

# BET Hip Stem System

## Surgical Technique



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# BIOTECH

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# "Movement is Life"

The BET cemented stems can be implanted with the same set of instruments as the BA Total Hip System , with the additional special BET rasp tray.

### 1.Pre-operative Planning

Pre-operative templating is very important to allow the surgeon to select the appropriate implant size and to plan the positions of the components.

Allowance has to be made for the need to obtain a complete cement mantle for the femoral component.

### 2.Surgical Exposure

Support the patient firmly and accurately in the lateral decubitus position (Fig. 1) to assure the correct orientation of the acetabular component.

**IMPORTANT:** do not flex the contralateral hip too much as this could reduce the lumbar lordosis, causing risk of retroversion of the cup.

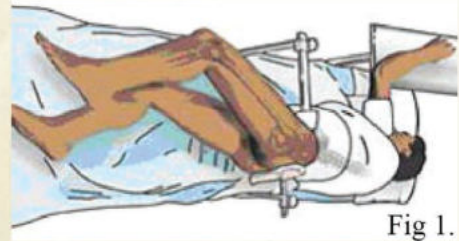


Fig 1.

Either the femur or the acetabulum may be prepared first.

### 3. Resection of the Femoral Neck

The BET Hip Stem is a collarless femoral stem, therefore the level and orientation of neck resection is not critical.

The level of section usually runs from mid-way between the upper margin of the lesser trochanter and the inferior aspect of the head, to the upper surface of the base of the neck (Fig. 2).



Fig 2.

### 4. Femoral Preparation

The leg is positioned and a gluteus medius retractor may be used to fully expose the proximal femur (Fig. 3).

The opening in the cut surface of the femoral neck is developed from within the calcar toward the proximal aspect of the greater trochanter as far as necessary - to allow the BET stem to be passed directly down the femur in the long axis of the medullary canal.

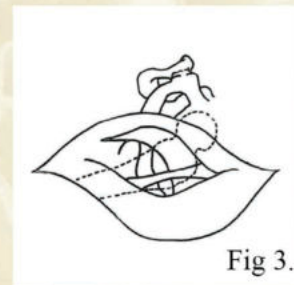


Fig 3.

The cavity is opened, to undercut the base of the neck, and develop the slot into the trochanteric region After undercutting, resect the bone of the neck, if necessary. With the help of the reamer develop the slot to ensure that the femoral stem can be inserted down the mid-line of the femur.

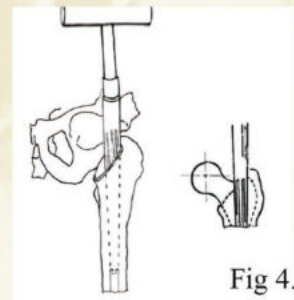


Fig 4.

The reamer should be positioned within the canal so that it aligns with the popliteal space (Fig. 4), or in case of lateral approach with the patella. Trabecular bone is removed from within the calcar until a strong layer is encountered, usually this will leave 2 - 3mm of strong trabecular bone. This bone layer provides a firm foundation for the micro-interlock of cement within the bone.

Start with a smaller size of rasp initially and continue with the rasp considered appropriate for the femur.

**IMPORTANT:** avoid over-rasping the canal and removing too much cancellous bone.(Fig 5)

If excess force is required to introduce a rasp to this level then the canal should be further developed with the reamer, without compromising the layer of strong trabecular bone.

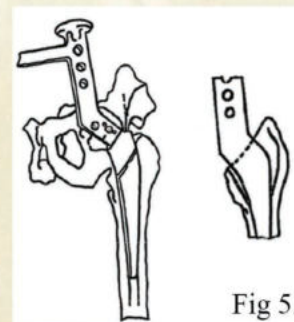


Fig 5.

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## 5. Trial reduction

The modular rasp system allows for trial reduction once the rasping procedure has been completed. Simply remove the rasp handle and replace it with the appropriate head trial. The joint can be reduced to examine leg length, stability and range of motion. If needed, adjustments can be made (Fig. 6).

Leg shortening can be compensated for by implanting the stem to a higher level. If the leg has been lengthened, this can be compensated by impacting the rasp further into the femur and repeating the trial reduction. A smaller rasp may be required.

Remove the trial head, after the correct leg length has been achieved. Reattach the rasp handle to remove the rasp.

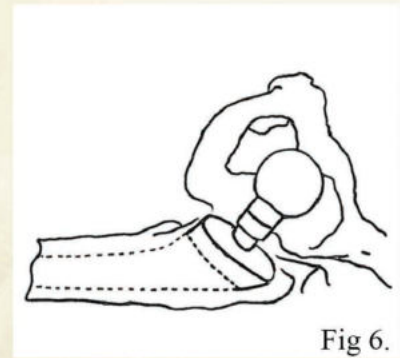


Fig 6.

## 6. Femoral Cementing

Apply the bone cement and then insert the femoral stem. (Fig 7) Delay the stem insertion as long as possible, as during stem insertion interface pressures in the canal are directly related to the viscosity of the cement.



Fig 7.

## 7. Stem Implantation

By implanting cemented BET Stem, distal centraliser must be used to prevent end-bearing of the stem, and to ensure the proper engagement of the stem taper in the cement mantle. The selected stem is mounted on the introducer. (Fig. 8)

**IMPORTANT:** the handle of the introducer is exactly in the mid-line of the stem and so the introducer and the stem can be lined up with the medullary canal of the femur.

Introduce the stem through the proximal femoral opening closer to the posterior femoral cortex than the anterior. In case of posterior approach aim at the middle of the popliteal fossa, or the patella by lateral approach.

The stem is driven into place with the surgeon's thumb occluding the medial exit from the upper end of the femur between the stem and the calcar, to further pressurise the cement into the cancellous bone. (Fig. 9)

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 predetermined position.

## 8. Reduction

A further trial reduction may be carried out using the appropriate trial heads. Correct leg length and stability should be checked again. Place the appropriate size of femoral head on the stem. (Fig. 10).

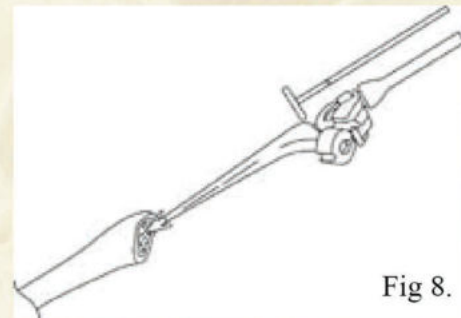


Fig 8.

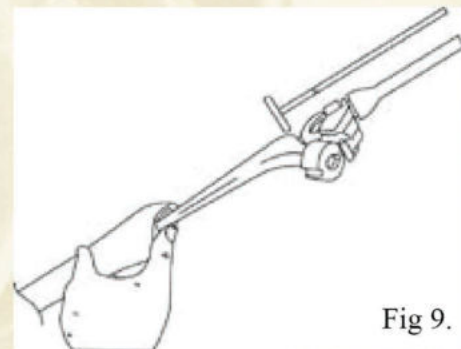


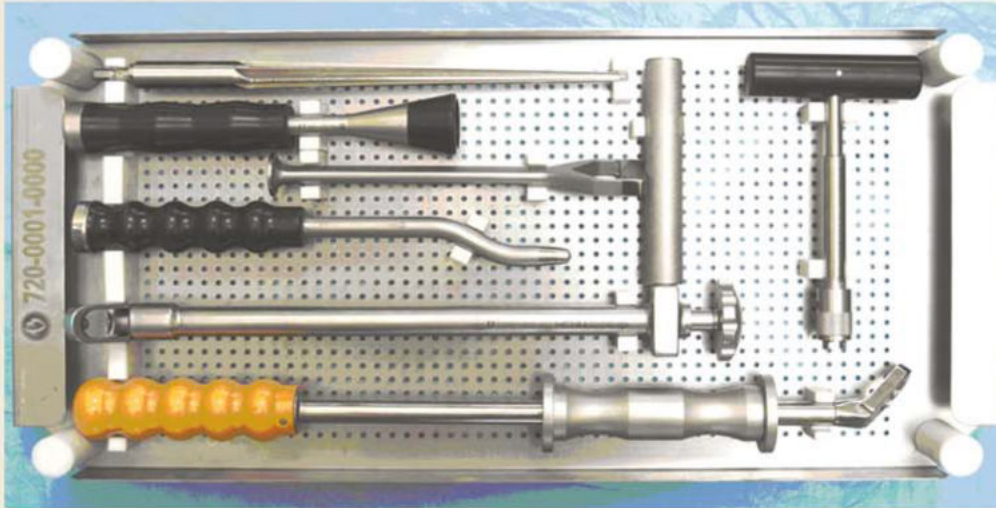
Fig 9.



Fig 10.

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## Femoral Instrument Tray



## BET Rasp Tray

