

LIBERTAS®



HIP



**LIBERTAS® Cemented Femoral Stem
and Modular Femoral Head
Surgical Technique**

Pursue Life™

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LIBERTAS[®] CEMENTED FEMORAL STEM AND MODULAR FEMORAL HEAD SURGICAL TECHNIQUE

STEP 1: Preoperative Planning

X-Ray templates can be used over AP and lateral radiographs to help determine the correct size to restore the patient's natural anatomy.

Templates are 115% magnification.

NOTE

Templating preoperatively is a guide only, and final component sizing and positioning needs to be assessed at surgery.



Preoperative Planning

WARNING AND PRECAUTIONS

LIBERTAS[®] Cemented Femoral Stem must be implanted with cement.

STEP 2: Surgical Approach

The LIBERTAS[®] Cemented Stem can be used with any surgical approach that the surgeon selects and is comfortable with.



Anterolateral approach



Direct-anterior approach



Posterolateral approach

Surgical Approach

STEPS

3

4

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STEP 3: Femoral Neck Resection

The **neck resection guide** should be used in conjunction with preoperative planning to determine the level of femoral neck resection.

The guide is moved along the longitudinal axis of exposed femur so that the center of the femoral head matches the appropriate stem offset. There are resection markings for -4, +0 and +4 neck lengths for both 38mm and 45mm offset stems.

The femoral neck resection osteotomy line for this procedure is not crucial due to the collarless design of the LIBERTAS® Cemented Stem.

STEP 4: Establishing the Medullary Canal

Use the **IM initiator** to create a pilot hole in the proximal femur. Place the **IM initiator** at the posterior margin of the neck resection, lateral near the piriformis fossa.



Femoral Neck Resection



Establishing the Medullary Canal

LIBERTAS® CEMENTED FEMORAL STEM AND MODULAR FEMORAL HEAD SURGICAL TECHNIQUE

STEP 5: 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.

Depending upon the size of the LIBERTAS® Cemented Stem, either a small or large **box osteotome** may be used to open the proximal femur.

STEP 6: Medullary Canal Reaming

The **canal finder** is attached to the **T-handle** and is used to open the natural axis of the femoral canal for broaching preparation and distal cement insertion.

8mm, 10mm or 12mm **canal reamers** are used sequentially, smallest first, to widen the femoral canal until the required diameter and depth are achieved while maintaining axial alignment within the femur.

Depth lines are marked on all three **reamers** and when the required depth is reached, reaming should stop.

NOTE

There should be at least 1–2 cm depth of cement between the distal tip of the **stem centralizer** and the top of the **cement restrictor**.



Femoral Canal Preparation



Medullary Canal Reaming

STEPS

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LIBERTAS® CEMENTED FEMORAL STEM AND MODULAR FEMORAL HEAD SURGICAL TECHNIQUE

STEP 7: Broaching

The medullary canal is then broached sequentially starting with the smallest **rasp**, of appropriate offset, until the **rasp** equivalent to the prosthesis chosen at templating is seated within the femur.

The **rasp handle** may be impacted directly using a **mallet**, or the **slap hammer** may be used to both impact and loosen the **rasp**.

The **universal handle** or **antiversion handle** can be assembled to the **broach handle** to provide the antiversion alignment to the **broach**.

Seat the final **broach** slightly below the level of the femoral neck resection to facilitate calcar reaming if required.

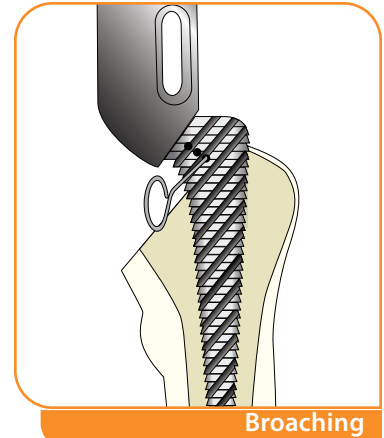
Alternatively, a **locating pin** can be used to keep the unstable **rasp** in the femoral cavity at the appropriate depth position.

STEP 8: Calcar Preparation (optional)

Locate the **calcar reamer** onto the spigot of the **broach** to remove excess bone from the resected neck.

Plane the calcar until it is level with the **broach**.

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



Broaching



Calcar Preparation (optional)

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STEP 9: Trial Reduction

With the final **broach** in situ, attach the appropriate **modular trial neck** and **trial head**. Reduce the hip and assess what adjustments, if any, are required to provide stability through a full range of motion.

Long or short **trial heads** may be used if adjustment is necessary.

Remove the **trial head, neck trial** and final **broach**.

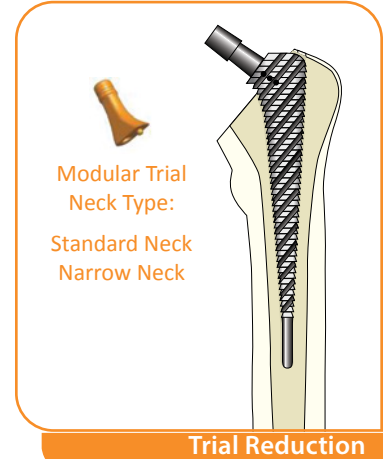
The **broach** is removed using the **rasp handle** and **slap hammer**.

STEP 10: Cement Plug Insertion

A suitable size of **cement restrictor** is selected, depending on the size of the final **canal reamer** used. The **cement restrictor** is screwed onto the **cement restrictor inserter** using a clockwise motion.

The depth of insertion is determined by placing the **cement restrictor inserter** alongside the femoral stem. The **cement restrictor** is aligned 1–2 cm beyond the distal tip of the femoral stem and a measurement taken from the markings on the **cement inserter handle**. The lateral shoulder can be a good reference point.

Once the **cement restrictor** is inserted at a predefined level, the **inserter** would be removed by turning the **inserter handle** counterclockwise to unscrew it from the **cement restrictor**.



NOTE

If the **cement restrictor** needs to be removed prior to cement insertion, it can be done by screwing the **cement inserter** into the **cement restrictor** and pulling it from the femoral canal.

The surgeon may adjust the **restrictor** as many times as required prior to cement insertion.

STEP

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LIBERTAS® CEMENTED FEMORAL STEM AND MODULAR FEMORAL HEAD SURGICAL TECHNIQUE

STEP 11: Stem Insertion

Before inserting the LIBERTAS® **cemented stem** into the femoral medullary canal, the canal is cleared of debris and cleaned using pulsed lavage and then dried. The cement is then inserted using a **cement gun** until the canal is almost filled.

The definitive LIBERTAS® **cemented stem** along with the appropriate **centralizer** is attached to the **stem inserter**. The stem is then pushed firmly into the **bone cement** until it reaches the level at which the **broach** sat during the trial reduction (this may be checked by reference to the three marks on the implant).

While inserting the **stem** into the canal, pressure is applied to the cement by placing the thumb medial to the stem. Once the **bone cement** has fully polymerized, excess cement is removed, and the **stem inserter** is detached from the **stem**.



NOTES

- Two types of **centralizer** are available: **winged** and **wingless**. The choice of the **centralizer** depends upon the canal size; for a canal size of 10mm or less, a **wingless centralizer** should be used.
- During insertion of **stem** into the canal, the **stem** should be advanced approximately 1cm per second to avoid air inclusion in the stem/cement interface.

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STEP 12: Femoral Head Impaction

A further trial reduction is recommended and is performed using the **trial modular femoral head**.

Before placing the actual **modular femoral head**, the taper portion of the LIBERTAS® **cemented stem** should be cleaned and dried.

The **modular femoral head** of choice is placed onto the **stem 12/14 taper** and impacted by using the **femoral head impactor** and a **mallet**. A light tap is required to engage the **taper**.



Pursue Life™

For more information about Libertas® Hip, please contact your local representative.

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Libertas® Hip System



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Norristown, PA 19403 USA



Carefully read all instructions and be familiar with the surgical techniques prior to use.

Please see the package insert for complete device description, product selection information, indications, contraindications, precautions, adverse effects, warnings, materials, sterilization and patient guidance associated with the Libertas® Total Hip System.

CAUTION: THIS DEVICE IS RESTRICTED TO SALE BY OR ON THE ORDER OF A LICENSED PHYSICIAN

WARNINGS: THE LIBERTAS® CEMENTED FEMORAL STEM IS INTENDED FOR CEMENTED USE ONLY.
THE LIBERTAS® HA UNCEMENTED FEMORAL STEM IS INTENDED FOR UNCEMENTED USE ONLY.

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