Surgical Technique
Indications for Exeter V40

The indications for use in total hip arthroplasty include:

- Non-inflammatory degenerative joint disease, including osteoarthritis and avascular necrosis.
- Rheumatoid arthritis.
- Correction of functional deformity.
- Revision procedures where other treatments or devices have failed.
- Treatment of nonunion, femoral neck and trochanteric fractures of the proximal femur with head involvement that are unmanageable using other techniques.

Contraindications for Exeter V40

1. Active infection or suspected latent infection in or about the hip joint.
2. Bone stock that is inadequate for support or fixation of the prosthesis.
3. Skeletal immature.
4. Any mental or neuromuscular disorder that would create an unacceptable risk of prosthesis instability, prosthesis fixation failure, or complications in postoperative care.

Warnings and Precautions

See implant package insert for warnings, precautions, adverse effects and other essential product information.

Before using instrumentation, verify:

- Instruments have been properly disassembled prior to cleaning and sterilisation
- Instruments have been properly assembled post sterilisation
- Instruments have maintained design integrity
- Proper size configuration is available

For Instructions for Cleaning, Sterilization, Inspection and Maintenance of Orthopaedic Medical Devices, refer to LSTPI-B.
The Exeter V40 37.5mm No.1 L.125, 44mm No.00 & 1 L.125 and 50mm No.1 L.125 stems can be used for cement-in-cement revision.

A cement reamer has been developed to allow the safe reaming of the distal cement mantle to ensure that the stem with a straight sided centraliser will fit into the existing mantle. Use of the reamer also ensures cleaning and roughening of the distal mantle prior to insertion of the new stem. The cavity should be clean and dry prior to re-cementing.

The hollow centraliser should be used with the Exeter stem because it provides a space below the stem tip, which prevents ‘end-bearing’ of the stem and ensures that the proximal, expanded taper of the stem will engage properly in the cement mantle. The stem centraliser is not retentive and when placed on the tip of the stem it may need to be held in place as the stem is transferred to the femur ready for insertion. The Centraliser should not be forced excessively onto the stem.

Early (2 minutes when using Simplex Bone Cement at 21°C) insertion of the new bone cement should be performed using a revision cement gun nozzle, followed by proximal pressurisation until stem insertion.

This operative guide should be read in conjunction with the Exeter V40 Primary operative technique.
1 Stem removal

Supero-lateral cement above the shoulder of the prosthesis must be removed using a burr or chisel prior to attempting stem removal (Fig. 1). A stout instrument, such as a Tommy bar or Bristow’s, should be placed under the neck of the prosthesis to prevent the tendency to rotate as it is being knocked out. Failure to do so risks creating high torsional stresses and a spiral fracture of the femur.
**OPERATIVE TECHNIQUE**

### 2/3/4 Distal reaming

If appropriate, a cement reamer is inserted into the cement mantle and the distal cement mantle is reamed until 145mm landmark on the drill is level with the tip of the greater trochanter (Figs 2, 3 & 4). This ensures that a L.125mm stem with a straight-sided distal centraliser in place, can be inserted. This depth may need to be adjusted if more distal insertion of the stem is required. Irrigate whilst reaming with Hartmanns solution or Saline (Figs 3 & 4).

### 5 Trial insertion

A trial stem can now be used to ensure that the correct depth of insertion and stem version can be achieved. Remove proximal cement with a burr or reamers until the desired position can be achieved. A trial reduction can now be performed to confirm stability and leg length (Fig 5). Mark the proximal femur in relation to the marks on the femoral stem to facilitate subsequent correct placement of the stem. Due to manufacturing tolerances of the trial and definitive stem, the definitive stem should be placed as a final check into the existing cement mantle before introducing the new cement.
6 Canal preparation

Roughen the proximal cement with a burr, rasp or reamers and then wash and thoroughly dry the canal. Insert a narrow catheter, attached to suction, to the tip of the cavity, followed by a dry gauze pack, and leave in place until just before cement insertion.

7/8 Retrograde cement insertion

Remove the gauze and catheter and using a narrow revision nozzle, insert cement with a cement gun. Introduce the cement early (at 2 minutes when using Simplex Bone Cement at 21°C). Use a proximal Half Moon seal and pressurise the cement continuously until cement insertion (about 5 minutes at 21°C, if using Simplex Bone Cement) (Figs 7 & 8).
9/10 Stem insertion

Use the straight sided centraliser on the tip of the stem and insert the stem. The insertion should be brisk until the stem reaches a position approximately 1cm above its final position. Insertion thereafter should be slower, gradually bringing the stem to its final position. The stem should not be left with all three circular markings proud of the cement mantle because this would risk leaving it with inadequate proximal support. Maintain proximal pressure, first with a thumb and then with a horse collar seal until the cement has polymerised (Figs 9 & 10). Ensure a small amount of cement is placed over the lateral shoulder of the stem, to prevent it from being pulled out of the mantle should the patient suffer a later dislocation.

Reduction

A further trial reduction can now be performed prior to selecting the appropriate femoral head and engaging it on the morse taper.

Post-operative management

The post operative management and programme of rehabilitation will depend on the acetabular side of the revision procedure. With regard to the femoral stem, full weight bearing can commence as soon as patient comfort will allow.

Considerations:

1. The technique is only appropriate for use in infected cases under strict selection criteria.1

2. It is only applicable in the presence of an intact bone cement interface. Proximal bone-cement loosening should not extend below the upper border of the lesser trochanter.

3. The new cement should not be inserted until the existing cement is clean and dry.

Implant Listing

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<th>Code</th>
<th>Description</th>
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<tr>
<td>0580-1-044</td>
<td>Exeter V40 44mm No. 00 L.125</td>
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<tr>
<td>0580-3-371</td>
<td>Exeter V40 37.5mm No. 1 L.125</td>
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<td>0580-3-441</td>
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<td>0580-3-501</td>
<td>Exeter V40 50mm No. 1 L.125</td>
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<td>0581-1-044</td>
<td>Exeter V40 44mm No. 00 L.125 Stem Trial</td>
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<td>0581-3-371</td>
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<td>0570-9-000</td>
<td>Trial Locating Pin</td>
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<td>Cement Reamer (Hudson connection)</td>
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References