Opening Wedge Osteotomy

Surgical Technique

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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Ordering Information

Osteotomy Set (AR-13330) includes:

- Rationale/Army/Navy Retractors, qty. 2 AR-1330
- Osteotomy Wedge AR-13300
- Osteotomy Handle AR-13301
- Osteotomy Guide Pins, 2.4 mm, qty. 4 AR-13303-2.4
- Femoral Osteotomy Wedge Handle AR-13304
- Screwdriver, 3.5 mm Hex AR-13326
- Osteotomy Plate Bender AR-13321
- Femoral Osteotomy Plate Drill Guides AR-13322
- Osteotomy Jack AR-13323
- Flexible Osteotomy Blades AR-13324
- Key Elevator, 3/4" AR-13327
- PEEK® Power HTO Plate Bone Spreader AR-13411-02
- Posterior Elevator AR-13411-02
- Posterior Elevator AR-13411-02
- Osteotomy Instrument Case AR-13500C

Disposables

- Flexible Osteotomy Blade, 10 mm AR-13302F-10
- Flexible Osteotomy Blade, 25 mm AR-13302F-25
- Flexible Osteotomy Blade, 35 mm AR-13302F-35

Osteotomy Plates

- ContourLock Femoral Osteotomy Plate, right, S/M AR-13110R-01
- ContourLock Femoral Osteotomy Plate, right, L/XL AR-13110R-02
- ContourLock Femoral Osteotomy Plate, left, S/M AR-13110L-01
- ContourLock Femoral Osteotomy Plate, left, L/XL AR-13110L-02

Titanium Screws

- HTO Plate Screw, 4.5 mm x (26 mm–60 mm), cortical, 2 mm increments AR-13380-26–60
- HTO Plate Screw, 6.5 mm x (35 mm–70 mm), cancellous, 5 mm increments AR-13280-35–70

Recommended Bone Graft Substitutes

- Arthrex Quickset, 5 cc Kit ABS-3005
- Arthrex Quickset, 8 cc Kit ABS-3008
- Arthrex Quickset, 16 cc Kit ABS-3016
- Osteotomy Osteotomy Wedge, 7 mm x 30 mm AR-13370-1
- Osteotomy Osteotomy Wedge, 10 mm x 30 mm AR-13370-2
- Osteotomy Osteotomy Wedge, 12 mm x 35 mm AR-13370-3
- Osteotomy Osteotomy Wedge, 15 mm x 35 mm AR-13370-4
Start the osteotomy with a sagittal saw rupturing the lateral cortical bone. Utilize Flexible Osteotome Blades (available in various widths) to finish the osteotomy to the appropriate depth. Approximately 1 cm of medial bone should be preserved to minimize the risk of cortical hinge fracture.

Insert a 2.4 mm break-away osteotomy guide pin under fluoroscopic control approximately 15 mm proximal to the femoral trochlea angled obliquely towards the medial epicondyle. An optional second pin may be placed parallel to the first under fluoroscopic control to provide stability.

Insert the Osteotomy Jack to open the osteotomy to the desired height. This can be measured directly with the wedge trial. The osteotomy should be opened down to preserve the medial cortex. Once the desired amount of correction is achieved, the Osteotomy Jack can be removed.

Using the full-length, standing A/P radiograph, select a target alignment point at the center of the knee joint.* A line is drawn from the center of the femoral head to a point in the center of the knee joint. A second line is drawn from the center of the tibial-talar joint to the same point in the center of the knee joint. The proximal 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. Prior to final fixation, the alignment will be verified by external examination and fluoroscopy.

*For a varus-producing, lateral opening wedge femoral osteotomy, this point is located between the 50-47% intersection of the proximal tibial width from the medial side.

Select the appropriate size ContourLock Femoral Osteotomy Plate based on treatment side and amount of correction (S/M for corrections of 0-10 mm and L/XL for corrections of 10-20 mm). Position the plate between the tines of the Osteotomy Jack in a suitable position.

Three 6.5 mm cancellous screws are inserted distal to the osteotomy until flush with the plate. These screws provide additional stability to the osteotomy site. Utilize conventional fluoroscopic technique for predrilling and depth device measurement to determine appropriate length and position.

Arthrex Quickset™, an injectable macroporous calcium phosphate, may be utilized to provide additional stability to the osteotomy site.

Three 4.5 mm cortical HTO Plate Screws proximal to the osteotomy until flush with the plate. Begin with the most distal available fixation hole and move progressively. Remove the Osteotomy Jack once the plate is securely fixed.

A fourth optional fixed-angle locking screw may be inserted at the discretion of the treating surgeon. Screw length should be determined in the conventional technique similar to the other cancellous screws.

Arthrex Quinset™, an injectable macroporous calcium phosphate, may be utilized to provide additional stability to the osteotomy site.
Start the osteotomy with a sagittal saw rupturing the lateral cortical bone. Utilize Flexible Osteotome Blades (available in various widths) to finish the osteotomy to the appropriate depth. Approximately 1 cm of medial bone should be preserved to minimize the risk of cortical hinge fracture.

Insert a 2.4 mm break-away osteotomy guide pin under fluoroscopic control approximately 15 mm proximal to the femoral trochlea, angled obliquely towards the medial epicondyle. An optional second pin may be placed parallel to the first under fluoroscopic control to provide stability.  

Using the full-length, standing A/P radiograph, select a target alignment point at the center of the knee joint.* A line is drawn from the center of the femoral head to a point in the center of the knee joint. A second line is drawn from the center of the tibial-talar joint to the same point in the center of the knee joint. The proximal 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. Prior to fixation, the alignment will be verified by external examination and fluoroscopy.

For a varus-producing, lateral opening wedge femoral osteotomy, this point is located between the 50-47% intersection of the proximal tibial width from the medial side.

Select the appropriate size ContourLock Femoral Osteotomy Plate based on treatment side and amount of correction (S/M for corrections of 0-10 mm and L/XL for corrections of 10-20 mm). Position the plate between the tines of the Osteotomy Jack in a suitable position.

The Osteotomy Jack can be inserted into the osteotomy to support the correction while optional Offset osteotomy wedges are inserted and the plate is positioned.

Screw by inserting up to four 4.5 mm cortical ITTO Plate Screws proximal to the osteotomy until flush with the plate. Begin with the most distal available fracture hole and move proximally. Remove the Osteotomy Jack once the plate is securely fixed.

Three 6.5 mm cancellous screws are inserted distal to the osteotomy until flush with the plate. Unlike conventional fluoroscopic technique for providing, and depth device measurement to determine appropriate length and position.

A fourth optional fixed-angle locking screw may be inserted distally if additional fixation is deemed appropriate. Screw length should be determined in the conventional technique similar to the other cancellous screws.

Arthrex Quickset™, an injectable macroporous calcium phosphate, may be utilized to provide additional stability to the osteotomy site.

Follow by inserting up to four 4.5 mm cortical ITTO Plate Screws proximal to the osteotomy until flush with the plate. Begin with the most distal available fracture hole and move proximally. Remove the Osteotomy Jack once the plate is securely fixed.
Start the osteotomy with a sagittal saw rupturing the lateral cortical bone. Utilize Flexible Osteotome Blades (available in various widths) to finish the osteotomy to the appropriate depth. Approximately 1 cm of medial bone should be preserved to minimize the risk of cortical hinge fracture.

Insert a 2.4 mm break-away osteotomy guide pin under fluoroscopic control approximately 15 mm proximal to the femoral trochlea angled obliquely towards the medial epicondyle. An optional second pin may be placed parallel to the first under fluoroscopic control to provide stability.

Using the full-length, standing A/P radiograph, select a target alignment point at the center of the knee joint.* A line is drawn from the center of the femoral head to a point in the center of the knee joint. A second line is drawn from the center of the tibial-talar joint to the same point in the center of the knee joint. The proximal 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. Prior to final fixation, the alignment will be verified by external examination and fluoroscopy.

*For a varus-producing, lateral opening wedge femoral osteotomy, this point is located between the 50-47% intersection of the proximal tibial width from the medial side.

Select the appropriate size ContourLock Femoral Osteotomy Plate based on treatment side and amount of correction (S/M for corrections of 0-10 mm and L/XL for corrections of 10-20 mm). Position the plate between the tines of the Osteotomy Jack in a suitable position.

Select the appropriate size ContourLock Femoral Osteotomy Plate based on treatment side and amount of correction (S/M for corrections of 0-10 mm and L/XL for corrections of 10-20 mm). Position the plate between the tines of the Osteotomy Jack in a suitable position.

The Osteotomy Jack can be inserted into the osteotomy to support the correction while optional Osteotomy wedges are inserted and the plate is positioned.

Screw by inserting up to four 4.5 mm cortical HTO Plate Screws proximal to the osteotomy until flush with the plate. Begin with the most distal available fixation hole and move proximally. Remove the Osteotomy Jack once the plate is securely fixed.

Three 6.5 mm cancellous screws are inserted distal to the osteotomy until flush with the plate. Unlike conventional fluoroscopic technique for positioning, and depth device measurement to determine appropriate length and position.

A fourth optional fixed-angle locking screw may be inserted distally if additional fixation is deemed appropriate. Screw length should be determined in the conventional technique similar to the other cancellous screws.

Arthrex Quickset™, an injectable macroporous calcium phosphate, may be utilized to provide additional stability to the osteotomy site.

Femoral Opening Wedge Osteotomy System with ContourLock Femoral Osteotomy Plate

Surgical Technique
Opening Wedge Osteotomy

Femoral Opening Wedge Osteotomy System
with ContourLock Femoral Osteotomy Plate

Surgical Technique

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Ordering Information

Osteotomy Set (AR-13330W) includes:

- Radiolucent Army/Navy Retractors, qty. 2 AR-1330
- Osteotomy Wedge AR-13300
- Osteotomy Handle AR-13301
- Osteotomy Guide Pins, 2.4 mm, qty. 4 AR-13303-2.4
- Femoral Osteotomy Retractor AR-13309
- Osteotomy Guide Pins, 3.5 mm, qty. 4 AR-13310
- Osteotomy Plate Benders AR-13331
- Femoral Osteotomy Plate Drill Guides AR-13332
- Osteotomy Jack AR-13335
- Key Elevator, 1/4” AR-13336
- PEEK® Power HTO Plate Bone Spreader AR-13337
- Posterior Elevator AR-13411-02
- Tibia Plate Jack AR-13338
- Depth Device, large AR-4167
- Osteotomy Instrument Case AR-13330C

Disposables

- Flexible Osteotome Blade, 10 mm AR-13302-10
- Flexible Osteotome Blade, 25 mm AR-13302-25
- Flexible Osteotome Blade, 35 mm AR-13302-35

Osteotomy Plates

- ContourLock Femoral Osteotomy Plate, right, 5/8 AR-13110R-01
- ContourLock Femoral Osteotomy Plate, right, 7/8 AR-13110L-01
- ContourLock Femoral Osteotomy Plate, left, 5/8 AR-13110L-02
- ContourLock Femoral Osteotomy Plate, left, 7/8 AR-13110L-02

Titanium Screws

- HTO Plate Screw, 4.5 mm x (26 mm–60 mm), cortical, 2 mm increments AR-13380-26–60
- HTO Plate Screw, 6.5 mm x (35 mm–70 mm), cancellous, 5 mm increments AR-13280-35–70

Recommended Bone Graft Solutions

- Arthrex Quickset, 5 cc Kit ARS-3005
- Arthrex Quickset, 8 cc Kit ARS-3008
- Arthrex Quickset, 16 cc Kit ARS-3016
- 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 30 mm AR-13370-3
- Osferion Osteotomy Wedge, 15 mm x 30 mm AR-13370-4
### Surgical Technique

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.

### Ordering Information

**Osteotomy Set (AR-13330W) includes:**
- Femoral Opening Wedge Osteotomy System with ContourLock Femoral Osteotomy Plate
- Universal Handle Fracture
- Curetting Guide for HTO
- Bone Graft Large
- Femoral Osteotomy Retractor
- Patella Tendon Retractor
- Medial Retractor for HTO
- Universal Handle Extractor
- Cutting Guide for HTO
- Osteotomy Wedge
- Osteotomy Handle
- Osteotomy Guide Pins, 2.4 mm, qty. 4
- Femoral Osteotomy Plate Bender
- Femoral Osteotomy Plate Drill Guide
- Flexible Osteotomy Wedge
- Key Elevator, 3/4"
- ibalance® TKA, LMR Hex Driver
- Depth Device, large
- Osteotomy Instrument Case
- Disposable:
  - Flexible Osteotome Blade, 10 mm
  - Flexible Osteotome Blade, 25 mm
  - Flexible Osteotome Blade, 35 mm
- ContourLock Femoral Osteotomy Plate, right, S/M
- ContourLock Femoral Osteotomy Plate, right, L/XL
- ContourLock Femoral Osteotomy Plate, left, S/M
- ContourLock Femoral Osteotomy Plate, left, L/XL
- Titanium Screws:
  - HTO Plate Screw, 4.5 mm x (26 mm–60 mm), cortical, 2 mm increments
  - HTO Plate Screw, 6.5 mm x (35 mm–70 mm), cancellous, 5 mm increments
- Recommended Bone Graft Solutions:
  - Arthrex Quickset, 5 cc Kit
  - Arthrex Quickset, 8 cc Kit
  - Arthrex Quickset, 16 cc Kit
  - OSferion Osteotomy Wedge, 7 mm x 30 mm
  - OSferion Osteotomy Wedge, 10 mm x 30 mm
  - OSferion Osteotomy Wedge, 12 mm x 30 mm
  - OSferion Osteotomy Wedge, 15 mm x 30 mm


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**Femoral Opening Wedge Osteotomy System with ContourLock Femoral Osteotomy Plate**

**Surgical Technique**

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**Disposables**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>Flexible Osteotome Blade, 10 mm</td>
<td>AR-13302F-10</td>
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<tr>
<td>Flexible Osteotome Blade, 25 mm</td>
<td>AR-13302F-25</td>
</tr>
<tr>
<td>Flexible Osteotome Blade, 35 mm</td>
<td>AR-13302F-35</td>
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**Osteotomy Plates**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>ContourLock Femoral Osteotomy Plate, right, S/M</td>
<td>AR-13110R-01</td>
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<tr>
<td>ContourLock Femoral Osteotomy Plate, right, L/XL</td>
<td>AR-13110R-02</td>
</tr>
<tr>
<td>ContourLock Femoral Osteotomy Plate, left, S/M</td>
<td>AR-13110L-01</td>
</tr>
<tr>
<td>ContourLock Femoral Osteotomy Plate, left, L/XL</td>
<td>AR-13110L-02</td>
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**Titanium Screws**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>HTO Plate Screw, 4.5 mm x (26 mm–60 mm), cortical, 2 mm increments</td>
<td>AR-13800-26-60</td>
</tr>
<tr>
<td>HTO Plate Screw, 6.5 mm x (35 mm–70 mm), cancellous, 5 mm increments</td>
<td>AR-13200-35-70</td>
</tr>
</tbody>
</table>

**Recommended Bone Graft Solutions**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Code</th>
</tr>
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<tbody>
<tr>
<td>Arthrex Quickset, 5 cc Kit</td>
<td>ARS-395</td>
</tr>
<tr>
<td>Arthrex Quickset, 8 cc Kit</td>
<td>ARS-398</td>
</tr>
<tr>
<td>Arthrex Quickset, 16 cc Kit</td>
<td>ARS-396</td>
</tr>
<tr>
<td>OSferion Osteotomy Wedge, 7 mm x 30 mm</td>
<td>AR-13370-1</td>
</tr>
<tr>
<td>OSferion Osteotomy Wedge, 10 mm x 30 mm</td>
<td>AR-13370-2</td>
</tr>
<tr>
<td>OSferion Osteotomy Wedge, 12 mm x 30 mm</td>
<td>AR-13370-3</td>
</tr>
<tr>
<td>OSferion Osteotomy Wedge, 15 mm x 30 mm</td>
<td>AR-13370-4</td>
</tr>
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