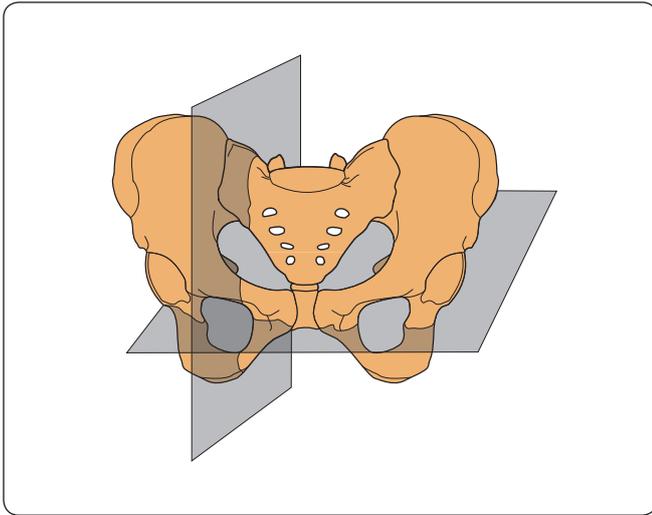


# PELVIC APPLICATIONS

FRACTURES AND DISRUPTIONS OF THE PELVIC RING

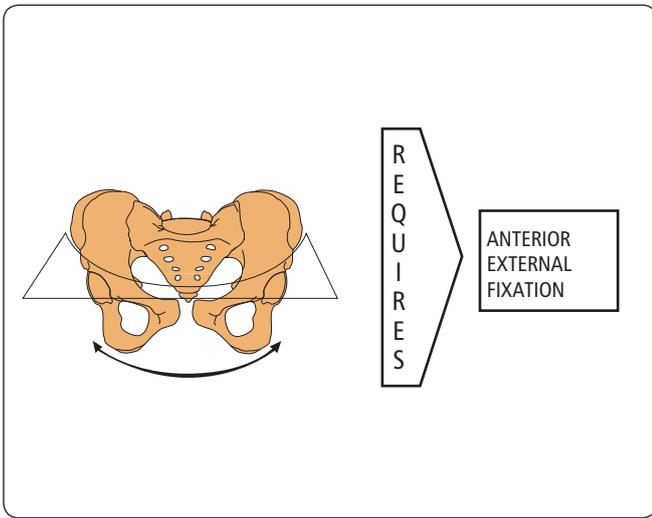




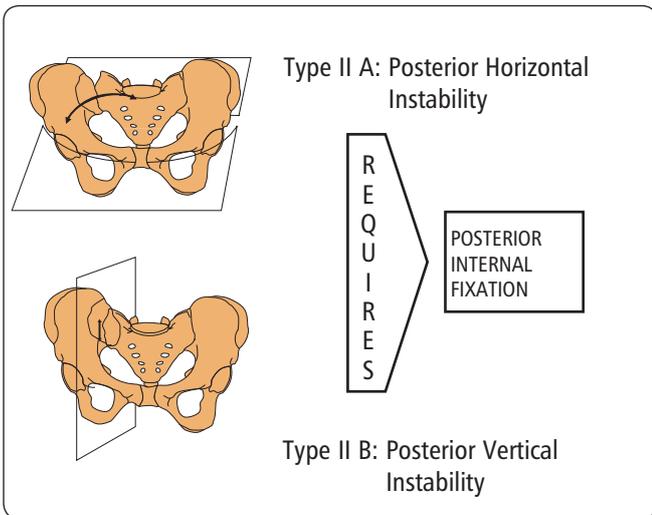
**CLASSIFICATION OF PELVIC RING INSTABILITIES**

There are two main planes of pelvic instability, a horizontal plane and a vertical plane. Based upon this, pelvic ring instabilities may be divided into three types, which indicate the type of management required.

- Type I: Anterior Horizontal Instability
- Type II: Posterior Instability
- Type III: Antero-Posterior Instability

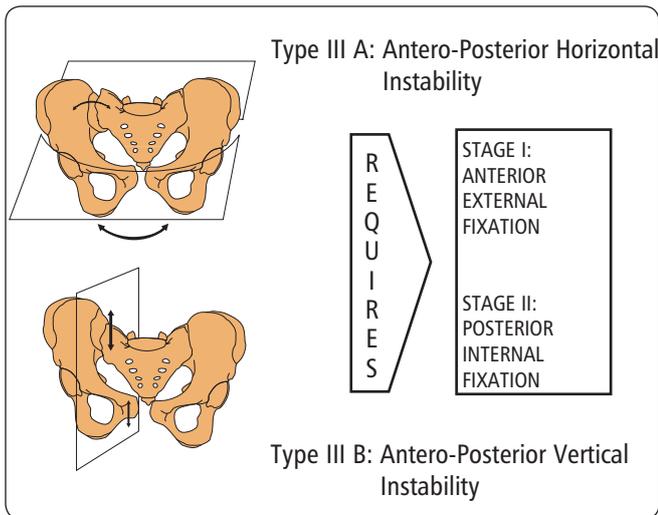


**Type 1: Anterior Horizontal Instability**



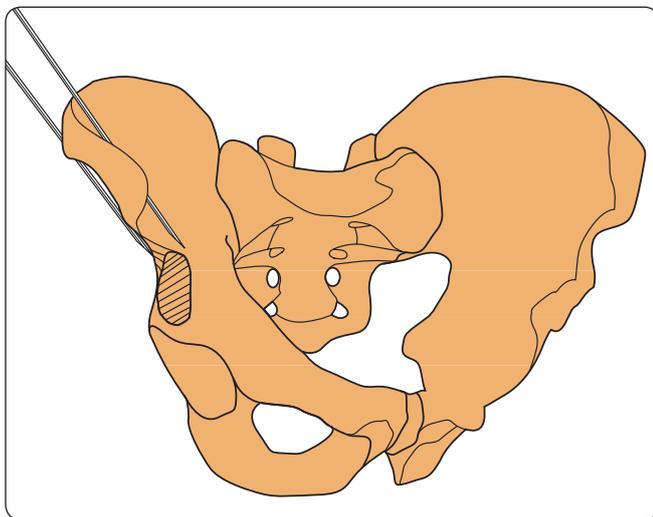
**Type 11: Posterior Instability**

- Type II A: Posterior Horizontal Instability
- Type II B: Posterior Vertical Instability



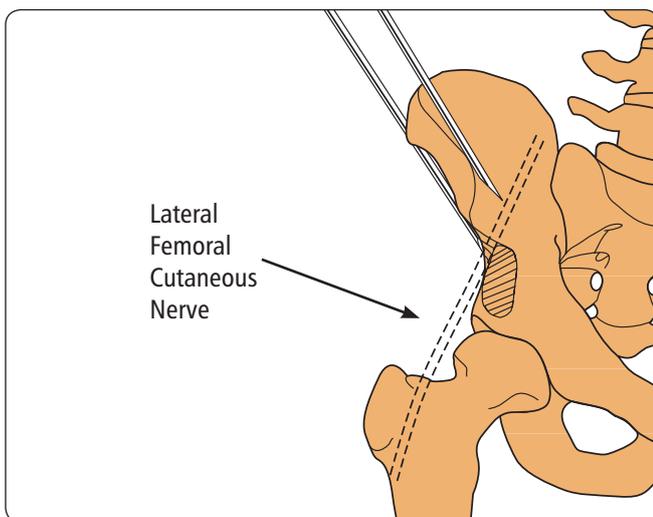
**Type 111: Antero-posterior Instability**

Type III A: Antero-Posterior Horizontal Instability  
 Type III B: Antero-Posterior Vertical Instability



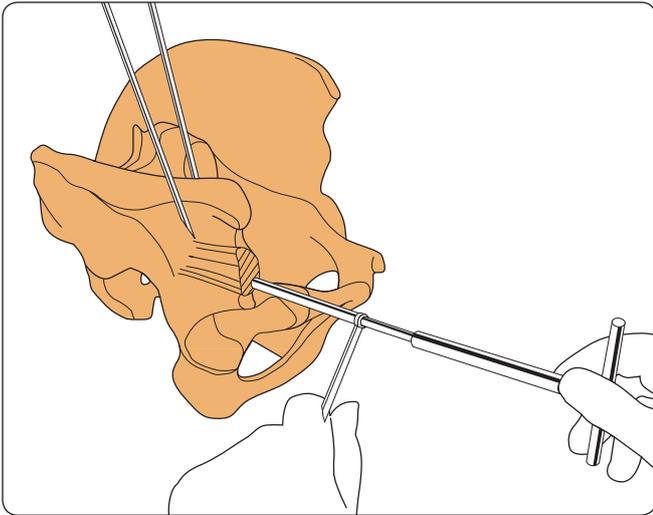
**ANTERIOR APPLICATION OF FIXATOR**

Commence with the uninjured side. Insert two Kirschner wires to establish the orientation of the hemipelvis: one from the iliac crest along the inner table of the ilium and one along the outer table.

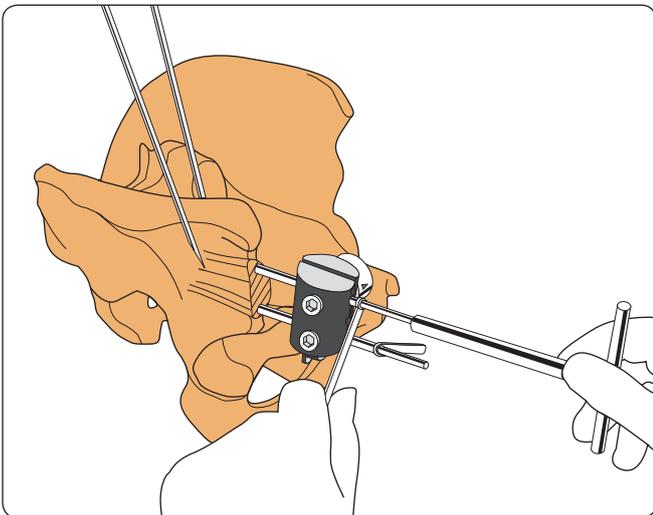


Make a 3 cm incision, starting just below the anterior superior iliac spine. Expose the bone by blunt dissection, protecting the lateral femoral cutaneous nerve with retractors.

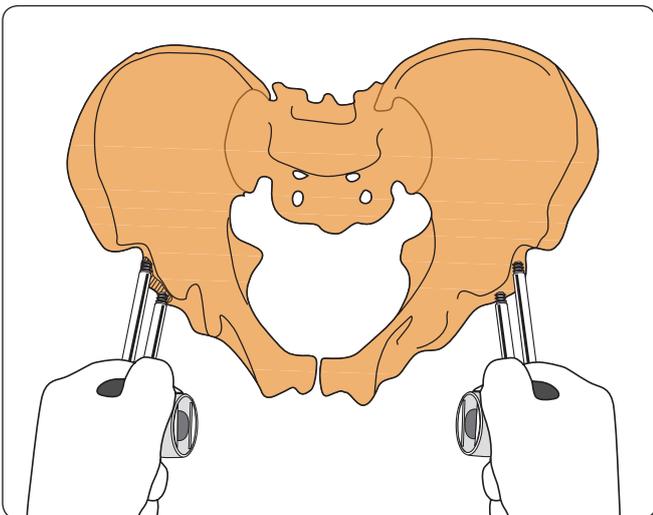
Identify the bony landmarks with a finger: anterior margin of ilium, anterior inferior spine, and superior edge of acetabulum.



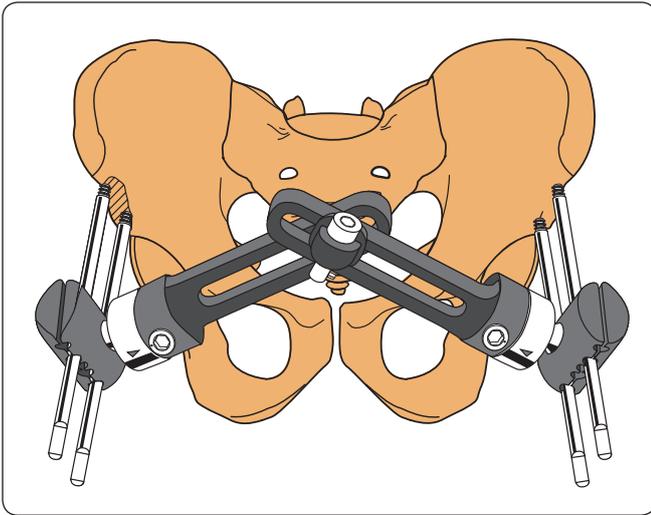
Insert a screw guide down to the bone, at least 1cm superior to edge of acetabulum, angled 30 degrees upwards. Insert a self-drilling screw, gently tap it through the cortex and screw it home with the T-wrench, without forcing the screw in any direction. The depth of insertion is 40-50mm (almost the entire thread length). In young patients (16 years and under), use a 3.2mm drill bit and drill guide to penetrate the hard cortex to a depth of 1 cm.



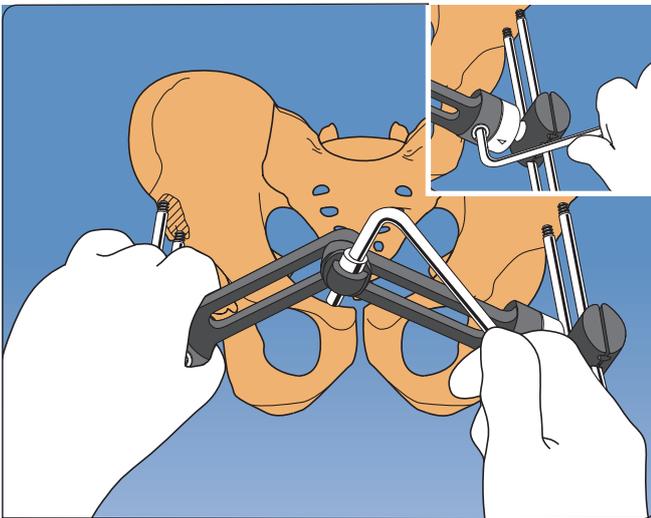
Place the screw and screw guide in the first seat of the T-clamp. Insert second screw about 2 cm proximal to the first, in the third or fourth clamp seat.



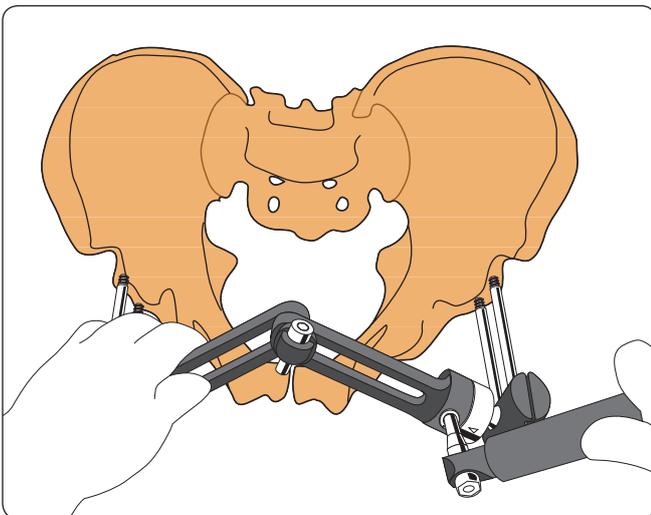
Insert screws into the injured hemipelvis using the same procedure, and grasp both pairs of screws firmly to ensure they are able to withstand loads. Check screw placement under image intensification.



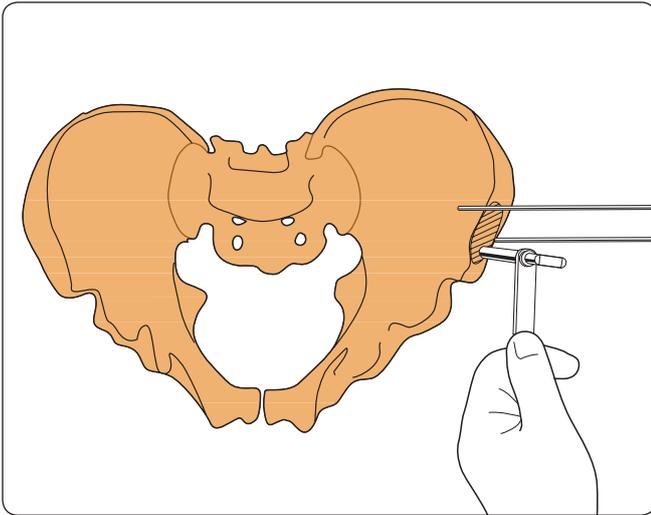
Apply fixator to the T-clamps and, with the ball-joints and central hinge unlocked, reduce the fracture, if necessary manipulating the limb on the injured side.  
 Manipulation forceps may be used to distance the surgeon's hands from the X-ray beam.



Tighten the central cam and ball-joints with the Allen wrench.



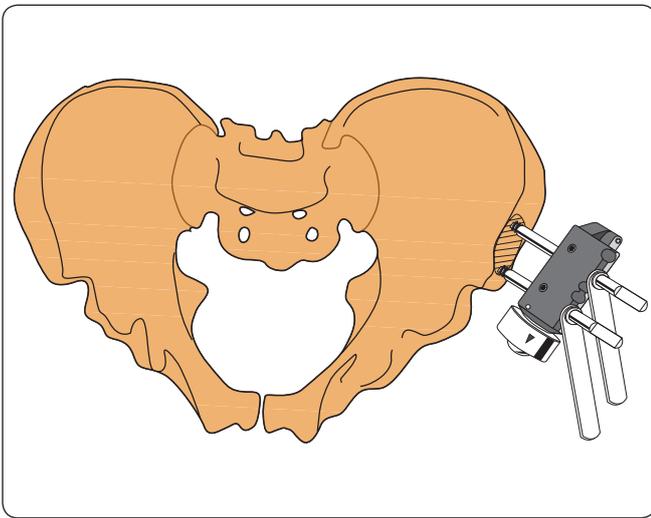
Finally lock the ball-joints with the torque wrench.



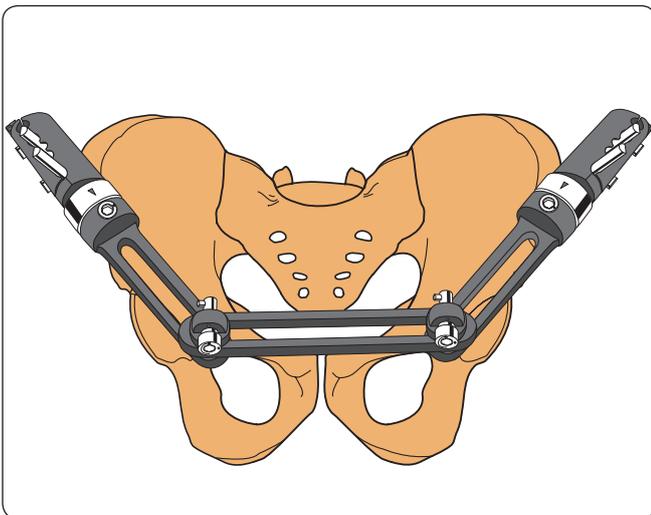
### ILIAC CREST APPLICATION OF FIXATOR

#### Application with Straight Clamps

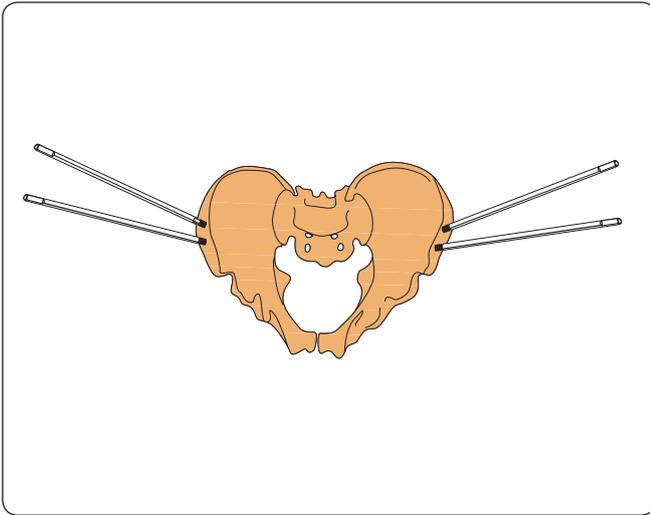
Insert screws at an angle of  $45^\circ$  to the long axis of the body through a 3-4 cm incision over the iliac crest. Insert first screw 1.5-2.0 cm posterior to the anterior superior iliac spine, through a screw guide.



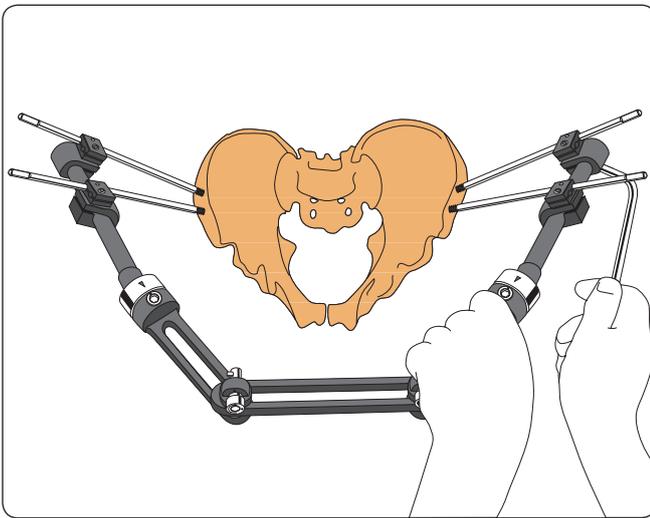
Mount a hinged straight clamp on the screw guide and insert second screw about 2 cm posterior to first. Where the bone of the iliac crest is very hard, predrill using a 3.2mm drill bit.



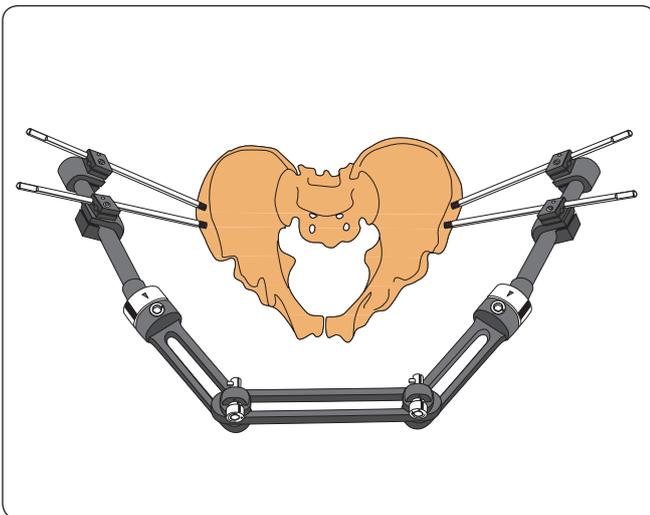
Repeat the procedure on the opposite side, apply the fixator and reduce the fracture.

**Application with Independent Screw Clamps**

Insert screws freehand through a screw guide in the preferred positions.



Introduce screws into the independent screw clamps and lock the independent screw clamps both to the screws and to the bar of the Ball-Jointed Module on which they slide, by tightening the single nut.



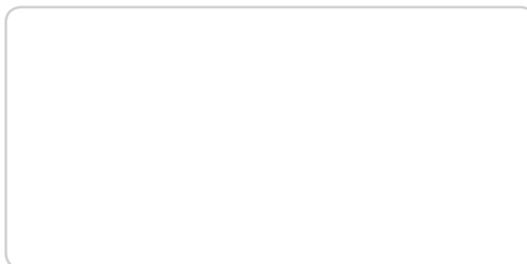
Reduce the fracture.



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Instructions for Use: See actual package insert for Instructions for Use.

Caution: Federal law (USA) restricts this device to sale by or on the order of a physician. Proper surgical procedure is the responsibility of the medical professional. Operative techniques are furnished as an informative guideline. Each surgeon must evaluate the appropriateness of a technique based on his or her personal medical credentials and experience. Please refer to the "Instructions for Use" supplied with the product for specific information on indications for use, contraindications, warnings, precautions, adverse reactions and sterilization.

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