



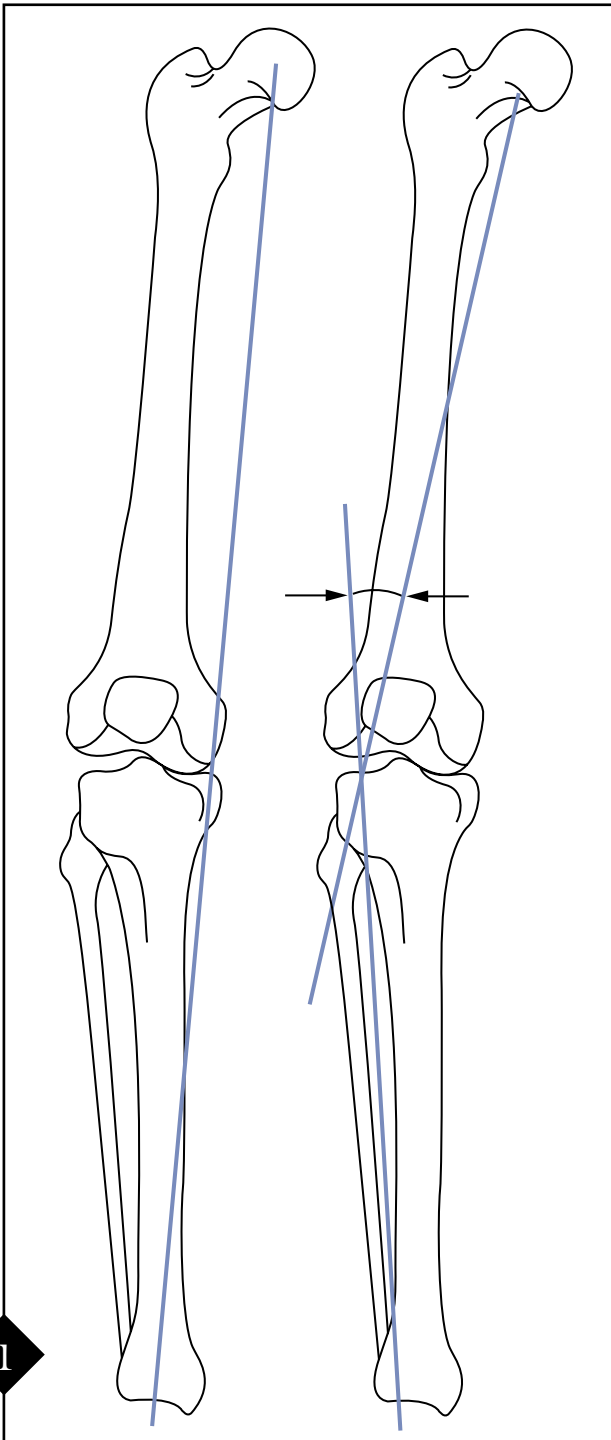
Tibial & Femoral Opening Wedge Osteotomy System

Surgical Technique



# Opening Wedge Osteotomy

## Tibial & Femoral Opening Wedge Osteotomy



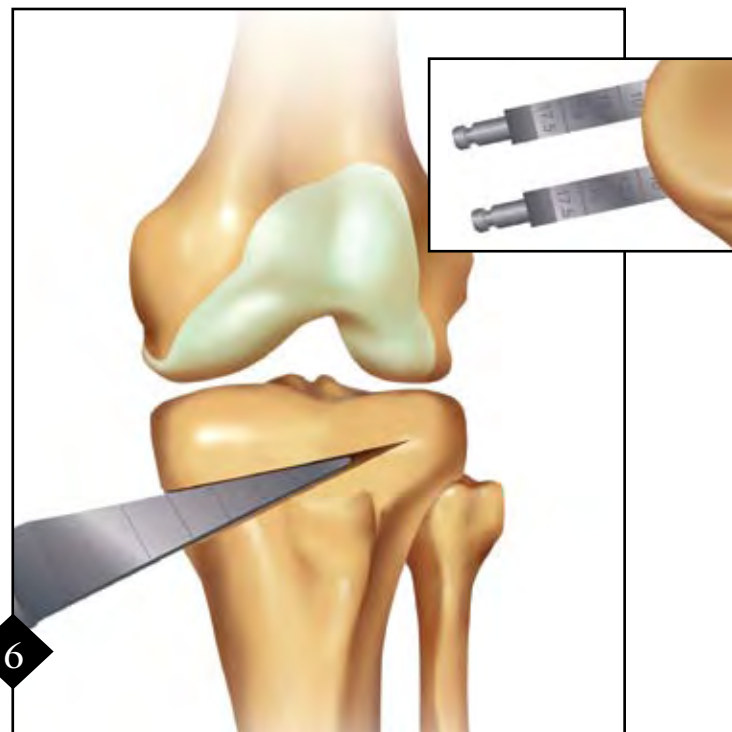
1 Using the full-length, standing A/P radiograph, a line is drawn from the center of the femoral head to the center of the tibial-talar joint. This demonstrates the patient's mechanical axis. Another line is drawn from the center of the femoral head to a point midway\* in the lateral knee joint. A final line is drawn from the center of the tibial-talar joint to the same point in the lateral knee joint. The angle formed by the intersection of these two lines determines the degree of correction required to return the patient's mechanical axis to the point of intersection on the lateral side. Prior to final fixation, the alignment will be verified by external examination and fluoroscopy.

\*This point is located at 62.5% of the width of the proximal tibia (i.e., 80 mm [width of proximal tibia] x .625 = 50 mm)



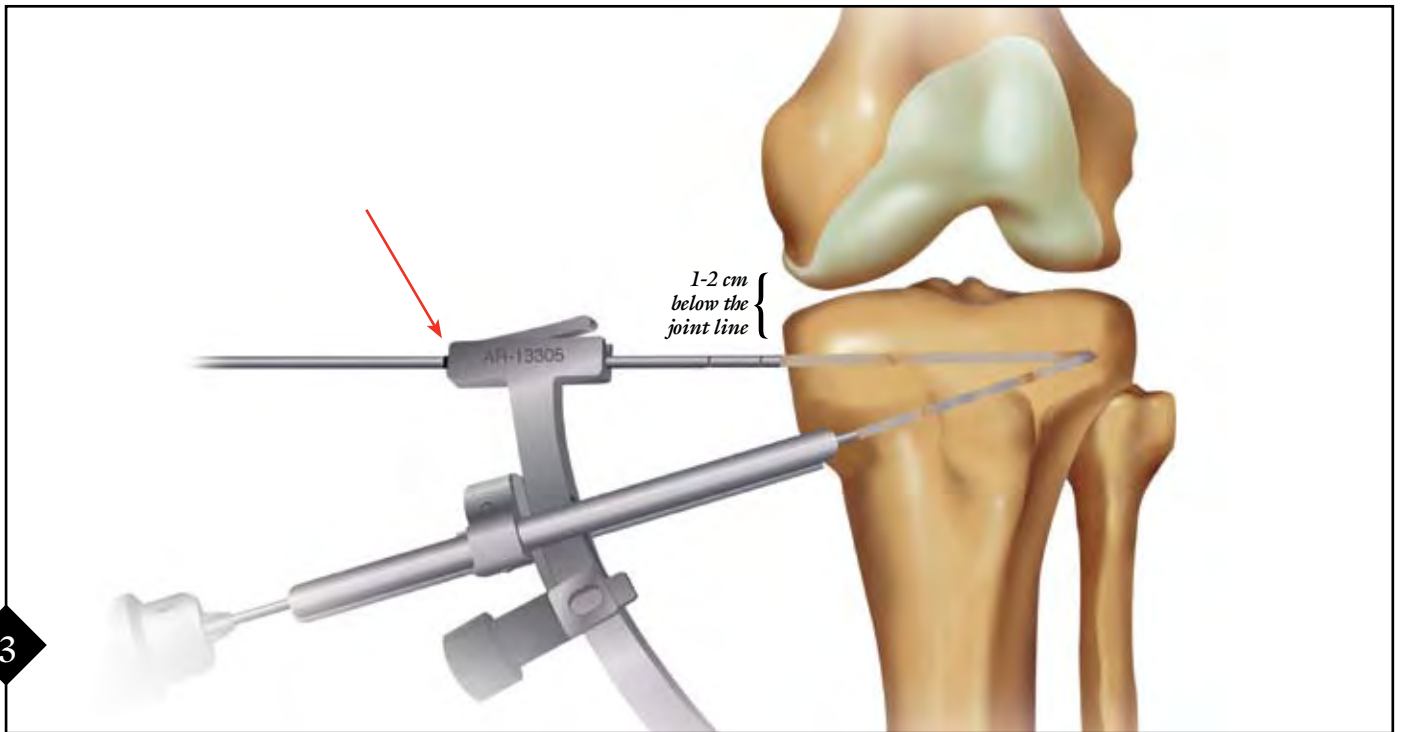
2

Prior to the osteotomy, a diagnostic arthroscopy is performed to verify the status of the articular cartilage and menisci. Any necessary debridement and resection is carried out at this time. Focal defects in the articular surface may be addressed using the Osteochondral Autograft Transfer System (OATS®).



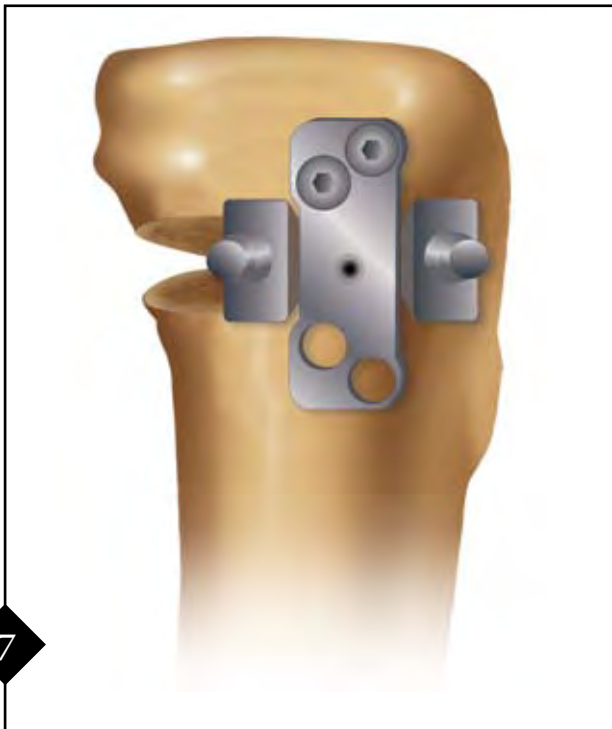
6

The Osteotome Jack is inserted into the cut to gently open the osteotomy. The size of correction achieved can be determined using the Wedge Trial for HTO. Or the Osteotomy Wedge may be inserted and driven slowly with a mallet to the predetermined correction. The mm marks may be read on the wedge tines. The handle is removed and the tines left in place. Bone graft may be packed in the space between the tines.



3

The Osteotomy Guide Pin, 3.0 mm, is inserted into the tibia (medial to lateral) and is drilled within 1 cm of the lateral cortex. The Osteotomy Guide Assembly is inserted onto the guide pin so that the laser line on the pin aligns with the back of the Guide Assembly (as shown above). The Parallel Guide Sleeve Assembly is inserted onto the Osteotomy Guide Assembly. The Parallel Guide Sleeve Assembly should be rotated to reproduce the existing A/P slope of the tibial plateau. Using the adjustment knob, the angle of the guide can be adjusted so the distal pins will enter the proximal tibia above the tibial tubercle. The adjustment knob is now tightened. Two Osteotomy Guide Pins, 2.4 mm, are drilled through the drill sleeves within 1 cm of the lateral cortex. If the position is acceptable, the guide and the 3.0 mm Guide Pin (placed transversely) must be removed.



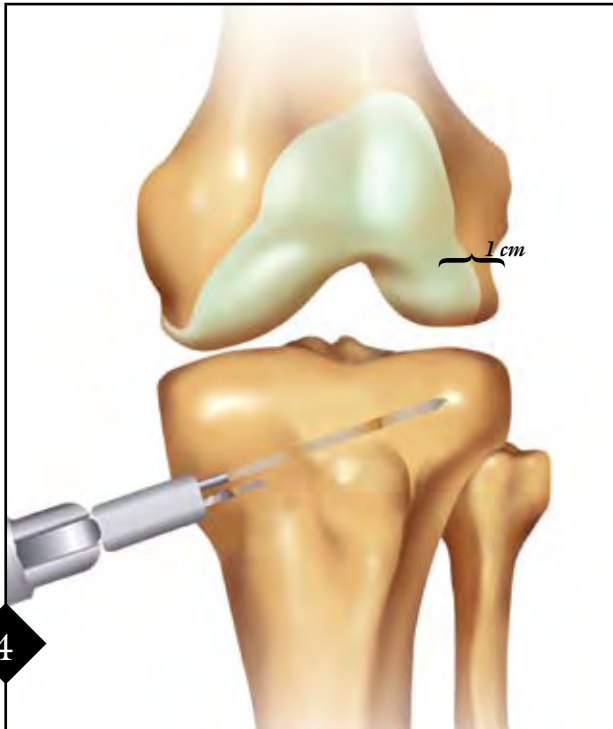
7

The Tibial Opening Wedge Osteotomy Plate is then inserted between the tines. The plate routinely sits just anterior to the medial collateral ligament. Two stainless steel 6.5 mm cancellous screws are fixed proximally.

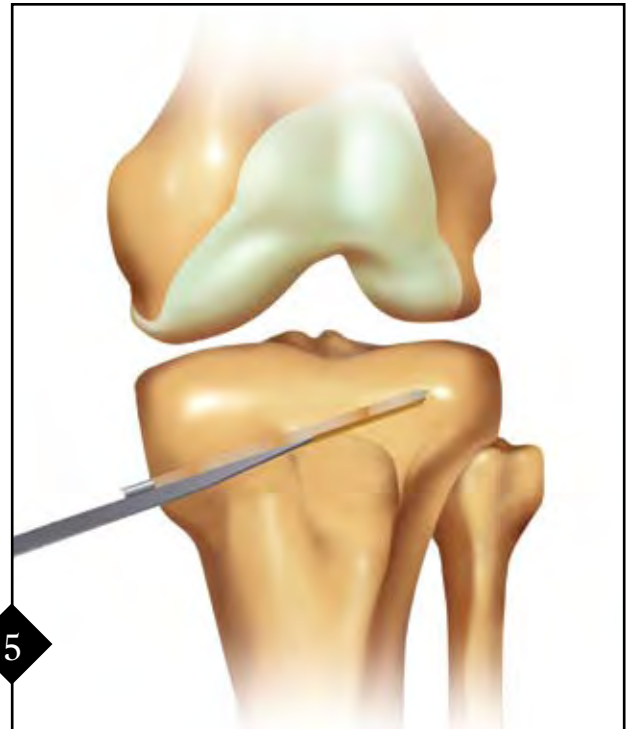


8

Remove the tines and close the osteotomy down onto the plate tooth ensuring optimum bone-to-tooth contact. Fix distally with two 4.5 mm cortical screws. Following plate fixation, allograft or autograft bone is inserted into the anterior and posterior aspect of the defect.



4  
The Cutting Guide is positioned over the remaining pins. It is secured to the tibia by driving the headed pin into the central cannulation of the guide. An oscillating saw positioned against the inferior surface of the cutting guide is used to cut the tibial cortex medially, anteriorly and posteriorly to within 1 cm of the lateral cortex.



5  
The Osteotome Handle and Blades, available in widths of 10, 25 and 35 mm, are used to complete the osteotomy. The “breakaway” Guide Pins are left in place with the Osteotome used inferiorly. Fluoroscopic confirmation should be checked repeatedly throughout the cutting process.



9  
Final fixation of the Tibial Opening Wedge Osteotomy. The knee is dressed and placed in a post-op hinged brace. Passive range of motion is begun immediately with a CPM machine. Ambulation is restricted to non-weight-bearing with crutches. HATriC™ bone substitute is used to fill the osteotomy.



As a comparison, the Distal Femoral Opening Wedge Osteotomy utilizes the same technique principles as the tibial system. Specifically designed femoral plates take into account the anatomical differences between the distal femur and proximal tibia.

### **Opening Wedge Osteotomy System Set (AR-13305S):**

|  |             |
|--|-------------|
| Osteotomy Wedge  | AR-13300    |
| Osteotome Handle                                       | AR-13301    |
| Osteotome Blades, 10 mm                                | AR-13302-10 |
| Osteotome Blades, 25 mm                                | AR-13302-25 |
| Osteotome Blades, 35 mm                                | AR-13302-35 |
| Parallel Guide Sleeve Body                             | AR-13304-1  |
| Parallel Guide Sleeve, qty. 2                          | AR-13304-2  |
| Osteotomy Guide Assembly                               | AR-13305    |
| Osteotomy Cutting Guide                                | AR-13306-01 |
| Osteotomy Cutting Guide Pin                            | AR-13306-02 |
| Alignment Rod  | AR-13308    |
| Femoral Osteotomy Retractor                            | AR-13309    |
| Radiolucent Retractor                                  | AR-13310    |
| Universal Handle Extractor                             | AR-13314    |
| Cutting Guide for HTO                                  | AR-13315    |
| Bone Graft Tamp  | AR-13317    |
| Application Bar for HTO Plates                         | AR-13318    |
| Drill Guide for HTO                                    | AR-13320    |
| Drill Guide for HTO Titanium Plates                    | AR-13321    |
| Bending Irons for HTO Plates, qty. 2                   | AR-13322    |
| Depth Gauge for Osteotome Jack                         | AR-13323G   |
| Osteotome Jack, 25 mm                                  | AR-13323-25 |
| Osteotome Jack, 35 mm                                  | AR-13323-35 |
| Wedge Trial for HTO                                    | AR-13324    |
| A/P Sloped Osteotomy Wedge Trial, large                | AR-13325L   |
| A/P Sloped Osteotomy Wedge Trial, small                | AR-13325S   |
| Screwdriver, 3.5 mm hex                                | AR-13326    |
| Screwdriver, 90°, 3.5 mm hex                           | AR-13326-90 |
| Locking Guide for HTO Titanium Plates                  | AR-13327    |
| Depth Gauge, large                                     | AR-4167     |
| Opening Wedge Osteotomy System<br>Instrumentation Case | AR-13307    |
| Storage Case for HTO Plates                            | AR-13307P   |

### **Accessories:**

|   |              |
|---|--------------|
| Patellar Tendon Retractor                         | AR-13312     |
| Medial Retractor for HTO                          | AR-13313     |
| Osteotomy Guide Pins, 2.4 mm, qty. 6, "breakaway" | AR-13303-2.4 |
| Osteotomy Guide Pins, 3 mm, qty. 6                | AR-13303-3.0 |

### **Osteotomy Plates:**

|  |                 |
|--|-----------------|
| Tibial Opening Wedge Osteotomy Plate, 3.0 mm       | AR-13200-03.0   |
| Tibial Opening Wedge Osteotomy Plate, 5.0 mm       | AR-13200-05.0   |
| Tibial Opening Wedge Osteotomy Plate, 7.5 mm       | AR-13200-07.5   |
| Tibial Opening Wedge Osteotomy Plate, 9.0 mm       | AR-13200-09.0   |
| Tibial Opening Wedge Osteotomy Plate, 10 mm        | AR-13200-10.0   |
| Tibial Opening Wedge Osteotomy Plate, 11 mm        | AR-13200-11.0   |
| Tibial Opening Wedge Osteotomy Plate, 12.5 mm      | AR-13200-12.5   |
| Tibial Opening Wedge Osteotomy Plate, 15 mm        | AR-13200-15.0   |
| Tibial Opening Wedge Osteotomy Plate, 17.5 mm      | AR-13200-17.5   |
| Tibial A/P Sloped Osteotomy Plate, 5.0 mm          | AR-13200PA-05.0 |
| Tibial A/P Sloped Osteotomy Plate, 7.5 mm          | AR-13200PA-07.5 |
| Tibial A/P Sloped Osteotomy Plate, 7.5 mm          | AR-13200PA-09.0 |
| Tibial A/P Sloped Osteotomy Plate, 10 mm           | AR-13200PA-10.0 |
| Tibial A/P Sloped Osteotomy Plate, 11 mm           | AR-13200PA-11.0 |
| Tibial A/P Sloped Osteotomy Plate, 12.5 mm         | AR-13200PA-12.5 |
| Tibial A/P Sloped Osteotomy Plate, 15 mm           | AR-13200PA-15.0 |
| Tibial A/P Sloped Osteotomy Plate, 17.5 mm         | AR-13200PA-17.5 |
| Distal Tibial Opening Wedge Osteotomy Plate, 5 mm  | AR-13200D-05    |
| Distal Tibial Opening Wedge Osteotomy Plate, 6 mm  | AR-13200D-06    |
| Distal Tibial Opening Wedge Osteotomy Plate, 7 mm  | AR-13200D-07    |
| Distal Tibial Opening Wedge Osteotomy Plate, 8 mm  | AR-13200D-08    |
| Distal Tibial Opening Wedge Osteotomy Plate, 9 mm  | AR-13200D-09    |
| Distal Tibial Opening Wedge Osteotomy Plate, 10 mm | AR-13200D-10    |
| Femoral Opening Wedge Osteotomy Plate, 5.0 mm      | AR-13100-05.0   |
| Femoral Opening Wedge Osteotomy Plate, 7.5 mm      | AR-13100-07.5   |
| Femoral Opening Wedge Osteotomy Plate, 9 mm        | AR-13100-09     |
| Femoral Opening Wedge Osteotomy Plate, 10 mm       | AR-13100-10.0   |
| Femoral Opening Wedge Osteotomy Plate, 11 mm       | AR-13100-11     |
| Femoral Opening Wedge Osteotomy Plate, 12.5 mm     | AR-13100-12.5   |
| Femoral Opening Wedge Osteotomy Plate, 15 mm       | AR-13100-15.0   |
| Femoral Opening Wedge Osteotomy Plate, 17.5 mm     | AR-13100-17.5   |

### **Recommended Bone Graft Substitute:**

|   |            |
|---|------------|
| OSferion Osteotomy Wedge, 7 mm x 30 mm  | AR-13370-1 |
| OSferion Osteotomy Wedge, 10 mm x 30 mm | AR-13370-2 |
| OSferion Osteotomy Wedge, 12 mm x 35 mm | AR-13370-3 |
| OSferion Osteotomy Wedge, 15 mm x 35 mm | AR-13370-4 |

*This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's Directions For Use.*

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