Cementless Femoral Stem
Evaluation surgical technique

Corin
Connected Orthopaedic Insight
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TriFit™
Conformity | Stability | Versatility
Operative summary

a. Femoral neck osteotomy
b. Femoral canal preparation
c. Femoral reaming (Optional)
d. Sequential rasping
e. Calcar preparation
f. Trial reduction
g. Stem implantation
h. Femoral head impaction
1. Pre-operative planning
Pre-operative planning will determine whether the patient’s isthmus is too narrow to achieve the desirable fixation – as is the case with extreme Dorr type A femora. In this situation the femoral diaphysis may need to be reamed to avoid prematurely engaging the distal stem prior to achieving appropriate fill of the proximal metaphysis.

*The removed cancellous bone is retained as this may be required for bone grafting later in the procedure.

2. Femoral neck osteotomy
Pre-operative templating can help define the position of the osteotomy. Using diathermy, a line is marked on the femoral neck at 50° to the long axis of the femur. Alternatively, one of the smaller rasps can be overlaid on the femur to orientate the diathermy mark. The osteotomy* is performed using the diathermy line to help maintain the correct resection angle.
3. Femoral canal preparation
A range of handles are provided to suit the chosen surgical approach or philosophy. The modular box osteotome* is attached to the chosen handle and used to enter the femoral canal and to establish version. Consideration may be given to lateralising the opening into the femur during this step so as to avoid incorrect varus alignment and undersizing issues.

*The removed cancellous bone is retained as this may be required for bone grafting later in the procedure.

4. Femoral Conical Reaming (Optional)
There are four reamers representing the 11 TriFit CF™ stems. Sequentially ream the femoral canal starting with the smallest TriFit CF™ reamer. Each reamer has three depth calibration grooves on the reamer representing the size of the CF stem (reamer for size 10 and 11 only has two depth calibration grooves). The first calibration groove represents the smallest size stem for that reamer when aligned with the top of the greater trochanter (0 head center). Stop reaming when the groove on the reamer associated with the templated stem size is at the top of the greater trochanter or endosteal bone resistance is encountered.

Note: it is important stay lateral with the femoral reamers to ensure that the canal is being opened in neutral alignment with the femoral axis.
5. Sequential rasping
The chosen handle should be attached to the first rasp and inserted/impacted into the femur, making sure that axial and rotational alignment is maintained at all times. Progressively larger rasps are then used to create an appropriately-sized cavity for receiving the definitive implant. The growth between adjacent rasp sizes is uniform to make sequential rasping more predictable and reproducible. Rasping should be continued while bearing in mind the required size determined during templating, until the tone of impaction changes and the desired stability and fit within the femur is achieved.
6. Calcar preparation

Ø40mm calcar reamers are available. Locate the calcar reamer onto the spigot of the final rasp to remove excess bone from the resected neck. The calcar reamer will remove any bone that protrudes 0.2mm or more above the face of the rasp. Initiate power to the calcar reamer prior to careful engagement with the bone to prevent damage to the femur.

If the femoral neck has been resected inaccurately, calcar reaming may be useful as the reamed calcar region can be used to determine whether the stem is seated to the expected level, i.e. so that the proximal margin of the stem’s porous coating sits flush with the neck resection.

7. Trial reduction

Attach the appropriate head and neck trials to the rasp in situ and perform a trial reduction to assess stability, offset and leg length. If the leg has been lengthened so that it cannot be managed easily with the available head options, consideration should be given to carefully countersinking the appropriate rasp or modifying the neck resection and repeating steps 4 to 6. Note that the trial head should be removed from the trial neck by twisting through 90 degrees.
8. Stem implantation

The final rasp size indicates the definitive implant size. Once the final rasp is removed, the stem may be inserted by hand and impacted with the non-threaded introducer (Fig. 1) or held captive by screwing on the introducer/handle assembly by hand only (Fig. 2). The tommy bar can be used to release the stem if necessary.

Care should be taken to avoid soft tissue and/or bony impingement around the greater trochanter as this may impede stem insertion or cause it to adopt an off-axis orientation. It is therefore important to ensure that soft tissue is retracted and/or bony obstacles are removed adequately to allow the stem to seat fully and in the correct orientation.

A trial head is used to perform a trial reduction to check for joint stability and leg length.
9. Femoral head impaction

Once the acetabular cup is implanted, 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.

Stem extraction

In the unlikely event that the stem needs to be removed, the extraction rod is screwed into the threaded hole on the lateral/proximal shoulder of the stem. The slotted mallet is then used to gently strike the underside of the extraction rod handle, using the cut-out feature of the mallet to guide and control the blows.
### Ordering information

**Trifit® standard stem**

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**CoCr modular heads (12/14)**

from the Trinity™ acetabular system

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*Only available with the Trinity™ Dual Mobility system, for more information please see I1393 Trinity™ Dual Mobility surgical technique.*
Indications

The indications for the TriFit CF Hip as a total hip arthroplasty and as a hip hemiarthroplasty include:

- Non-inflammatory degenerative joint disease including osteoarthritis and avascular necrosis
- Rheumatoid arthritis
- Correction of functional deformity
- Treatment of non-union and femoral neck fractures
- Developmental Dysplasia of the Hip (DDH)
- Previously failed hip surgery

The TriFit CF Hip is indicated for cementless use only.

Contraindications

- Active infection
- Osteomyelitis
- Metabolic disorders which may impair bone formation
- Vascular insufficiency
- Muscular atrophy or neuromuscular disease
- Allergy to implant material
- Uncorrectable deformity
- Osteoporosis
- Osteomalacia
- Marked bone loss or bone resorption
- Do not use in combination with components from non Corin implant systems
Stem sizing chart

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* Lateralising reamer is available upon request