X-ray template to determine the size of the stem required in the A-P plane.

MetaFix may be implanted via the anterior-lateral or posterior-lateral approach.



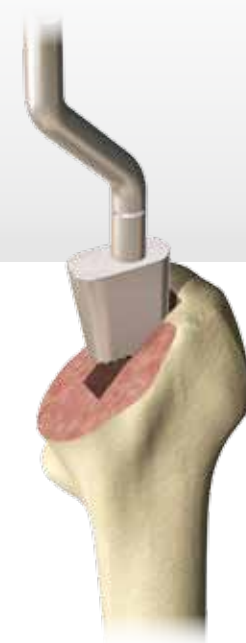
### Step 1. Femoral neck osteotomy

The neck resection guide provides a template for the osteotomy and is placed along the neutral axis of the femur. Using diathermy, mark a line at 45° against the angle of the neck resection guide. The osteotomy is then performed using this line to maintain the correct angle.



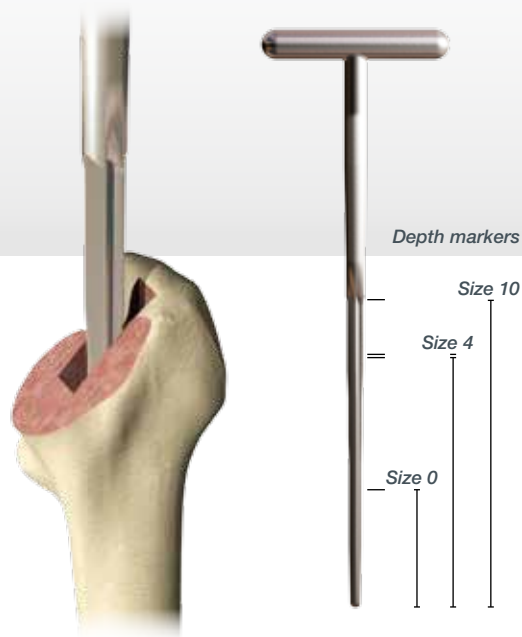
### Step 2. Femoral canal preparation

Use the box osteotome to remove the medial aspect of the greater trochanter and insert at the anterior edge of the piriformis fossa, posterior to the midline of the neck. Use the box osteotome in a neutral or anteverted position appropriate to the patient's anatomy.



### Step 3. Femoral punch

To further open the femoral neck without removing more bone, impact the cancellous bone using the femoral punch.



#### Step 4. Tapered IM reamer

Use the T-handled tapered reamer to open the natural axis of the femoral canal for broach preparation. The instrument is triple tapered to support the range of stem sizes.



#### Step 5. Broaching

Attach the handle to the smallest broach and insert into the femur to compact the bone. Make sure that axial alignment is maintained at all times, using progressively larger broaches until the desired size is achieved. To preserve the cancellous bone, a stable position must be achieved without cortical bone contact. The proximal face of the final broach must sit flush with the resection line of the femur. Use the tommy bar to check the anteversion alignment of the broach.

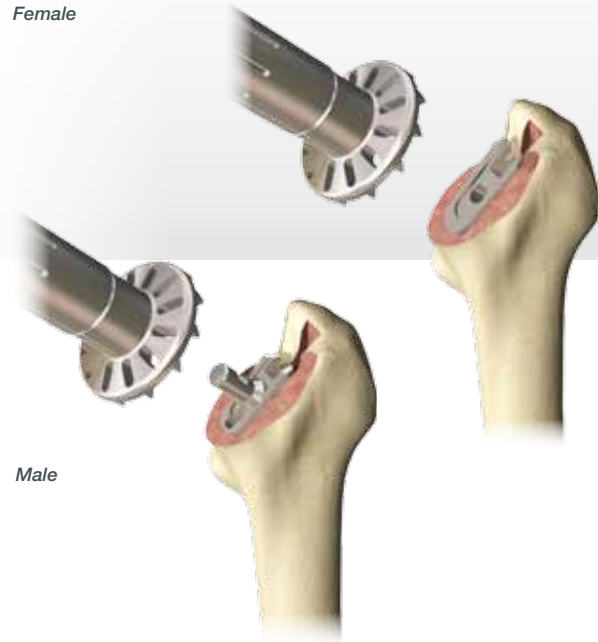


The MetaFix broaches and corresponding handles are now available in two different connection styles – male or female.

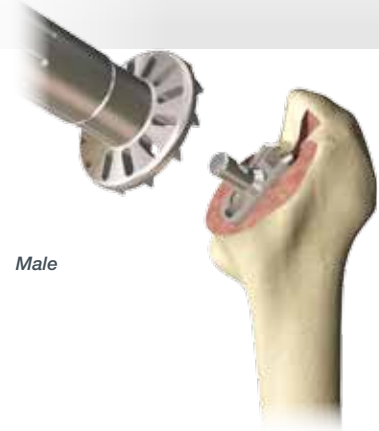
**Note: the acetabulum should be prepared prior to broaching if using the male broach.**

The size of each broach is equivalent to the corresponding implant without the hydroxyapatite (HA) coating. If a broach fails to seat fully, the previous broach can be used to re-establish the correct envelope to accept the smaller stem.

Female



Male



135° Standard



135° Lateralised



125° Coxa Vara



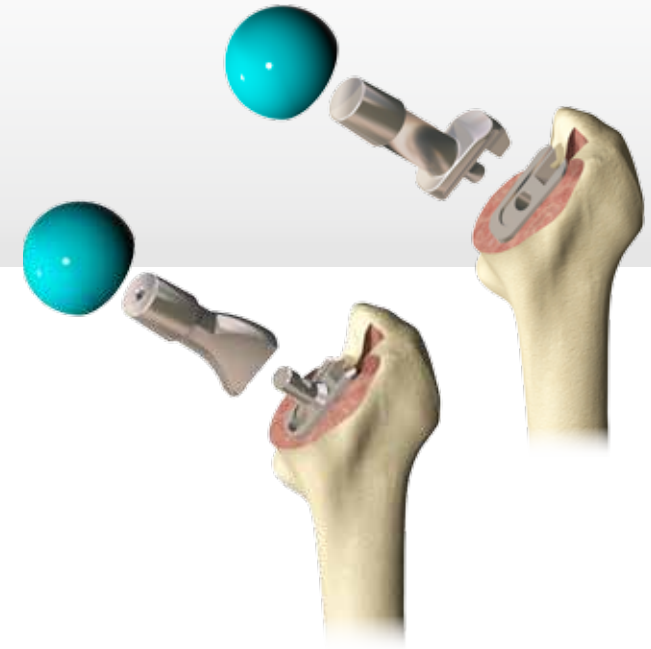
135° Standard



135° Lateralised



125° Coxa Vara



## Step 6. Calcar preparation

Locate the calcar reamer onto the spigot for male broaches or into the recess for female broaches to remove excess bone from the resected neck. The calcar reamer will remove bone above 0.5mm from the face of the broach.

Initiate power to the calcar reamer prior to engagement with the bone to prevent damage to the femur.

## Step 7. Trial reduction

Fit the appropriate head and neck trial to the broach in situ and perform a trial reduction to assess stability and leg length.

If required, leg length is reduced by lowering the neck resection level and advancing the broach into the femur.





### Step 8. Stem implantation

The final broach indicates the definitive implant size to use. The stem is either inserted and impacted using the stem introducer or inserted by hand and impacted using the stem impactor. The introducer allows for rotational stability via the recess in the stem. The impactor must align with the recess.

Impact the stem into the femoral canal so that the border of the HA coating is flush with the resection line.



### Step 9. Bone grafting

Once the stem is seated, cancellous bone from the resected femoral head can be impacted around the proximal shoulder using the femoral tamp. This seals the femoral canal and enhances the stability of the stem.

Using the trial head perform a trial reduction to check for joint stability and leg length.



### Step 10. Femoral head impaction

Once the acetabular cup is implanted, ensure the trunnion is free from debris before impacting the head onto the stem using the head impactor.

The hip can then be reduced and closure performed to the surgeon's preferred technique.


### Step 11. Stem removal

If the stem needs to be removed, screw the introducer onto the stem and hammer the baseplate to extract.


Alternatively screw the optional slap hammer onto the stem and extract.

## Ordering information


### Standard stem 135°

	579.0000	Size 0
	579.0001	Size 1
	579.0002	Size 2
	579.0003	Size 3
	579.0004	Size 4
	579.0005	Size 5
	579.0006	Size 6
	579.0007	Size 7
	579.0008	Size 8
	579.0009	Size 9
	579.0010	Size 10

### Coxa Vara stem 125°

	579.2000	Size 0
	579.2001	Size 1
	579.2002	Size 2
	579.2003	Size 3
	579.2004	Size 4
	579.2005	Size 5
	579.2006	Size 6
	579.2007	Size 7
	579.2008	Size 8
	579.2009	Size 9
	579.2010	Size 10


### BILOX delta™ ceramic modular heads (12/14)

	104.2800	Small	-3.5mm	28mm
	104.3200	Small	-4.0mm	32mm
	104.3600	Small	-4.0mm	36mm
	104.4000	Small	-4.0mm	40mm
	104.2805	Medium	0.0mm	28mm
	104.3205	Medium	0.0mm	32mm
	104.3605	Medium	0.0mm	36mm
	104.4005	Medium	0.0mm	40mm
	104.2810	Long	+3.5mm	28mm
	104.3210	Long	+4.0mm	32mm
	104.3610	Long	+4.0mm	36mm
104.4010	Long	+4.0mm	40mm	

### Lateralised stem 135°

	579.1000	Size 0
	579.1001	Size 1
	579.1002	Size 2
	579.1003	Size 3
	579.1004	Size 4
	579.1005	Size 5
	579.1006	Size 6
	579.1007	Size 7
	579.1008	Size 8
	579.1009	Size 9
	579.1010	Size 10

### CoCr modular heads (12/14)

	E321.028	Small	-3.5mm	28mm
	E321.032	Small	-4.0mm	32mm
	E321.128	Medium	0.0mm	28mm
	E321.132	Medium	0.0mm	32mm
	E321.228	Long	+3.5mm	28mm
	E321.232	Long	+4.0mm	32mm
	E321.332	Extra long	+7.0mm	32mm

104.3215	Extra long	+7.0mm	32mm
104.3615	Extra long	+8.0mm	36mm
104.4015	Extra long	+8.0mm	40mm

### X-ray templates

340.101	100%
340.111	110%
340.121	115%
340.131	120%

## Instrumentation

### Universal instruments

340.300	Neck resection template
340.320	Box osteotome
340.366	Femoral punch
340.311	Tapered IM reamer
340.360	Stem introducer
340.362	Straight stem punch
340.365	Femoral tamp
340.400	Femoral head impactor
340.308	2.5mm allen key
340.328	Tommy bar
E922.028	Mod head trial, ø28mm, short (12/14)
E922.128	Mod head trial, ø28mm, standard (12/14)
E922.228	Mod head trial, ø28mm, long (12/14)
E922.032	Mod head trial, ø32mm, short (12/14)
E922.132	Mod head trial, ø32mm, standard (12/14)
E922.232	Mod head trial, ø32mm, long (12/14)
E922.332	Mod head trial, ø32mm, extra long (12/14)
E922.036	Mod head trial, ø36mm, short (12/14)
E922.136	Mod head trial, ø36mm, standard (12/14)
E922.236	Mod head trial, ø36mm, long (12/14)
E922.336	Mod head trial, ø36mm, extra long (12/14)
E922.040	Mod head trial, ø40mm, short (12/14)
E922.140	Mod head trial, ø40mm, standard (12/14)
E922.240	Mod head trial, ø40mm, long (12/14)
E922.340	Mod head trial, ø40mm, extra long (12/14)
340.309	3.0mm allen key
340.380	Slap hammer

### Dedicated MALE (spigot) broach instruments

340.430	Size 0 femoral broach
340.431	Size 1 femoral broach
340.432	Size 2 femoral broach
340.433	Size 3 femoral broach
340.434	Size 4 femoral broach
340.435	Size 5 femoral broach
340.436	Size 6 femoral broach
340.437	Size 7 femoral broach
340.438	Size 8 femoral broach
340.439	Size 9 femoral broach
340.440	Size 10 femoral broach
A/H/Z340.416	Ø40 calcar cutter (A/O / Hudson / Zimmer)
340.470	135° Standard neck trial
340.471	135° Lateralised neck trial
340.472	125° Coxa Vara neck trial
340.450	Straight broach handle

### Dedicated FEMALE (recess) broach instruments

340.330	Size 0 femoral broach
340.331	Size 1 femoral broach
340.332	Size 2 femoral broach
340.333	Size 3 femoral broach
340.334	Size 4 femoral broach
340.335	Size 5 femoral broach
340.336	Size 6 femoral broach
340.337	Size 7 femoral broach
340.338	Size 8 femoral broach
340.339	Size 9 femoral broach
340.340	Size 10 femoral broach
A/H/Z340.316	Ø40 calcar cutter (A/O / Hudson / Zimmer)
340.370	135° Standard neck trial
340.371	135° Lateralised neck trial
340.372	125° Coxa Vara neck trial
340.350	Straight broach handle



The Corinium Centre  
Cirencester, GL7 1YJ  
t: +44 (0)1285 659 866  
f: +44 (0)1285 658 960  
e: info@coringroup.com

[www.coringroup.com](http://www.coringroup.com)

# Corin



Printed on 9lives 80 which contains 80% total recycled fibre and is produced at a mill which holds the ISO 14001 for Environmental Management Systems. The pulp is bleached using Elemental Chlorine Free processes.



©2010 Corin P No I832 Rev3 01/2010 ECR 10004  
BIOLOX *delta* is a registered trademark of CeramTec