MAIN TECHNIQUE

Begin the templating with a 14 x 17 AP view of the pelvis and both hips. Mark the apparent center of rotation of the affected hip femoral head with an “x”. Draw a line across the ischial tuberosities, intersecting the lesser trochanters and evaluate the level of intersection as an indication of the relative length of each hip (Figure 1).

Place the acetabular template over the X-ray. Choose the acetabular component size that best fits the subchondral bone, medializing the component as necessary to the edge of the tear drop to remove sclerotic bone. Mark the center of rotation of the acetabular component with a dot. This will indicate any change of limb length obtained with the acetabular arthroplasty. In this example, no significant change in limb length will occur, as the dot and “x” are almost superimposed (Figure 2).

Next, place the Exact™ Femoral Template over the X-ray of the affected hip. Choose the size that appears to produce maximal fill of the proximal and distal femur. Position the template accordingly while observing the proximity of the head center of rotation (previously marked with an “x”) to the template neck length options – standard and lateralized. Use the offset which more closely matches the femoral anatomy. Use of a lateral offset stem is common when femoral offset is nearing or greater than 50mm. Identify the level of resection and measure the distance from resection level to the lesser trochanter. Mark the level of neck resection on the X-ray, and write the number of millimeters of the resection above the lesser trochanter (20mm in this example). Note the intersection of the horizontal lines with the tip of the greater trochanter. Mark on the X-ray the height of the trochanteric block as indicated by the numeric label on the template (+5, in this example) (Figure 3).
Setting the trochanteric stop on the Exact™ Resection Guide will help position the osteotomy at the proper height above the lesser trochanter (Figure 4).

This close-up view of the hip demonstrates the Exact™ Template’s “Standard” length femoral head center positioned over the center of the femoral head. The femoral neck will be resected 20mm above the lesser trochanter. The trochanteric stop on the resection guide, when set in the “+5” position, will help position the resection 20mm above the lesser trochanter. Note: Variable thickness of the abductor tendons will affect the ultimate setting of the trochanteric stop on the resection guide (Figure 5).

The lateral view of the affected femur should be checked with the selected template to make sure the femoral anatomy will accommodate the selected stem (Figure 6).

**LIMB LENGTH MEASUREMENT**

Intraoperative limb length measurement is an essential component of successful total hip replacement. Multiple techniques are available, such as placing a pin in the pelvis prior to dislocation, with measurement to a landmark such as the vastus tubercle. This dimension can be checked after trial reduction to confirm maintenance or change in limb length. The surgeon should use whatever method proves reliable in his or her hands.
X-RAY TEMPLATING

TEMPLATE MEASUREMENTS:
The Exact™ Hip Instrumentation femoral templates include the following measurements that aid proper prosthetic placement for restoration of proper leg length and biomechanics.

A. Head Center Marking Holes showing +12, +9, +6, +3, 0, -3, -6 for both standard and lateral.
B. Vertical Scale (along left side of the template) with 0mm located at medial resection level to measure stem length and vertical offset.
C. Vertical Scale with 0mm located at standard head center (for referencing the greater trochanter).
D. Medial Radius Scale with 0mm located at resection level (for referencing lesser trochanter).
E. Horizontal Offsets measured horizontally from stem centerline to the center of the femoral head (table).
F. Neck Lengths measured from resection level to the center of the femoral head (table).
G. Vertical offsets measured vertically from medial resection level to the center of the femoral head (table).
H. Neck Angles for both standard and lateral stems (table).

SURGICAL TECHNIQUE ILLUSTRATIONS
The following illustrations show the Exact™ Template, Resection Guide and Reamers and how the reference measurements relate to each other as well as to the femoral anatomy.