Revival™

Modular Hip Stem

Operative technique

Corin

Disclaimers

- The product images shown are for illustration purposes only and may not be an exact representation of the product.
- For more information on ordering of instruments specific to the product in scope, please contact your Corin representative.

** Ceramic liners and ceramic-on-ceramic articulations are not approved for use in the USA.*

Revival™

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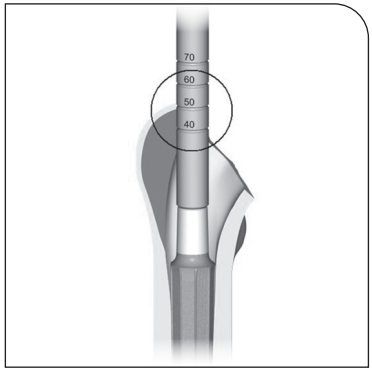
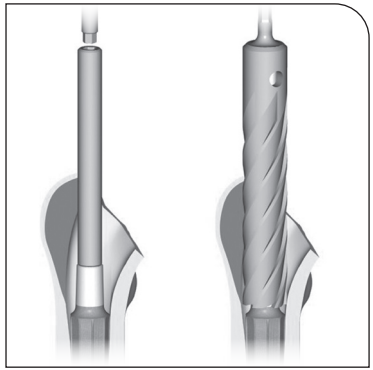


b. Distal component insertion



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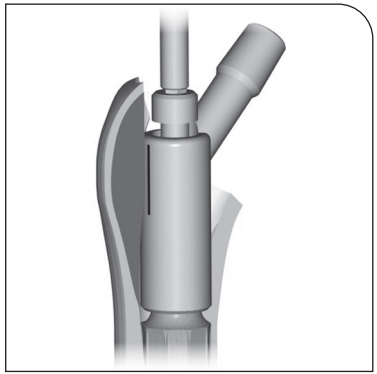

d. Trial proximal component insertion

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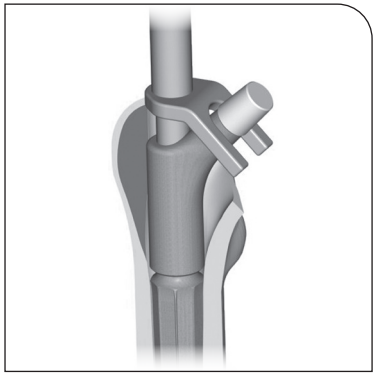
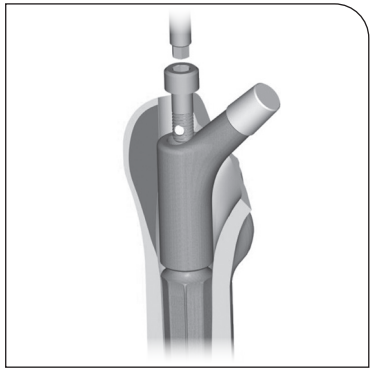


f. Proximal component insertion



g. Locking the proximal component

h. Trial reduction

The Revival™ Modular Hip Stem is a modular system designed for prosthesis replacement in cases of serious bone loss[1].

Manufactured from titanium alloy Ti6Al4V 5 ELI the Revival™ stem is designed for biocompatibility and mechanical strength.

The surface finish is obtained by abrasion with corundum to increase the contact surface which may help with prosthesis-bone fixation.

Technical features

The femoral implant consists of three elements – a proximal component, distal component and locking screw.

Locking screw

The locking screw is used to hold the 'Morse' taper cone in place and has a retention feature to prevent loosening.

Proximal component

The modular proximal component is designed to restore the physiological anatomy using four lengths (40mm, 50mm, 60mm and 70mm) and two CCD angles (125° and 135°).

Distal component

The distal component is conical in shape and has longitudinal fins. The modular design has four lengths (100mm, 160mm, 200mm and 240mm) and ten diameters (14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 20mm, 21mm, 22mm and 24mm). The 200mm and 240mm distal components have a 3° anatomical pro-curvature to avoid point effects on the cortical bone. The two components are assembled using a 'Morse' taper 2° 51' 51'' so that the proximal component can be dialled into position to achieve the anteversion required. The system delivers 360° rotation.

Operative technique

Preoperative planning

It is advisable to conduct preoperative planning to determine the diameter and length of the distal component and the size of the proximal component. Planning should include antero-posterior X-rays and the templates provided with the Revival™ system. The templates are in different enlargements and are placed over the X-ray to determine the size of the distal component, so that it is well anchored to good quality cortical bone and extends at least 10mm below the tip of the existing implant. The exact position of the longitudinal osteotomy, if needed, also needs to be determined.

Primary indication

Available only for 100mm Revival components

a) Femoral neck osteotomy

The femoral head resection is performed according to the anatomical landmarks referenced during the preoperative planning.

b) Femoral canal preparation

A box osteotome is used to open the medullary cavity.

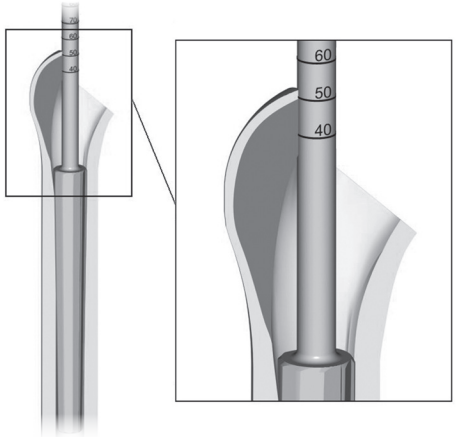
Existing stem removal

a) Removal of a cemented stem

Once the stem has been removed from the cement mantle by utilising universal extraction instruments or manufacturer-specific instruments, ensure all cement is removed prior to preparation of the femur for the Revival™ femoral components. An osteotomy of the femur may be necessary to facilitate removal of the cement.

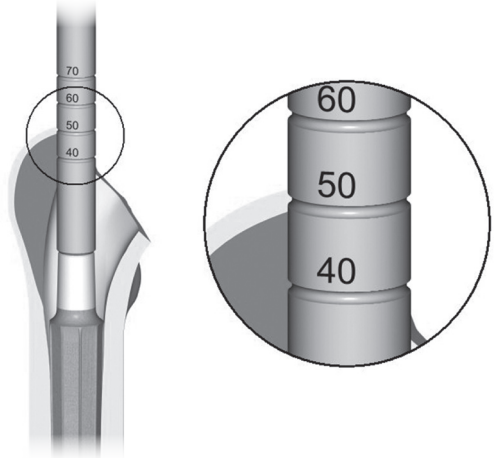
b) Removal of a cementless stem

Biologic fixation that may exist between the existing implant and bone can make the removal of a cementless stem difficult. When removing a proximally porous coated stem, it may be necessary to perform an osteotomy of the femur just below the level of the porous coating to assist in stem removal. When removing an extensively coated stem, an extended trochanteric osteotomy may be necessary. Sectioning the stem and utilising trephine reamers can assist in the removal of the porous coated distal segment of a cementless stem.



1. Canal preparation

After an initial opening of the diaphyseal canal, proceed to reaming with the conical reamers – there is a dedicated conical reamer for each prosthetic size. Start reaming with a conical reamer one or two sizes smaller than the size identified in the preoperative planning, and incrementally increase the reamer size. The reamers must be inserted in the femoral canal until the depth gauge is in line with the apex of the greater trochanter. It is advisable to ream up to the level of the indicator of the proximal body so that the other three sizes will be available during insertion of the proximal component (typically aim to have at least one size above and one size below). Work with the successive reamers until meeting firm resistance and the typical sound of cortical engagement, normally corresponding to the size identified in the preoperative plan. The reamers can be attached to a powered driver via the Jacobs chuck or by hand via the modular handle.

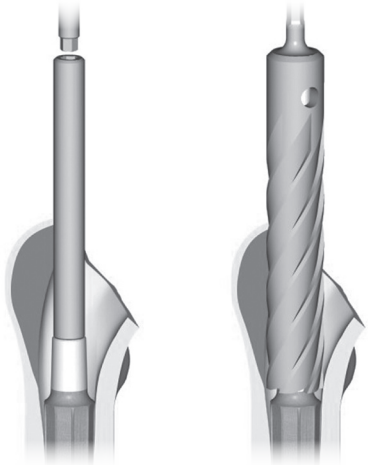


2. Distal component insertion

Fix the distal component to the impactor and proceed to insert it into the previously prepared canal. The long distal components (200mm and 240mm) must be orientated in the direction of the femoral curvature as they have a 3° pro-curvature.

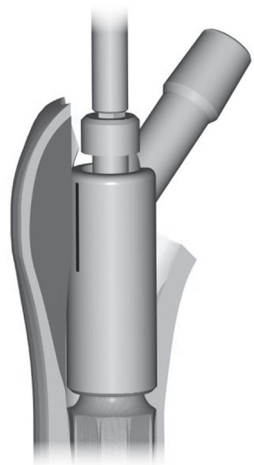
Now proceed with the insertion, advancing gradually and checking the distance until the maximum depth is reached, so as to obtain torsional stability and avoid any further insertion.

The marking on the impactor should coincide with the right offset length, as per the preoperative planning. Any differences in calculated length can be recovered with the different sizes of proximal component and the different head offsets.



3. Bone preparation for the proximal component

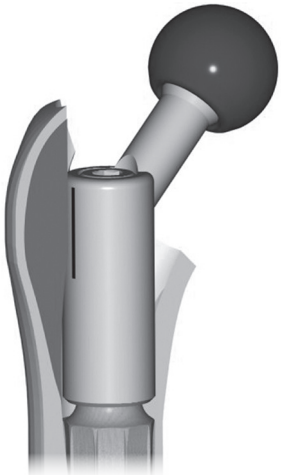
Remove the impactor from the distal component and screw on the guide shaft for the tubular reamer. Prepare the inside of the proximal femur with the tubular reamer prior to housing the proximal component.



4. Trial proximal component insertion

Insert the trial proximal component and secure with the proximal component trial screw.

⚠ **Note: There is a dedicated screw for each size of proximal body. The trialling is performed with the definitive distal component as there are no distal component trials. It is advisable not to tighten this screw excessively.**



5. Trial reduction

Attach the appropriate head trial to the proximal component *in situ* and perform a trial reduction, assessing the stability of the hip, the length of the limb, the range of movement and any impingement on the acetabular cup. Also check the desired anteversion, marking the bone at the reference line marked in the side of the trial proximal component.

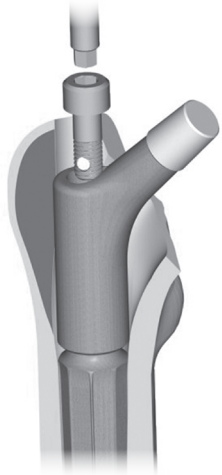
If the leg has been lengthened so that it cannot be managed easily with the available head options, consideration should be given to the other proximal component options.

⚠ **Note: The trial head should be removed from the trial neck by twisting through 90°.**

6. Proximal component insertion

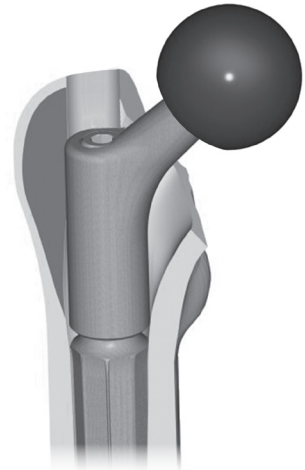
Remove the trial head and the trial proximal component. The distal component taper should be thoroughly rinsed and carefully dried to ensure that it is free from debris.

Take the definitive proximal component of the same measurement as the trial and using the impactor, insert it into the 'Morse' taper of the previously cleaned distal component. Be sure to observe the correct anteversion by aligning the reference line on the proximal component with the line previously made on the bone. Definitively impact the proximal component.



7. Locking the proximal component

Insert the locking screw of the right size for the proximal component used and tighten with the hexagonal screw driver. This locking screw provides extra anchoring for the distal and proximal components as well as to the 'Morse' taper.



8. Trial reduction

Attach the appropriate head trial to the definitive proximal component *in situ* and perform a trial reduction, assessing the stability of the hip, the length of the limb, the range of movement and any impingement on the acetabular cup. If the leg has been lengthened so that it cannot be managed easily with the available head options, consideration should be given to the other proximal component options.

⚠ **Note: The trial head should be removed from the trial neck by twisting through 90°. The proximal component can be removed with the dedicated extractor.**

9. Head impaction

Following the trial reduction, but before placing the definitive head on the stem, the stem taper should be thoroughly rinsed and carefully dried to ensure that it is free from debris. The head is then placed on the stem taper by twisting lightly and by applying axial manual pressure until it is seated firmly. The plastic head impactor is placed on the pole of the head and impacted with a light tap using a hammer in an axial direction.

Never use a metal hammer directly on the surface of the definitive head, only the plastic head impactor provided.

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

Description

The Revival™ Modular Hip Stem is a modular stem manufactured from titanium alloy (Ti6Al4V 5 ELI) with a proximal component, a distal component and a locking screw. The modular proximal component is available in four lengths (40mm, 50mm, 60mm, and 70mm) and two CCD angles (125˚ and 135˚).The distal component is conical in shape and has longitudinal fins.

The modular design has four lengths (100mm, 160mm, 200mm, and 240mm) and ten diameters (14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 20mm, 21mm, 22mm and 24mm). The proximal and distal components are assembled using a 'Morse' taper 2° 51' 51'' so that the proximal component can be dialed into position to achieve the anteversion required. The locking screw is used to hold the 'Morse' taper cone in place.

The Revival™ stem has a surface finish obtained by abrasion with corundum to increase the contact surface for cementless fixation. The device is intended to be used with Corin (12/14 taper) ceramic and CoCr modular heads.

Ordering information

Distal component

Product code	Size
12-0373914	L. 100mm Dia. 14mm
12-0373915	L. 100mm Dia. 15mm
12-0373916	L. 100mm Dia. 16mm
12-0373917	L. 100mm Dia. 17mm
12-0373918	L. 100mm Dia. 18mm
12-0373919	L. 100mm Dia. 19mm
12-0373920	L. 100mm Dia. 20mm
12-0373921	L. 100mm Dia. 21mm
12-0373922	L. 100mm Dia. 22mm
12-0373924	L. 100mm Dia. 24mm*
12-0374014	L. 160mm Dia. 14mm
12-0374015	L. 160mm Dia. 15mm
12-0374016	L. 160mm Dia. 16mm
12-0374017	L. 160mm Dia. 17mm
12-0374018	L. 160mm Dia. 18mm
12-0374019	L. 160mm Dia. 19mm
12-0374020	L. 160mm Dia. 20mm
12-0374021	L. 160mm Dia. 21mm
12-0374022	L. 160mm Dia. 22mm
12-0374024	L. 160mm Dia. 24mm*
12-0375014	L. 200mm Dia. 14mm
12-0375015	L. 200mm Dia. 15mm
12-0375016	L. 200mm Dia. 16mm
12-0375017	L. 200mm Dia. 17mm
12-0375018	L. 200mm Dia. 18mm
12-0375019	L. 200mm Dia. 19mm
12-0375020	L. 200mm Dia. 20mm
12-0375021	L. 200mm Dia. 21mm
12-0375022	L. 200mm Dia. 22mm
12-0375024	L. 200mm Dia. 24mm*
12-0376014	L. 240mm Dia. 14mm
12-0376015	L. 240mm Dia. 15mm
12-0376016	L. 240mm Dia. 16mm
12-0376017	L. 240mm Dia. 17mm
12-0376018	L. 240mm Dia. 18mm
12-0376019	L. 240mm Dia. 19mm
12-0376020	L. 240mm Dia. 20mm
12-0376021	L. 240mm Dia. 21mm
12-0376022	L. 240mm Dia. 22mm
12-0376024	L. 240mm Dia. 24mm*

** only on request*

Proximal component

Product code	Size
12-0362540	125° L. 40mm
12-0362550	125° L. 50mm
12-0362560	125° L. 60mm
12-0362570	125° L. 70mm
12-0363540	135° L. 40mm
12-0363550	135° L. 50mm
12-0363560	135° L. 60mm
12-0363570	135° L. 70mm

Proximal filling component

Product code	Size
12-0372540	125° L. 40mm
12-0372550	125° L. 50mm
12-0372560	125° L. 60mm
12-0372570	125° L. 70mm
12-0373540	135° L. 40mm
12-0373550	135° L. 50mm
12-0373560	135° L. 60mm
12-0373570	135° L. 70mm

Locking screw

Product code	Size
12-0376140	L. 40mm
12-0376150	L. 50mm
12-0376160	L. 60mm
12-0376170	L. 70mm

CoCr modular heads (12/14)

from the Trinity™ acetabular system

Product code	Size		
E321.428	Extra short	-5.0mm	28mm
E321.432	Extra short	-6.0mm	32mm
E321.436	Extra short	-8.0mm	36mm
E321.440	Extra short	-8.0mm	40mm
E321.028	Short	-3.5mm	28mm
E321.032	Short	-4.0mm	32mm
E321.036	Short	-4.0mm	36mm
E321.040	Short	-4.0mm	40mm
E321.128	Medium	0.0mm	28mm
E321.132	Medium	0.0mm	32mm
E321.136	Medium	0.0mm	36mm
E321.140	Medium	0.0mm	40mm
E321.228	Long	+3.5mm	28mm
E321.232	Long	+4.0mm	32mm
E321.236	Long	+4.0mm	36mm
E321.240	Long	+4.0mm	40mm
E321.328	Extra long	+7.0mm	28mm
E321.332	Extra long	+7.0mm	32mm
E321.336	Extra long	+8.0mm	36mm
E321.340	Extra long	+8.0mm	40mm

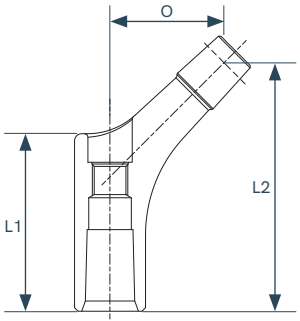
BIOLOX® delta ceramic modular heads (12/14)

from the Trinity™ acetabular system

Product code	Size		
104.2800	Short	-3.5mm	28mm
104.3200	Short	-4.0mm	32mm
104.3600	Short	-4.0mm	36mm
104.4000	Short	-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
104.3215	Extra long	+7.0mm	32mm
104.3615	Extra long	+8.0mm	36mm
104.4015	Extra long	+8.0mm	40mm

Sizing guide

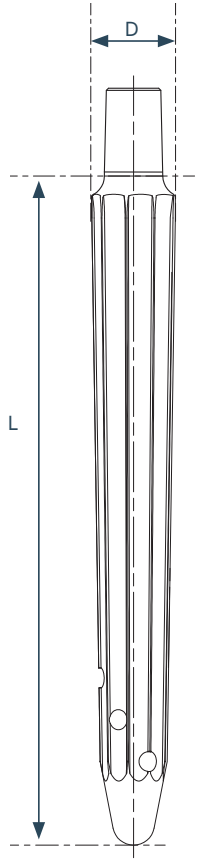
Proximal component



CCD (degrees)	Length 1	Length 2	Offset
125°	40mm	54mm	37.1mm
	50mm	64mm	37.1mm
	60mm	74mm	37.1mm
	70mm	84mm	37.1mm
135°	40mm	60mm	32mm
	50mm	70mm	32mm
	60mm	80mm	32mm
	70mm	90mm	32mm

Distal stem length (mm)	Stem diameter (mm)									
100 (straight)	14	15	16	17	18	19	20	21	22	24
160 (straight)	14	15	16	17	18	19	20	21	22	24
200 (3° anatomical pro-curvature)	14	15	16	17	18	19	20	21	22	24
240 (3° anatomical pro-curvature)	14	15	16	17	18	19	20	21	22	24

Distal component



Indications

The Revival™ modular hip stem is indicated in revision surgery of femoral components, following failure of primary cemented or un-cemented prosthesis. Moreover the Revival™ modular hip stem with distal component of 100mm length is also indicated in total hip arthroplasty.

- The indications for the Revival™ modular hip stem include:
- Non-inflammatory degenerative joint disease including primary and secondary osteoarthritis and hip dysplasia
- Aseptic necrosis of the femoral head
- Rheumatoid arthritis
- Correction of functional deformity
- Treatment of non-union and femoral neck fractures
- Treatment of traumatic dislocations of the hip
- Failures of osteotomy
- Treatment of arthrodesis
- The Revival™ modular hip stem is indicated for cementless, single use only.

Contraindications

- Osteoporosis
- Patient suffering from neurological disorders, unable to follow directions
- Systemic disorders and / or metabolic problems that lead to a progressive deterioration of bone support
- Neurological or neuromuscular disorders that could create an unacceptable risk to the prostheses instability or lead to a failure of prostheses fixation
- Osteomalacia
- Active infection or suspected latent infection in the hip joint;
- Distant foci of infection in the body that could spread to the implant site
- Persistent acute or chronic osteomyelitis
- Vascular insufficiency, muscular atrophy, neuromuscular diseases
- Incomplete or insufficient presence of soft tissue around the hip joint
- Obesity
- Inadequate bone stock for the prostheses support or fixation
- Skeletal Immaturity
- Local or disseminated neoplastic diseases
- Uncorrectable deformity

Reference

1. "Società italiana riprotesizzazione-GIR" grades II, III and IV and Paprosky grades II and III

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