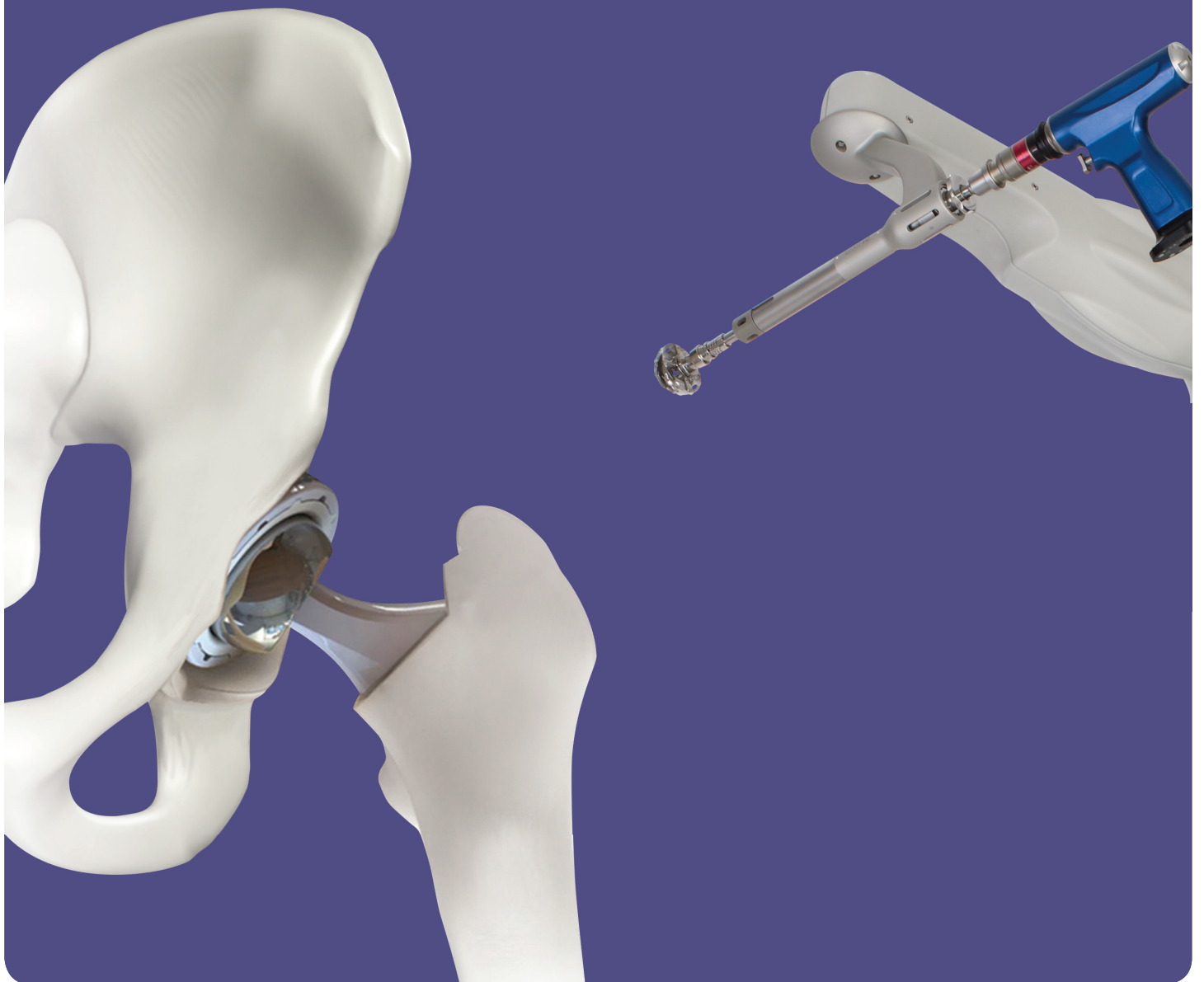


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MAKO™ THA FEMORAL EXPRESS

Surgical
Technique
Overview



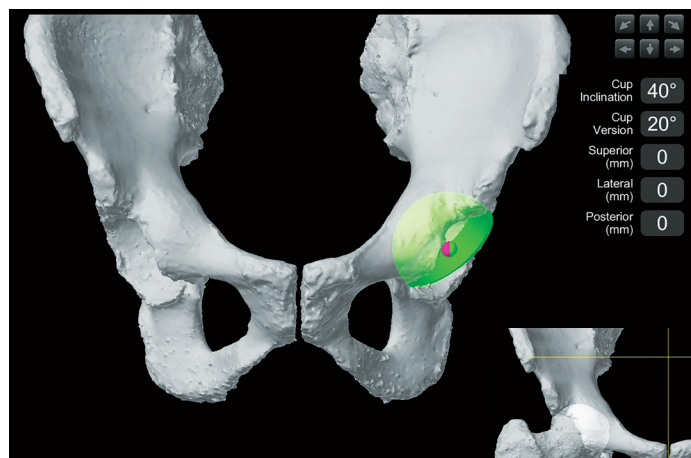
MAKO THA FEMORAL EXPRESS

Mako Total Hip Application utilizes proprietary Computed Tomography (CT) based software that provides 3-D visualization for surgical planning and execution. This, combined with auditory and robotic arm tactile feedback intra-operatively, enables accurate implant placement and alignment based on each patient's specific anatomy.



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.

SURGICAL TECHNIQUE OVERVIEW



Note

For detailed instructions, please refer to Mako Total Hip Application User Guide.

1. Use case planning tools from the software application to confirm acetabular shell and femoral stem placement for desired leg length and offset (Figure 1).

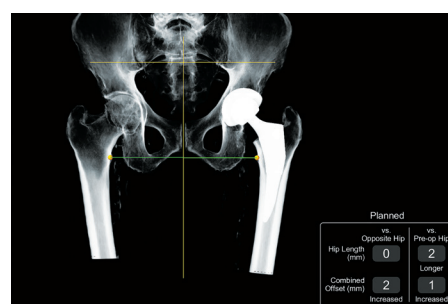
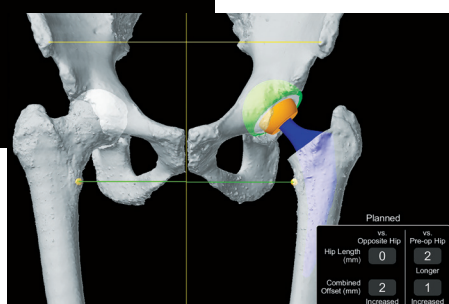


Figure 1

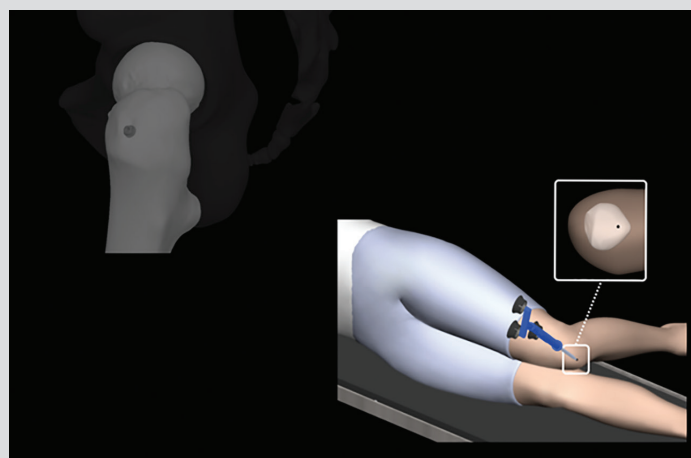


Figure 2

2. Prior to draping the patient, place EKG lead on the inferior pole of the patient's patella and then proceed to drape the patient (Figure 2). Insert the first pin for the pelvic array in the iliac crest 1-2 finger breadths from the most prominent point of the ASIS (Figure 3). Using the 3-pin clamp as a guide, place the 2nd and 3rd pin and attach the pelvic array. Perform incision and insert proximal femoral and pelvic checkpoints. Capture both the proximal and distal landmarks with the leg in the operative position, ensuring the femur remains stable between captures. Next, capture and verify the pelvic checkpoint. Once the checkpoint is captured, dislocate the femur and resect the femoral neck.

The surgeon may elect to dislocate the femur and resect the femoral neck before placing the pelvic checkpoint. If this order is preferred, the surgical team must pay close attention to avoid bumping the pelvic array.

While an "acetabulum-first" approach is shown in the following steps, the surgeon may elect to prepare the femur prior to acetabular preparation.

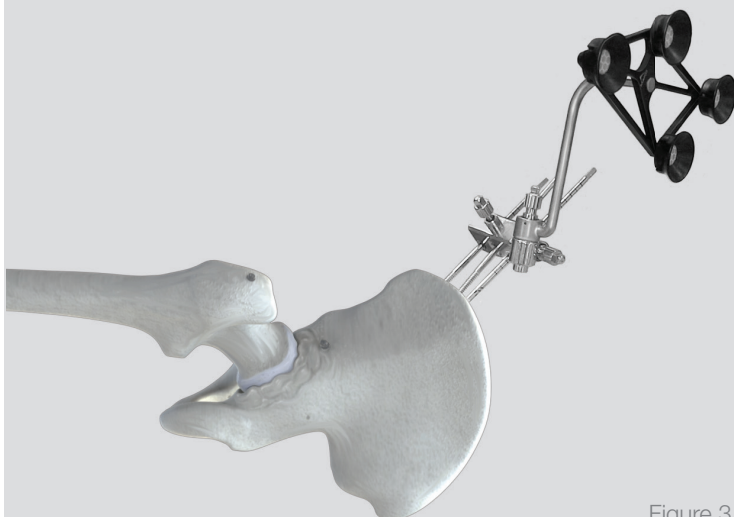


Figure 3

SURGICAL TECHNIQUE OVERVIEW

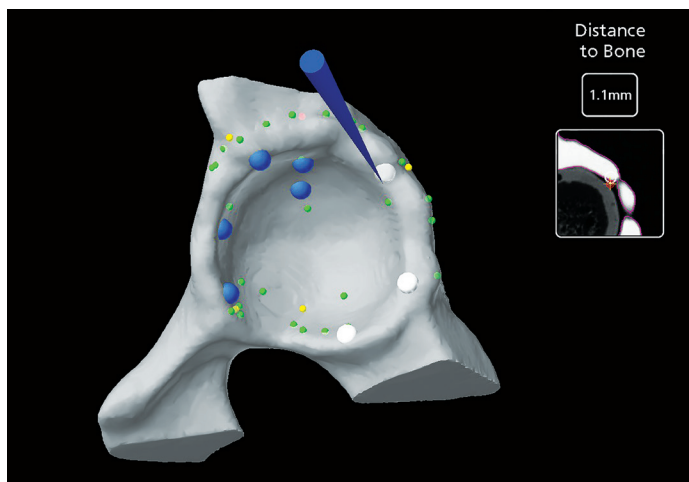


Figure 4

3. Remove the labrum and register the acetabulum (Figure 4). Osteophytes should be left intact during the registration process.

If osteophytes are removed or damaged, do not collect points in that area.



Figure 5

4. Once registration is verified, proceed with acetabular reaming (Figure 5).

Depending on each surgeon's individual preference, he/she may prefer to position the arm before engaging the stereotactic boundaries.



Figure 6

5. Attach the acetabular shell implant to the impactor shaft and position the acetabular shell. The stereotactic boundaries will engage the MAKO robotic arm to assist in positioning the component (Figure 6). Verify the cup position data from the impaction capture values before disengaging the cup.

The surgeon may prefer to position the arm before engaging the stereotactic boundaries.

SURGICAL TECHNIQUE OVERVIEW



Figure 7

6. Access the femur and use the box osteotome and canal finder to open the femoral canal. Continue broaching by increasing size incrementally. Ensure that the medial portion of the broach is sitting flush with the calcar (Figure 7).

The approach to femoral preparation should be completed in the manner dictated by the implant's surgical technique



Figure 8

7. Insert trial liner, trial neck, and trial femoral head, then reduce (Figure 8). Confirm placement and sizes in the Reduction Results software window. Confirm joint stability by taking the hip through a range of motion. Then return to the original pre-operative position and capture the proximal and distal landmarks to confirm that the planned offset and leg length have been achieved.

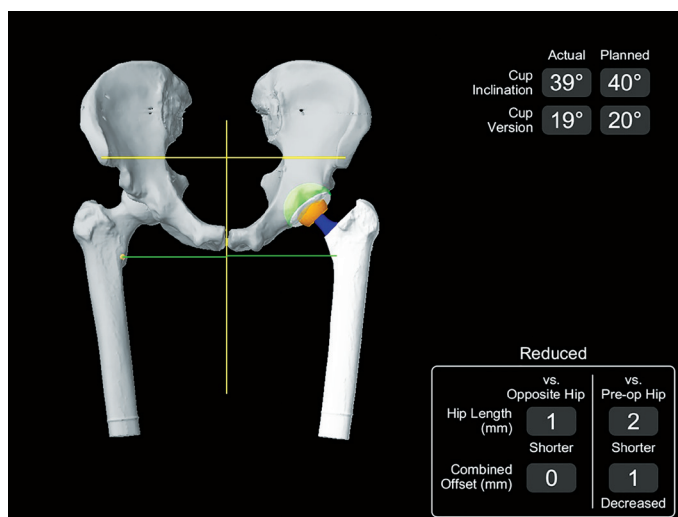


Figure 9

8. After the surgeon performs his/her trial reductions, remove the trials and implant the corresponding femoral stem and femoral head. Following implantation, the surgeon is able to check the final results once the components are implanted (Figure 9). After the final check, remove all of the arrays, checkpoints and bone pins.
9. The surgical site is then closed according to surgeon preference.



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