Exeter® V40® Stem
cement-in-cement

Surgical technique
Exeter V40 Stem cement-in-cement surgical technique

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This publication sets forth detailed recommended procedures for using Stryker Orthopaedics devices and instruments. It offers guidance that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required.
Indications, contraindications and precautions

Indications

Exeter V40 Femoral Stem Hip System (includes Orthinox V40 Femoral heads). The Exeter V40 Femoral Stem Hip System is intended for use in total or hemi hip replacement. It is intended for cemented use only. The Exeter V40 Femoral Stem Hip System is indicated for:

- 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; and,
- Treatment of non-union, femoral neck and trochanteric fractures of the proximal femur with head involvement that are unmanageable using other techniques.

Contraindications

- Active infection or suspected latent infection in or about the hip joint.
- Bone stock that is inadequate for support or fixation of the prosthesis.
- Skeletal immaturity.
- 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.

Introduction

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.
Step 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 (Figure 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.

**Note**

Templating: the bone-cement interface must remain excellent in the distal and mid-portions of the cement mantle.
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Steps 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 (Figures 2, 3 and 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 (Figures 3 and 4).

Step 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 (Figure 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.
Step 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.

Steps 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) (Figures 7 and 8).
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. 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.

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

Steps 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 (Figures 9 and 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.

Implant listing

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
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<tbody>
<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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<tr>
<td>0580-3-501</td>
<td>Exeter V40 50mm No. 1 L.125</td>
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Instrument listing

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<tbody>
<tr>
<td>0581-1-044</td>
<td>Exeter V40 44mm No. 00 L.125 Stem Trial</td>
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<tr>
<td>0581-3-371</td>
<td>Exeter V40 37.5mm No. 1 L.125 Stem Trial</td>
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<td>0581-3-441</td>
<td>Exeter V40 44mm No. 1 L.125 Stem Trial</td>
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<td>0581-3-501</td>
<td>Exeter V40 50mm No. 1 L.125 Stem Trial</td>
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<tr>
<td>0570-9-000</td>
<td>Trial Locating Pin</td>
</tr>
<tr>
<td>0932-3-000</td>
<td>Cement Reamer (Hudson connection)</td>
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<td>0580-4-100</td>
<td>Exeter V40 44mm No. 00 L.125 X-Ray Template 0% Oversize (Scale 1)</td>
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<tr>
<td>0580-4-120</td>
<td>Exeter V40 44mm No. 00 L.125 X-Ray Template 20% Oversize (Scale 1.2)</td>
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<tr>
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A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate the breadth of Stryker’s product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any of Stryker’s products. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. The products depicted are CE marked according to the Medical Device Directive 93/42/EEC. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

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