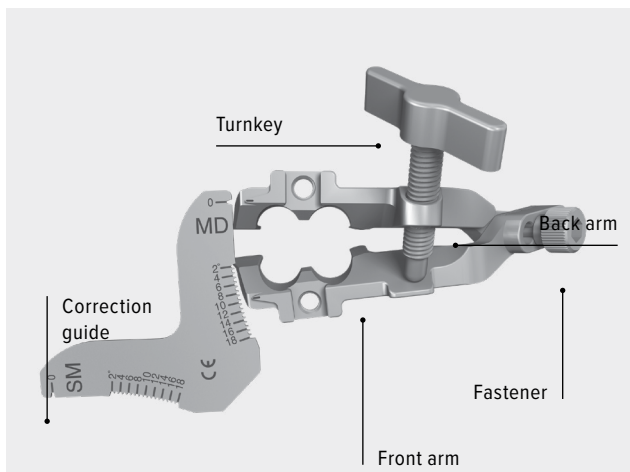


Technical Overview of Opening the Osteotomy With the iBalance® HTO Opening Jack

Overview

The iBalance HTO opening jack is used to open the completed osteotomy to the desired correction angle. This should be done slowly to allow the cortical and cancellous trabecular microstructures to alleviate stress and aid in the prevention of macrofracture of the lateral cortex. The iBalance HTO opening jack consists of two arms (front and back), a jack turnkey, a fastener, and a correction guide (Figure 1).

Figure 1. iBalance HTO opening jack

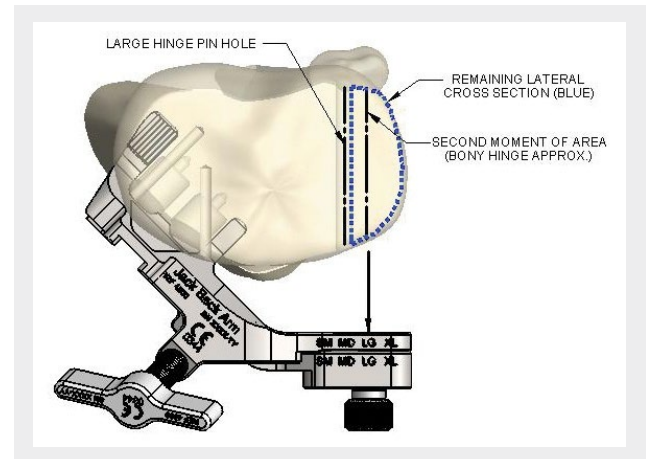


How It Works

Assemble the front and back arms by using the fastener to set the rotation access that corresponds to tibial width (Figure 2). Use the size designated in preoperative planning to choose the appropriate fastener location on the opening jack. Tighten the fastener securely to the back arm, leaving the front arm to create an axis around which to open the osteotomy. This axis corresponds to the approximate second moment of area of the remaining lateral cross section of bone (see the blue dashed line on Figure 2). The opening jack's design is intended to facilitate maneuvering around the bending axis of the remaining bony hinge (just slightly lateral to the prepared hinge pin hole).

Assemble the turnkey and insert it into the back arm so the hemispherical end rests on the front arm's load-bearing surface, and then rotate the turnkey to provide the mechanical force necessary for distraction.

Figure 2. The iBalance HTO opening jack is adjustable to individual tibia size and opens the osteotomy around the theoretical bending axis of the bony hinge



Insert the paddles of the front and back arms into the osteotomy and align the keyholes on the jack with the prepared keyholes on the tibia.

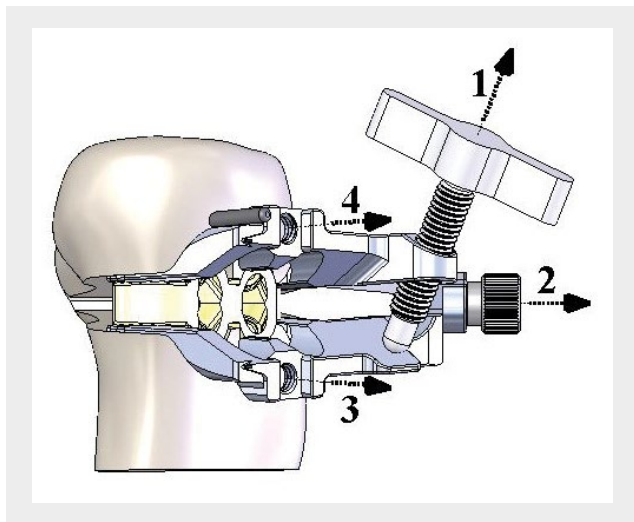
The correction guide and opening jack together function as a reference for the approximate osteotomy wedge angle (within $\pm 2^\circ$ of typical tolerance) and as a support structure for the osteotomy during insertion of the iBalance HTO implant.

The correction guide is intended to provide the surgeon with a progress reference as the opening jack is slowly opened from 0° to the prescribed correction angle (determined during preoperative planning). The correction guide is reliable to within $\pm 2^\circ$ and should be used only as an approximation due to normal variation in bone stiffness and small variations in the iBalance HTO opening jack system itself.

After the prescribed correction angle is achieved, open the opening jack an additional 2° - 3° to allow passage of the implant past the paddles. For example, if the desired correction angle is 11° , open the opening jack until the correction guide reads 13° - 14° . The "over" opening is required because the paddle features on the opening jack are configured between the implant and the osteotomy surfaces. After completing the distraction, place the iBalance HTO implant into the osteotomy through the opening jack and the prepared keyholes.

Once the iBalance® HTO implant is seated, disassemble the opening jack piecewise, and remove it from the osteotomy site. Ensure that the implant remains seated while removing the components. Remove the turnkey first, followed by the fastener, front arm, and back arm.

Figure 3. Sequence for the iBalance HTO opening jack



Begin the fixation of the iBalance HTO implant as detailed by the surgical technique guide.

Designed to completely open and support osteotomy surfaces during the insertion of the iBalance HTO implant, the opening jack plays an important role in the overall iBalance HTO implant system.¹ It can also be used as a reference to monitor progressive opening of the osteotomy.

Reference

1. Arthrex, Inc. Data on file (ER-1220076). Naples, FL; 2009.