Spondylolisthesis Reduction Using Universal Spinal System and USS Fracture System

TECHNIQUE GUIDE

SYNTHES® Spine

Original Instruments and Implants of the Association for the Study of Internal Fixation — AO ASIF
Surgical Technique

1  **Insert Schanz screws**
Prepare the L5 and S1 pedicles for screw insertion using the Awl [388.55] and Probe [388.54].
Insert double-threaded Schanz screws [296.750 or 496.750] into the L5 pedicles with the Simple T-Handle [395.38.99].
Insert standard USS screws into the S1 pedicles with the Screw Holder [388.61] and Handle [388.62].

2  **Assemble construct**
Contour 6.0 mm Hard Rods [298.102–106 or 498.102–106] to the desired lumbosacral lordosis.
Place USS Low Profile Fracture Clamps [298.831 or 498.831] on rods. Mount the rods with the clamps to the Schanz screws at L5 and insert caudally into the sacral screws.
Add a Collar [289.011 or 498.011] and Nut [298.003 or 498.003] to the USS screws in S1.
Lock the rods in place by tightening the sacral screws using the Cannulated Socket Wrench [388.701].

3  **Reduce spondylolisthesis**
Thread a USS Reduction Sleeve [388.931] onto each Schanz screw. Fit the Knurled Nut [388.932] onto the hexagonal end of the Reduction Sleeve. Rotate the nuts on both screws simultaneously to gradually reduce the L5 vertebra.
Confirm reduction using radiographic imaging. Anterior support may be necessary in conditions more severe than grade II.

**Important:** Refer to the USS Fracture System Technique Guide and the Universal Spinal System (USS) Technique Guide for complete surgical technique.
4 **Tighten construct**

Remove the Knurled Nut.

Slide the Cannulated Socket Wrench [394.701] over both the Schanz screw and the Reduction Sleeve. Tighten the nut on the fracture clamp to stabilize reduction.

Remove the Reduction Sleeve following tightening of the fracture clamp.

If necessary, compress the construct, using the Compression Forceps [388.42].

Tighten the fracture clamp set screws to fix the position of the clamps.

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5 **Cut Schanz screws**

Using the Bolt Cutter [391.771, 391.78 and 391.79], shear the double-threaded Schanz screws.

*Note: Refer to the Bolt Cutter Head Product Information Sheet for more information on the assembly and use of the Bolt Cutter.*

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6 **Attach transconnector**

Connect rods with a Low Profile Transconnector [297.791–.799 or 497.791–.799] to stabilize the construct.
### Required Sets

Universal Spinal System Rod Instrument Set [107.721]
Universal Spinal System Hook and Screw Instrument Set [107.731]
Universal Spinal System Screw Set [105.822] stainless steel or [107.751] titanium
USS Fracture System Instrument and Implant Set [105.823] stainless steel or [145.823] titanium

### Recommended components for basic construct

#### Implants

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Item</th>
<th>Quantity Needed</th>
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</thead>
<tbody>
<tr>
<td>296.750 or 496.750</td>
<td>6.0 mm Schanz Screw,* double thread, 180 mm</td>
<td>2</td>
</tr>
<tr>
<td>298.831 or 498.831</td>
<td>USS Low Profile Fracture Clamp</td>
<td>2</td>
</tr>
<tr>
<td>As appropriate from set [105.822] or [107.751]</td>
<td>USS Side-Opening Screw</td>
<td>2</td>
</tr>
<tr>
<td>298.011 or 498.011</td>
<td>Collar with grooves</td>
<td>2</td>
</tr>
<tr>
<td>298.003 or 498.003</td>
<td>Nut</td>
<td>2</td>
</tr>
<tr>
<td>298.102–.106 or 498.102–.106</td>
<td>6.0 mm Hard Rods (50–150 mm)</td>
<td>2</td>
</tr>
<tr>
<td>297.791–.799 or 497.791–.799</td>
<td>Low Profile Transconnector</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Instruments

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Item</th>
<th>Quantity Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>388.931</td>
<td>USS Reduction Sleeve*</td>
<td>2</td>
</tr>
<tr>
<td>388.932</td>
<td>USS Knurled Nut*</td>
<td>2</td>
</tr>
</tbody>
</table>

* These items fit in the case for the USS Fracture System Instrument and Implant Set [105.823 or 145.823], but are not standard components. Therefore, these products must also be ordered, in addition to the sets listed above.