The Orthofix Pertrochanteric Fixator comprises:

- An anterior clamp (B):
  - Screw (6).
  - Rotation of the proximal screw seat is controlled by a locking screw (7).
  - Rotation of the distal screw seats in the anterior clamp in the frontal plane is controlled by locking screw (5).

- A posterior clamp (A):
  - Screw (7).
  - Proximal screw seat is machined at an angle of 115° to the longitudinal axis to enable one screw to be inserted along the axis of the neck (right or left femur), and a second screw to be inserted in a convergent mode (5).

**Bibliography**


**ORDERING INFORMATION**

**INSTRUMENTATION**

- CODE 105910 Pertrochanteric Fixator complete with Allen Wrench 5 mm

**SCREWS**

- CODE 111120 Screw Guide
- CODE 111010 Bone Screw Guide
- CODE 99-0123-00 Calcium Nitrite Bone Screws 260/40, sterile
- CODE 99-0124-00 Calcium Nitrite Bone Screws 300/40, sterile

* The screws listed are the most commonly used. Selection of correct total screw length and thread length is based upon the criteria described under Operative Technique. Note that bone screws are for single use only and must be used fresh.

See Manual 1 “General Application Instructions” for Equipment Maintenance, Cleaning and Sterilization.

**PER**

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Operative Technique

The fracture must be reduced in both planes under image intensification, before application of the fixator.

**Femoral Neck (Self-Drilling) Screws**

Note: The thread length is selected to ensure that it passes through and beyond the fracture site.

1. The most proximal screw is inserted first.
2. A 2 mm Kirschner wire is inserted along the femoral neck at an angle of 110° to 130° to the long axis of the diaphysis. The path of the wire should be within 5 mm of the superior border of the femoral neck, and must be perfectly central when viewed axially.
3. Correct positioning of this wire is essential, since it determines the final position of the bone screws. The wire should be in contact with the superior cortex of the femoral neck.
4. A 1 cm incision is made distal to the K-wire through the tissues following the direction of the wire. The 6 mm trocar inserted into the special screw guide is used to locate the bone, sliding the guide cannulated section of the screw guide cover over the trocar.
5. The Kirschner wire and special screw guide are now partially tightened over the screw guide, with the 6 mm trocar, inserted into the posterior clamp seat, through a second incision down to the lateral aspect of the femur. Its position is adjusted according to shape of the femoral neck, and ideally so that it is slightly convergent with respect to the long axis. The trocar is then replaced by the second locking head, and a 2.4 mm drill is used to drill the correct drill guide, and a 260/40 XCaliber screw inserted until it is just protruding from the second cortex. After insertion, the screw guide is removed and the clamp cover definitively tightened.

6. The distal diaphyseal screw is now inserted through a screw guide after pre-drilling as before. The distal screw seat of the anterior clamp can rotate axially in relation to the posterior clamp seat, to enable ideal positioning of this second diaphyseal screw in the centre of the bone.
7. The clamp is locked in this position by tightening the locking screw (7) (see page 5). After inserting the second diaphyseal screw the screw guide is removed and the clamp cover definitively tightened.
8. The most proximal screw is inserted first. The second proximal screw is inserted in the same manner as the first.
9. The screws are inserted perpendicular to the long axis of the femur, or obliquely, for those seated more distally. The Most proximal screw is inserted in the desired seat, and the distal femoral neck screw in inserted in the swivelling screw seat, after which the posterior clamp is locked in the desired position using the appropriate screws (5) (see page 5) (see page 5) (see page 5) (see page 5).
10. The clamp is locked in this position by tightening the locking screw (7) (see page 5). After inserting the second diaphyseal screw the screw guide is removed and the clamp cover definitively tightened.

11. The proximal screws are inserted first, and the screws are inserted in the respective fixed screw seats in the posterior clamp of the fixator, depending upon the width of the femoral neck. A screw guide, with the 6 mm trocar, is inserted into the posterior clamp seat of the respective screw guide seat, through a second incision down to the lateral aspect of the femur. Its position is adjusted according to shape of the femoral neck, and ideally so that it is slightly convergent with respect to the long axis. The trocar is then replaced by the second locking head, and its position confirmed under image intensification. After positioning the posterior clamp 1 cm from the skin, its cover is tightly held.
12. The second femoral neck screw is inserted in the same manner as the first.
13. The clamp is locked in this position by tightening the locking screw (7) (see page 5). After inserting the second diaphyseal screw the screw guide is removed and the clamp cover definitively tightened.

14. Although the XCaliber bone screws are self-drilling, in diaphyseal bone pre-drilling is recommended, using a 4.8 mm drill bit when the bone is hard, where the bone quality is poor a 2.4 mm drill bit should be used. The pilot hole is drilled using the correct drill guide, and a 260/40 XCaliber screw inserted until it is just protruding from the second cortex. After insertion, the screw guide is removed and the clamp cover definitively tightened.

15. The bone screws should now be cut flush with the bone screw seat cover to the clamps, leaving about 4 mm of screw shank protruding from the fixator, and the cut ends protected with screw caps. The arms of the cutter should be extended for greater efficiency, and the outer end of the screw head to prevent it causing injury.

16. The clamp is locked in this position by tightening the locking screw (7) (see page 5). After inserting the second diaphyseal screw the screw guide is removed and the clamp cover definitively tightened.

17. At the end of the procedure, confirm that the fracture is reduced, the osseous screw tips are central in the head in the lateral view and about 10 mm before the articular surface, and the diaphyseal screws fully engage both cortices. All locking screws are finally tightened using the long arm of the Allen wrench. The fixator should be about 20 mm from the skin to allow for pin care. The screws should be checked with the bone screws, their tips are convergent with the clamps, leaving about 4 mm of screw shank protruding from the fixator, and the cut ends protected with screw caps. The arms of the cutter should be extended for greater efficiency, and the outer end of the screw head to prevent it causing injury.

18. Traction is then discontinued, and fixation and extension of the hip and knee performed to make sure that there is no thinning of the skin around the bone screws, if necessary making releasing incisions. Drains are now applied around the pins to allow for gentle compression to stabilize the skin and help prevent haematoma formation. The dressings may be soaked before application in a non-irritant antiseptic if desired.

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