Constellation CP System.
A minimally invasive system for use with Cannulated Pangea.
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Image intensifier control
The Constellation CP System allows atraumatic rod and screw insertion for thoracolumbar pedicle fixation. The system consists of a set of instruments designed to be used with the Cannulated Pangea System. Constellation CP is designed to minimize muscle trauma by using a muscle-sparing approach and technique to expose patient anatomy.
Tissue protection—
lateral implant holders

The helical design of the lateral implant holders:
– Allows intermeshing to create a portal in situ
– Provides excellent tissue protection
– Allows maximal visualization in minimal space

Articulating rod introducer

The Constellation rod introducer combines articulating and position braking features that allow controlled rod introduction. The rod introducer is used with specifically designed atraumatic bullet-nosed rods.
Supplemental Posterior Fixation

**Anterior fusion procedures**
The Constellation CP System provides posterior stabilization to augment an ALIF procedure where supplemental posterior instrumentation is desired. The comprehensive instrument set allows atraumatic pedicle screw and rod placement with minimal posterior soft tissue disruption.

**Note:** Please refer to the *Anterior Lumbar Interbody Fusion (ALIF) Technique Guide* for complete instructions on the ALIF approach.

**Lateral fusion procedures**
Constellation CP System can also be used to augment the transpsoas approach when supplemental posterior instrumentation is desired.

**Note:** Please refer to the *Oracle System Technique Guide* for complete instructions on the transpsoas approach.

**Posterior fusion procedures**
The Constellation CP System complements minimally invasive posterior spacer procedures such as minimally invasive oblique, T-PLIF and PLIF through MIRA (Minimally Invasive Retractor Access) retractors. It also allows contralateral atraumatic pedicle screw and rod placement in conjunction with MIRA.

**Notes:** Please refer to the *MIRA Technique Guide* for complete instructions on MIRA use.

Please refer to the following technique guides for complete instructions on the PLIF and T-PLIF approaches: *Oblique Posterior Atraumatic Lumbar (OPAL) Spacer System, Posterior Lumbar Interbody Fusion (PLIF)* or *T-PLIF Spacer Instruments.*
**Stand-alone Posterior Fixation**

Constellation CP can also be used for stand-alone fixation.

Constellation CP can be used for single- and multilevel procedures.
AO Principles

In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation.¹ They are:
– Anatomic reduction
– Stable internal fixation
– Preservation of blood supply
– Early, active mobilization

The fundamental aims of fracture treatment in the limbs and fusion of the spine are the same. A specific goal in the spine is returning as much function as possible to the injured neural elements.²

AO Principles as Applied to the Spine³

Anatomic alignment
Restoration of normal spinal alignment to improve the biomechanics of the spine.

Stable fixation
Stabilization of the spinal segment to promote bony fusion.

Preservation of blood supply
Creation of an optimal environment for fusion.

Early, active mobilization
Minimized damage to the spinal vasculature, dura, and neural elements, which may contribute to pain reduction and improved function for the patient.

². Ibid.
Indications

Indicated for use in skeletally mature patients as a posterior pedicle screw fixation system (T1–S2). Indications include degenerative disc disease, spondylolisthesis, trauma, deformities or curvatures, tumor, stenosis, pseudoarthrosis and failed previous fusion.

Please refer to product insert (GP0001) for complete system description, indications, contraindications and warnings.
1

**Patient positioning**

Position the patient on a radiolucent OR table in the prone position. The OR table should have enough clearance available for a fluoroscopic C-arm to rotate freely for AP, oblique and lateral views, to obtain optimal visualization of the spine. Accurate visualization of the anatomic landmarks and fluoroscopic visualization of the pedicles are imperative for using the Constellation CP System. 2-D or 3-D stereotactic navigation systems may also be used for placement of instrumentation. In the following section, the use of AP and lateral fluoroscopy will be described.

2

**Approach**

**Instrument**

| 03.616.001 Blunt Dissector |

To obtain access to the bony anatomy, a mini-open approach is recommended. The mini-open approach advocates atraumatic blunt dissection of the muscles. A Wiltse or modified Wiltse approach is suggested.4

Using fluoroscopy, locate and mark the lateral borders of the pedicles. This will indicate where the fascial incision should be made. As a general guide, the incision should be made 2 cm–4 cm lateral to the midline. This depends on patient anatomy and actual fluoroscopic location of the pedicles.

**Option 1: Lateral or bilateral skin and fascial incisions**
After determining the surgical trajectory, make an incision in the skin and the fascia of the appropriate size (~30 mm for single-level procedures). Following incision of the fascia, locate the cleavage plane between the multifidus and longissimus muscle groups. Using a Wiltse approach, bluntly dissect between the multifidus and longissimus muscle planes down to the bony anatomy. Careful separation of the muscle planes can yield an avascular dissection. Ensure that adequate dissection is performed to accommodate further instrument and implant placement. The blunt dissector can be used to facilitate dissection of the tissue planes.

**Option 2: Midline skin incision**
A midline skin incision with lateral or bilateral fascial incisions can be used as an alternative.
Prepare the pedicles as described in the *Cannulated Pangea Technique Guide*. The Constellation technique begins after the pedicles are prepared and the K-wires are established.
Insert Screws

4

Insert screws

Instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>03.616.007</td>
<td>Lateral Implant Holders, standard (purple)</td>
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<tr>
<td>03.616.008</td>
<td>Lateral Implant Holders, standard (blue)</td>
</tr>
<tr>
<td>03.616.009</td>
<td>Lateral Implant Holders, standard (green)</td>
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<tr>
<td>or</td>
<td>or</td>
</tr>
<tr>
<td>03.616.017</td>
<td>Lateral Implant Holders, long (purple)</td>
</tr>
<tr>
<td>03.616.018</td>
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</tr>
<tr>
<td>03.616.019</td>
<td>Lateral Implant Holders, long (green)</td>
</tr>
</tbody>
</table>

A. Select lateral implant holders
The lateral implant holders are color-coded to aid in quick selection of the correct holders. The lateral implant holders are available in two lengths: standard (80 mm) and long (110 mm). Estimating the skin to pedicle depth will aid in selection of the correct lateral implant holders.

The long lateral implant holders can be used for patients with skin-to-pedicle depths greater than 80 mm. Figures 1 and 2 show standard length lateral implant holders.

Single-level construct
Selection of two blue, or two green, lateral implant holders allows intermeshing of the helices and provides the greatest access to the bony anatomy, with limited soft tissue intrusion (Figure 1).

Multilevel construct
If treating two levels, a purple lateral implant holder is used with one blue and one green lateral implant holder. The blue and green lateral implant holders are used on the ends of the construct and the purple lateral implant holder is used in between (Figure 2).
4

Insert screws continued

B. Lateral implant holder/screw construct

Instrument

| 03.616.005 | Driver, for Lateral Implant Holders |

To prepare the construct:
1. Open the lateral implant holder by turning the knob until the sleeve is fully retracted, with the screw thread fully exposed (Figure 1).

2. Attach the appropriate Cannulated Pangea pedicle screw to the lateral implant holder. A rolling action will facilitate positioning of the screw. Guide the cuts on the screw head into the clips on the base of the lateral implant holder. Snap the screw into place (Figure 2).

3. Turn the knob on the lateral implant holder until the sleeve is fully seated on the top of the screw, with the upper screw thread no longer exposed (Figure 3).

4. After the knob has been finger-tightened, the driver for lateral implant holders may be used to lightly tighten the knob. Do not over-tighten the knob. (Figure 4).
C. Assemble lateral implant holder and holding sleeve

**Instruments**

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<tr>
<th>Code</th>
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<tr>
<td>03.616.006</td>
<td>Holding Sleeve</td>
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<td>or</td>
<td>Holding Sleeve, long</td>
</tr>
<tr>
<td>03.620.218*</td>
<td>Cannulated StarDrive Screwdriver Shaft, T25</td>
</tr>
<tr>
<td>or</td>
<td>Cannulated StarDrive Screwdriver Shaft, long, T25</td>
</tr>
<tr>
<td>03.620.005*</td>
<td>Ratchet T-Handle with low toggle</td>
</tr>
<tr>
<td>or</td>
<td>Palm Ratchet Handle</td>
</tr>
<tr>
<td>388.654*</td>
<td></td>
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</tbody>
</table>

To assemble the holding sleeve, partially screw the tailpiece into the handle of the holding sleeve. Leave a small space with metal surface visible (Figure 1).

Attach the lateral implant holder/screw construct to the assembled holding sleeve by aligning the knob on the lateral implant holder with the slot on the holding sleeve (Figure 2).

Depress the buttons on the holding sleeve and slide the lateral implant holder into the slot. Release the buttons to capture the lateral implant holder (Figure 3).

*Also available
4

Insert screws continued

C. Assemble lateral implant holder and holding sleeve continued

Depress the tailpiece of the holding sleeve (Figure 4) while inserting the T2S cannulated StarDrive screwdriver shaft through it (Figure 5). Release the tailpiece and slide the holding sleeve assembly back until the tailpiece locks onto the screwdriver shaft (Figure 6).

Before screw insertion, the screwdriver shaft must be engaged in the bone screw. While holding the screw in line with the holding sleeve (Figure 7), turn the tailpiece to advance the screwdriver shaft into the socket of the screw. There should be no toggle in the screw (Figure 8). The screw will rotate when the handle is turned (the holding sleeve should not rotate). A completed assembly is shown in Figure 9.

Note: Do not over-tighten the tailpiece. Doing so will cause the holding sleeve to rotate.
D. Insert screws

Pass the holding sleeve assembly over the K-wire and advance the screw into the pedicle. Fluoroscopy should be used to ensure proper placement. Once the screw has reached the posterior wall of the vertebral body the K-wire may be removed.

The screw should be left slightly proud to maintain mobility of the screw head. Screw height can be adjusted following removal of the holding sleeve.

To disengage the holding sleeve, partially loosen the tailpiece to disengage the screwdriver shaft from the bone screw. Then depress the buttons on the handle of the holding sleeve to disengage it from the lateral implant holder.

The mobility of the screw head should be assessed only after the holding sleeve assembly is disengaged from the lateral implant holder.

Repeat for remaining screws.
E. Orient lateral implant holders
After screw insertion is complete, the lateral implant holders must be properly aligned before rod insertion.

The lateral implant holders feature an etch line (Figure 1) on the closed side of the sleeve. For the cranial screw, orient the etch line cranially. For the caudal screw, orient the etch line caudally. Proper orientation of the lateral implant holders will allow intermeshing of the helical sleeves (Figure 2).
**Introduce Rods**

5

**Introduce rods**

**Instruments**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>03.616.003</td>
<td>Rod Length Template</td>
</tr>
<tr>
<td>03.616.010</td>
<td>Rod Introducer</td>
</tr>
</tbody>
</table>

**A. Determine rod length**

Use the rod length template to determine the appropriate rod. With the rod length template in the closed position, insert it into the sleeve of the cranial or caudal lateral implant holder. Seat the first ball tip into the head of the Pangea implant. Squeeze the handle to separate the ball tips until the second ball tip is seated in the farthest Pangea implant. Use fluoroscopy to ensure the ball tips are properly seated.

The scale on the rod length template indicates the length of rod to be used. Adjust rod selection as needed if distraction will be applied. When measuring, always choose the longer rod length if the indicator is between rod sizes.

Squeeze the trigger to close and remove the rod length template.
5

Introduce rods continued

B. Attach rod to rod introducer

Insert the threaded post with knob into the shaft of the rod introducer, but do not tighten. Attach the machined end of the minimally invasive curved rod to the hooked end of the rod introducer (Figure 1) and finger-tighten the knob (Figure 2). Turn the knob back until the etch lines on the knob and the shaft are aligned (Figure 3). Verify that the rod is secure and pivots freely.

The handle on the rod introducer acts a position brake for the rod. Braking force is applied to the rod by squeezing the handles. This feature can be used when introducing the rod. When no pressure is applied to the handles, the rod will pivot freely.
C. Introduce rod into construct

Align the lateral implant holders as described in step 4-E (page 16). The rod may be inserted from either direction. With the rod pointed down, position the bullet nose of the rod against the inside wall of the cranial or caudal lateral implant holder. Slide the rod down until it passes through the window and into the head of the Pangea implant.

If braking force was applied, release the brake. Shift the heel of the rod introducer into the inside wall of the opposite lateral implant holder. Then, push the heel down into the head of the opposite Pangea implant.
Rod reduction techniques

A. Rod pusher

Instruments

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<tr>
<th>Instrument</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>03.616.002</td>
<td>Rod Pusher</td>
</tr>
<tr>
<td>03.616.010</td>
<td>Rod Introducer</td>
</tr>
</tbody>
</table>

After the rod is engaged in the heads of the Pangea implants, shift the rod into position by manipulating the rod introducer. The rod pusher may also be used at this time to help seat the rod into the head of the first Pangea implant.

B. Cap alignment sleeve

Instrument

<table>
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<tr>
<th>Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>03.616.016</td>
<td>Constellation Cap Alignment Sleeve</td>
</tr>
</tbody>
</table>

The forks on the cap alignment sleeve can be used to aid in rod reduction.

The fork on the cap alignment sleeve must be positioned toward the center of the construct for proper insertion. Insert the cap alignment sleeve into the lateral implant holder opposite the rod introducer.

Press down on the cap alignment sleeve to reduce the rod.
C. Persuader

**Instruments**

<table>
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<tr>
<th>Code</th>
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<tr>
<td>03.616.013</td>
<td>Persuader</td>
</tr>
<tr>
<td>03.616.016</td>
<td>Constellation Cap Alignment Sleeve</td>
</tr>
</tbody>
</table>

The persuader is used with the cap alignment sleeve and lateral implant holder to reduce the rod. Slots on the cap alignment sleeve and the lateral implant holder receive the persuader forks. The fork on the cap alignment sleeve must be positioned toward the center of the construct for proper insertion.

Insert the cap alignment sleeve into the lateral implant holder opposite the rod introducer. The rod introducer controls the position of the rod. Ensure proper placement of the rod before using the persuader.

Squeeze the handles on the persuader so that the forks on the persuader align with the slots on the cap alignment sleeve and lateral implant holder. Engage the slots with the forks and secure placement of the persuader. To reduce the rod, squeeze the persuader handle until the black etch lines on the cap alignment sleeve and the lower fork of the persuader are aligned. When the etch line on the lower fork of the persuader is aligned with the etch line on the cap alignment sleeve, the rod is reduced and the cap can be introduced.

The handle will automatically lock in place in the closed position. To release the handle, push the lever on the underside of the persuader and disengage it from the cap alignment sleeve and lateral implant holder.

**Note:** For standard length lateral implant holders, the lower grooves on the cap alignment sleeve are used. For long lateral implant holders, the upper grooves on the cap alignment sleeve are used.
Attach Locking Caps

7

Attach locking caps

**Instruments**

<table>
<thead>
<tr>
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<tr>
<td>03.616.016</td>
<td>Constellation Cap Alignment Sleeve</td>
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<tr>
<td>03.616.021</td>
<td>Constellation Locking Cap Driver</td>
</tr>
<tr>
<td>03.620.218*</td>
<td>Cannulated StarDrive Screwdriver Shaft, T25 or</td>
</tr>
<tr>
<td>03.620.003*</td>
<td>StarDrive Screwdriver Shaft, T25</td>
</tr>
<tr>
<td>03.620.005*</td>
<td>Ratchet T-Handle with low toggle or Palm Ratchet Handle</td>
</tr>
</tbody>
</table>

Attach a StarDrive screwdriver shaft to a ratchet T-handle or palm handle. Slide the locking cap driver onto the StarDrive screwdriver shaft to the top groove.

Insert the screwdriver shaft tip firmly into the setscrew of the Pangea locking cap. Slide the locking cap driver down to the setscrew. Secure the locking cap driver to the cap by threading the locking cap driver clockwise onto the setscrew.

*Also available
First cap (per side)
The cap alignment sleeve is keyed to ensure proper position of the locking cap. Insert the cap alignment sleeve into the lateral implant holder opposite the rod introducer. Insert the locking cap driver assembly into the cap alignment sleeve until it reaches the head of the Pangea implant. Push down on the locking cap driver assembly and snap the cap into the head of the Pangea implant. When the etch line on the cap driver is flush with the top of the cap alignment sleeve, the cap is properly seated in the head of the Pangea implant.

**Tip:** Ensure the lateral implant holders are perpendicular to the rod and the rod is fully reduced before placing the first cap.

The cap is secured by a quarter turn. To secure the cap, turn the locking cap driver clockwise to rotate the cap one-quarter turn. There is a distinct snap once the cap is in place. Unthread the locking cap driver counterclockwise (while holding on to the screw driver handle) and retract it to before driving the setscrew further with the StarDrive screwdriver shaft. Provisionally tighten the setscrew to secure the position of the rod. Do not over-tighten the locking caps.

Secure the first cap before removing the rod introducer.

Additional caps
With one cap securing the rod to maintain its position, loosen the knob at the top of the rod introducer to release the rod. Remove the rod introducer from the surgical site.

Repeat previous steps to insert additional locking caps. Do not provisionally tighten additional caps.
Apply Compression (optional)

8a
Apply compression (optional)

Instruments

03.616.011  Compressor

03.620.218*  Cannulated StarDrive Screwdriver Shaft, T25

or

03.620.003*  StarDrive Screwdriver Shaft, T25

03.620.005*  Ratchet T-Handle with low toggle

or

388.654*  Palm Ratchet Handle

It is possible to control compression at the posterior aspect of the vertebral bodies, or across the entire vertebral body. Posterior compression will control the amount of resulting lordosis.

Parallel compression will result in more uniform forces across to the anterior aspect of the vertebral body.

Whether the screws are configured for parallel or lordotic compression, the compressor is used in the same way.

Lordotic compression
Lordotic compression with mobile Cannulated Pangea screw heads is possible if the locking cap setscrews have not been tightened.

Tighten one locking cap setscrew. The loose screw can now be compressed toward the tightened screw.

Parallel compression
Parallel compression with fixed Cannulated Pangea screw heads is possible if the locking cap setscrews have been tightened and loosened.

First tighten both locking cap setscrews, and then loosen one locking cap setscrew. When tightened, the mobility of polyaxial heads is eliminated and screws become monoaxial. After loosening one setscrew, it is possible to compress the loose screw toward the tightened screw.

*Also available
Positioning the compressor
The compressor provides ratchet-controlled compression. When the compressor toggle is in the “lock” position, the ratcheting mechanism is engaged (Figure 1). When the compressor toggle is in the “unlock” position, the ratcheting mechanism is disengaged (Figure 2).

Before positioning the compressor, ensure that the toggle is in the “lock” position and that the lever arm is nested in the cannula of the compressor (Figure 3). The cannula of the compressor must be inserted into the lateral implant holder attached to the loose screw of the construct with the compressor arm oriented toward the center of the construct (Figure 4). After the cannula is seated on the locking cap inside the lateral implant holder, move the compressor toggle to the “unlock” position. Insert the StarDrive screwdriver shaft into the cannula and engage the setscrew of the locking cap. Position the compressor arm to engage the locking cap on the previously tightened screw. Move the compressor arm so that it protrudes through the window of the opposite lateral implant holder. Then, move the compressor arm down to engage the locking cap. Fluoroscopy may be used to verify proper placement. Move the compressor toggle to the “lock” position, and turn knob to apply compression.

After compression is complete, provisionally tighten the setscrew. Do not do final tightening.

Repeat for the contralateral side, as desired.
Apply Distraction (optional)

8b
Apply distraction (optional)

Instruments

<table>
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<tr>
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<tr>
<td>03.616.027</td>
<td>Constellation Distractor</td>
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<tr>
<td>03.620.003*</td>
<td>StarDrive Screwdriver Shaft, T25</td>
</tr>
<tr>
<td>03.620.005*</td>
<td>Ratchet T-Handle with low toggle</td>
</tr>
<tr>
<td>388.654*</td>
<td>Palm Ratchet Handle</td>
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</tbody>
</table>

Positioning the distractor

The distractor allows ratchet-controlled distraction. When the distractor toggle is in the “lock” position, the ratcheting mechanism is engaged. When the distractor toggle is in the “unlock” position, the ratcheting mechanism is disengaged.

Before positioning the distractor, ensure that the toggle is in the “lock” position and that the lever arm is nested in the cannula of the distractor. The cannula of the distractor must be inserted into the lateral implant holder attached to the loose screw of the construct with the distractor arm oriented toward the center of the construct. After the cannula is seated on the locking cap inside the lateral implant holder, move the distractor toggle to the “unlock” position. Insert the StarDrive screwdriver shaft into the cannula and engage the setscrew of the locking cap. Position the distractor arm to rest against the inside aspect of the locking cap on the previously tightened screw. Fluoroscopy may be used to verify proper placement. Move the distractor toggle to the “lock” position, and turn the knob to apply distraction.

To maintain distraction, provisionally tighten the setscrew. Do not do final tightening.

*Also available
Final Tightening

Instruments

<table>
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<tr>
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<td>03.616.012</td>
<td>Countertorque</td>
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<tr>
<td>03.620.019*</td>
<td>10 Nm Torque Limiting Handle</td>
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<td>03.620.218*</td>
<td>Cannulated StarDrive Screwdriver Shaft, T25</td>
</tr>
<tr>
<td>03.620.219*</td>
<td>Cannulated StarDrive Screwdriver Shaft, long, T25</td>
</tr>
</tbody>
</table>

Attach the StarDrive screwdriver shaft to the 10 Nm torque limiting handle.

The cannula of the countertorque must be inserted into the lateral implant holder of the screw to be tightened. The fork on the countertorque must be positioned toward the center of the construct for proper insertion.

**Note:** The handle of the countertorque pivots for right- or left-handed use.

After the countertorque is fully seated, insert the StarDrive screwdriver shaft into the cannula and engage the setscrew of the locking cap. Apply torque until the torque limiting handle releases. An audible click will indicate that 10 Nm of torque has been applied.

Repeat for all locking caps.

*Also available*
10

Remove lateral implant holders

Instrument

03.616.005 Driver, for Lateral Implant Holders

Remove the lateral implant holders from the Pangea screw heads by turning the knob on top of the lateral implant holders until the outer sleeve is fully retracted and the upper screw thread is fully exposed. Gently rock the lateral holder off the screw.

Note: Although finger-loosening should be all that is required, the driver for lateral implant holders may be used to assist in loosening of the knob on the lateral implant holders.
Optional Technique—Remove Locking Caps

Removing locking caps with lateral implant holders attached, if necessary

**Instruments**

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<td>Constellation Locking Cap Driver</td>
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<td>Cannulated StarDrive Screwdriver Shaft, T25</td>
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<tr>
<td>03.620.003*</td>
<td>StarDrive Screwdriver Shaft, T25</td>
</tr>
<tr>
<td>03.620.005*</td>
<td>Ratchet T-Handle with low toggle</td>
</tr>
<tr>
<td>388.654*</td>
<td>Palm Ratchet Handle</td>
</tr>
</tbody>
</table>

*Also available

Insert the Pangea locking cap driver onto the StarDrive screwdriver shaft so that the tip of the screwdriver shaft is fully exposed. Insert the screwdriver shaft into the lateral implant holder and engage the setscrew of the locking cap.

Turn the screwdriver shaft counterclockwise to loosen the setscrew and rotate the locking cap 90° to its initial insert position. Slide the locking cap driver down the screwdriver shaft until it engages the setscrew of the locking cap. Thread the locking cap driver onto the setscrew. The locking cap is now secured to the screwdriver shaft. Remove the screwdriver shaft and locking cap from the lateral implant holder.
Optional Technique—Remobilize Pangea Implant

Remobilizing head of cannulated Pangea implant, if necessary, with lateral holders attached

Instruments

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<th>Code</th>
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<tr>
<td>03.616.030</td>
<td>MIS Threaded Remobilizer</td>
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<tr>
<td>03.620.005*</td>
<td>Ratchet T-Handle with low toggle or 388.654* Palm Ratchet Handle</td>
</tr>
</tbody>
</table>

The MIS threaded remobilizer is designed to work through the lateral implant holders. Assemble the threaded remobilizer by turning the threaded shaft into the L-handle until the red indication line is flush with the top of the L-handle. Attach the palm handle or ratchet T-handle to the shaft.

The locking caps and the rod must be removed before remobilization. Insert the threaded remobilizer into the lateral implant holder of the head to be remobilized. Apply a steady downward pressure to ensure that the L-handle is fully seated in the head of the Pangea implant. Advance the threaded shaft until the shoulder bottoms out on the top of the L-handle. Unthread the threaded shaft until the red indication line is visible. Toggle the L-handle to confirm that the head is now polyaxial. If the red indication line cannot be seen, do not try and toggle the implant with the threaded remobilizer attached since this may damage the implant.

*Also available
Optional Technique—Manage Lateral Implant Holders

Managing lateral implant holders

<table>
<thead>
<tr>
<th>Instrument</th>
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<td>03.616.004</td>
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The stabilizer for lateral implant holder can be used as a tool to help manage the alignment of the lateral implant holders in multilevel constructs.

To maintain a clear path for rod introduction, place the arms of the stabilizer between the lateral implant holders and adjust the width of the channel, based on patient anatomy. The knob on the stabilizer is used to adjust the width.
Cannulated Pangea polyaxial screws
- 1.8 mm cannulation for use over 1.6 mm Kirchner wires
- Dual-core thread design provides optimal bone purchase
- Constant outer diameter
- Cortical thread engages the pedicle
- Cancellous thread engages the vertebral body
- Transition zone for core diameter change

Polyaxial heads
- Top loading for easy rod introduction
- 25° of angulation about the axis of the screw allows the implant to adjust readily to the rod
- Rod snaps into the head to stabilize construct before locking cap installation

Pangea locking caps
- Quarter-turn rod capture
- Rod-gripping ridges
- Tactile alignment cues
- Visual markings
- Tactile feedback for insertion and quarter-turn engagement

Minimally invasive curved rods
- 6.0 mm curved rods reduce the need to contour
- 35 mm to 85 mm lengths, in 5 mm increments
- Same mechanical properties as straight rods
- Bullet-nosed to improve navigation through soft tissue
Instruments

- 03.616.001 Blunt Dissector
- 03.616.002 Rod Pusher
- 03.616.003 Rod Length Template
- 03.616.004 Stabilizer, for Lateral Implant Holders
- 03.616.005 Driver, for Lateral Implant Holders
- 03.616.006 Holding Sleeve
- 03.616.007 Lateral Implant Holder, standard (purple)
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>03.616.008</td>
<td>Lateral Implant Holder, standard (blue)</td>
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<tr>
<td>03.616.009</td>
<td>Lateral Implant Holder, standard (green)</td>
</tr>
<tr>
<td>03.616.010</td>
<td>Rod Introducer</td>
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<tr>
<td>03.616.011</td>
<td>Compressor</td>
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</table>
03.616.012  Countertorque

03.616.013  Persuader

03.616.016  Constellation Cap Alignment Sleeve, for Pangea
Synthes Spine  Constellation CP System

Instruments continued

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<tr>
<th>Code</th>
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<tr>
<td>03.616.017</td>
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<td>03.616.018</td>
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<td>03.616.020</td>
<td>Rod Positioner</td>
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<tr>
<td>03.616.021</td>
<td>Constellation Locking Cap Driver, for Pangea</td>
<td></td>
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</tbody>
</table>
03.616.025  Holding Sleeve, long

03.616.027  Constellation Distractor

03.616.030  MIS Threaded Remobilizer
### Graphic Case

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<td>Graphic Case, for Standard Constellation Instrument Set</td>
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### Instruments

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<td>Rod Pusher</td>
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<td>03.616.003</td>
<td>Rod Length Template</td>
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<td>03.616.004</td>
<td>Stabilizer, for Lateral Implant Holders</td>
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<tr>
<td>03.616.005</td>
<td>Driver, for Lateral Implant Holders</td>
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<td>03.616.006</td>
<td>Holding Sleeve, 2 ea.</td>
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<tr>
<td>03.616.007</td>
<td>Lateral Implant Holder, standard (purple), 2 ea.</td>
</tr>
<tr>
<td>03.616.008</td>
<td>Lateral Implant Holder, standard (blue), 2 ea.</td>
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Note: For additional information, please refer to package insert.
### Constellation Auxiliary Instrument Set (01.616.002)

**Graphic Case**
- 60.616.002  
  Constellation Auxiliary Graphic Case

**Instruments**
- 03.616.017  Lateral Implant Holder, long (purple), 2 ea.
- 03.616.018  Lateral Implant Holder, long (blue), 2 ea.
- 03.616.019  Lateral Implant Holder, long (green), 2 ea.
- 03.616.025  Holding Sleeve, long, 2 ea.
- 03.616.027  Constellation Distractor
Minimally Invasive Titanium Rod Set (01.616.004)

**Modules**
- 60.616.003  Module, for Minimally Invasive Rods
- 690.241  Module, for Pangea Locking Caps

**Implants**
- 04.620.000  Titanium Pangea Locking Caps, 20 ea.

6.0 mm Titanium Minimally Invasive Curved Soft Rods, 2 ea.
- Length (mm)
  - 04.631.035  35
  - 04.631.040  40
  - 04.631.045  45
  - 04.631.050  50
  - 04.631.055  55
  - 04.631.060  60
  - 04.631.065  65
  - 04.631.070  70
  - 04.631.075  75
  - 04.631.080  80
  - 04.631.085  85

**Also Available**
- 03.620.003  StarDrive Screwdriver Shaft, T25, 6 mm hex coupling
- 03.620.005  Ratchet T-Handle with low toggle, 6 mm hex coupling
- 03.620.013  Pangea Locking Cap Driver with T-Handle
- 03.620.019  10 Nm Torque Limiting Handle
- 03.620.218  Cannulated StarDrive Screwdriver Shaft, T25
- 03.620.219  Cannulated StarDrive Screwdriver Shaft, T25, long
- 388.654  Palm Ratchet Handle