

ARRAY[®]

Surgical Technique

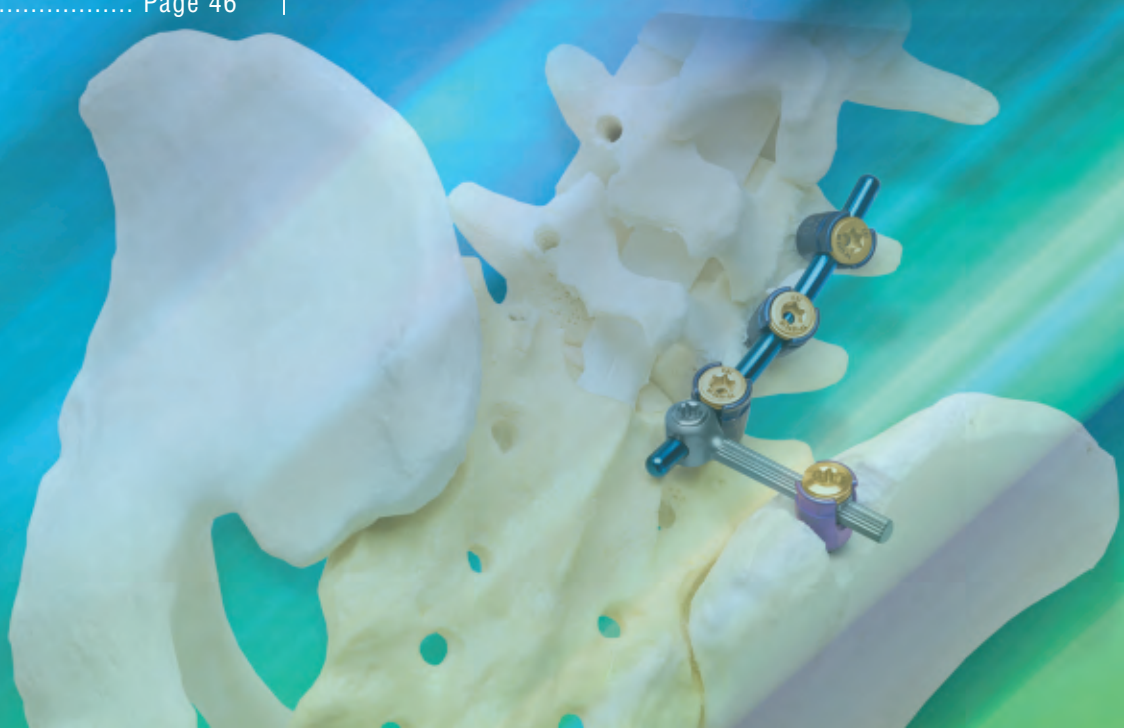


*Available In Titanium
And Stainless Steel*



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Introduction

During the past decade there has been a continuous evolution in the design for pedicle screw fixation systems. The advancement of modern surgical techniques has called for spinal systems that are reliable, simple, user-friendly and adaptable. The Array® Spinal System was developed to address the modern demands of advanced surgical techniques. By evaluating the strengths and weaknesses of similar systems currently on the market, the Design Team has incorporated many of these strengths into the **Array Spinal System**, while simultaneously avoiding weaknesses presented by other spinal hardware systems.

The **Array Spinal System** is a low profile, top-loading system. This low-profile system has an enhanced closure mechanism technology and an ergonomically designed instrumentation set. The trays for the **Array Spinal System** have been configured to address the treatment of degenerative disc disease, deformity indications and spinal trauma.

The **Array Spinal System** is a universal Screw, Hook and Rod system designed to address the complete “array” of pathologies for the thoracic and lumbar spine. It contains a wide selection of titanium color-coded Multi-axial Screws, Reduction Screws, Fixed Head Screws, and Hooks, that provide a high degree of versatility for the system. The system’s implants are also offered in Stainless Steel. The instrumentation is modular and color-coded, allowing for optimized speed and ease of use for the technician and the surgeon. Rods are available in Commercially Pure Titanium, Titanium Alloy, and varying Stainless Steel tensile strengths. Whether your choice is based on material type, strength or ease of use, the **Array Spinal System** will address the wide array of needs associated with the thoracic and lumbar spine.



System Design Features

The **Array Spinal System** is available in Titanium and Stainless Steel. The Stainless Steel implants are NOT color-coded and are marked with an "S".



Multi-axial Screw

- Consists of four (4) components: the Screw shank, the tulip portion of the Screw, and two internal locking rings
- The Screw shank has a four-prong drive interface with a "proprietary peak" created at the center of the four-prong drive, which greatly enhances the axial grip on the Longitudinal length of the Rod
- Unique thread pitch offers improved pullout strength in the vertebral body
- 60° total angulation
- Hexagonal groove of tulip head allows for a multidirectional interface with the **Array** Instruments necessary for various reduction techniques
- Two locking rings within the tulip head lock the Multi-axial Screw into a Fixed Angle Screw when torqued with a Set Screw. This also maintains a friction fit allowing the tulip to remain in place during Rod and Set Screw application

Unique Set Screw Design

- 10.5mm diameter
- V-Force™ Thread - Vertical Vector Technology minimizes head splay and cross threading

Pre-Cut, Pre-Contoured Rods

- 5.5mm diameter
- Pre-contoured to minimize the need for Rod bending

Multi-axial Screws



Set Screws



Pre-Cut, Pre-Contoured Rods



Implants

Description

The **Array Spinal System** is a spinal fixation device made from Titanium Alloy (Ti-6Al-4V ELI). The system includes self-tapping Multi-axial and Fixed Screws, Reduction Screws, Iliac Screws, Hooks and Set Screws.

Multi-axial And Fixed Head Screws

Available in diameters of:

4.0mm (gray)

4.75mm (green)

5.5mm (gold)

6.5mm (blue)

7.5mm (dark magenta)

Ranging in length from 30mm-55mm in 5.0mm increments.



Reduction Screws

5.5mm (gold)

6.5mm (blue)

7.5mm (dark magenta)

Ranging in 30-55mm lengths offered in 5.0mm increments.



Iliac Screws

5.5mm (gold)

6.5mm (blue)

7.5mm (dark magenta)

8.0mm (gray, Multi-axial only)

8.5mm (light blue, Fixed only)

Ranging in lengths from 60mm-90mm, double lead thread design.



Implants (Continued)

Lateral Connectors

Closed Lateral Connectors are offered in three sizes (size is measured from the center of the Set Screw or Rod to the end of the post of the Lateral Connector). The closed design creates a strong, low profile Connector.

- Short: 25mm
- Medium: 50mm
- Long: 75mm



Splined Set Screw



Splined Set Screw incorporates a washer and is inserted the same as a standard Set Screw.



Use the Splined Set Screw only with the Lateral Connector. The splines interdigitate to increase rotational stability.

Set Screws

- 30 hexalobe
- 10.5mm diameter
- **V-Force Thread** - Vertical Vector Technology



Stainless Steel



Titanium

Pre-Cut Rods

- 5.5mm diameter
- Pre-cut, pre-contoured, ranging in length from 30mm-100mm in 10mm increments
- 510mm Titanium Alloy and Commercially Pure Titanium Rods (CP Ti Rods-gold tips)
- 510mm Stainless Steel
- Hard and Medium tensile strengths with hex end and longitudinal line



CP Ti and Ti alloy Rods

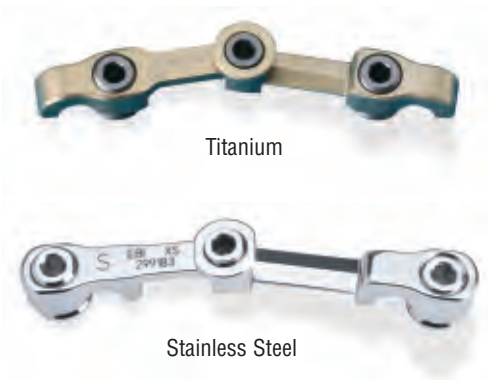


Medium = Two etched rings

Hard = Three etched rings

Cross Connector*

- Ranging in size from 16mm-75mm
- Low Profile
- Telescoping and fixed



Hook Implants

The **Array Spinal System** has a complete selection of Hooks; each of the nine different Hook styles is color-coded by size (Titanium only):

- Small, 6.0mm (gold)
- Medium, 7.5mm (gray)
- Large, 9.0mm (blue)



Laminar Hooks

- Wide and narrow blades
- Standard and reduced throat configurations



Implants (Continued)

Pedicle Hooks

- Bifid blade
- Standard throat configuration



Transverse Process Hooks

- Right and left
- Narrow, twisted blade
- Standard throat configuration



Angled Hooks

- Right and left
- Narrow blade
- Standard throat configuration



Offset Hooks

- Right and left
- Narrow blade
- Standard throat configuration



Laminar Angled Blade Hooks

- Narrow blade
- Standard throat configuration



Extended Body Hooks

- Narrow blade
- Standard throat configuration



Standard Instruments

Various instruments are available with the **Array Spinal System** for use by the surgeon to facilitate implantation of the device.



Ratcheting And Fixed Handles



Pedicle Awl



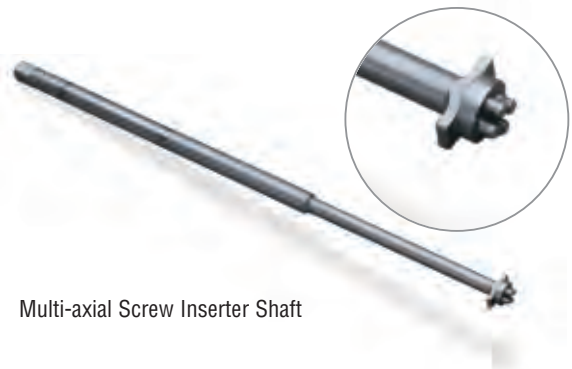
Pedicle Probes, Curved And Straight



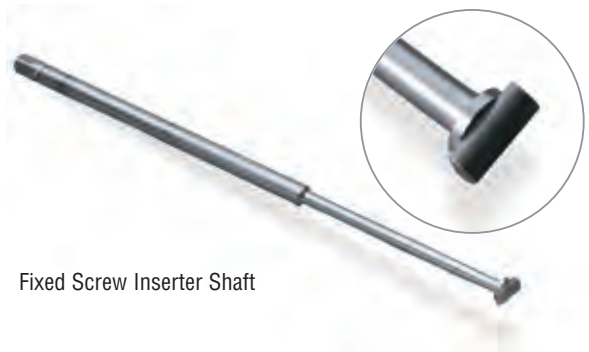
Taps And Reamer Probes



Pedicle Sound



Multi-axial Screw Inserter Shaft



Fixed Screw Inserter Shaft



Screw Inserter Outer Sleeve

Standard Instruments (Continued)



Multi-axial Screw Height Adjuster



Rod Bender



Rod Measuring Template



Cannulated Rod Reducer



Rod Holder



Rod Gripper



Double End Swizzle Starter



Provisional Set Screw Driver Shaft



Soft Tissue Retractor



Assembled Torque Wrench With Counter Torque Wrench



Compressor



Cross Connector Torque Wrench



Distractor



Left Or Right Rod Rocker

Standard Instruments (Continued)

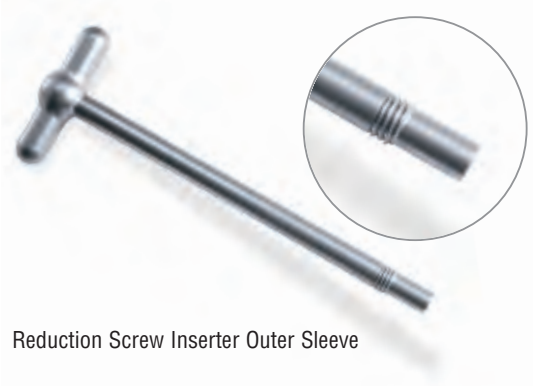
Reduction Screw Instruments



Break-Off Tool



Break-Off Stabilizer

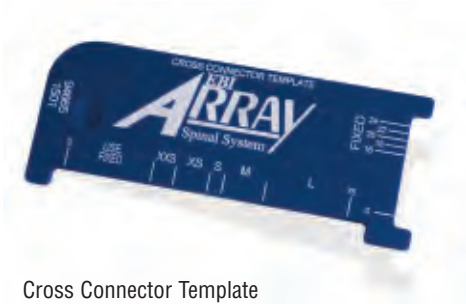


Reduction Screw Inserter Outer Sleeve



Reduction Screw Counter Torque

Deformity Instruments



Cross Connector Template



Long Dorsal Height Adjustor



4.0mm Reamer



4.0mm Tap



Thoracic Pedicle Probe

Standard Instruments (Continued)

Deformity Instruments (Continued)



Vertical Hook Holder



Angled Hook Holder



Short Angled Hook Holder



Pedicule Hook Starter



Narrow Laminar Hook Starter



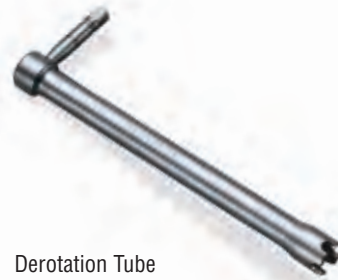
Medium Laminar Hook Starter



Wide Laminar Hook Starter



Thoracic Hook Starter



Derotation Tube



Hook Impactor



In Situ Benders
Left And Right



Dual Rod Rocker



Lateral In Situ Benders
Left And Right

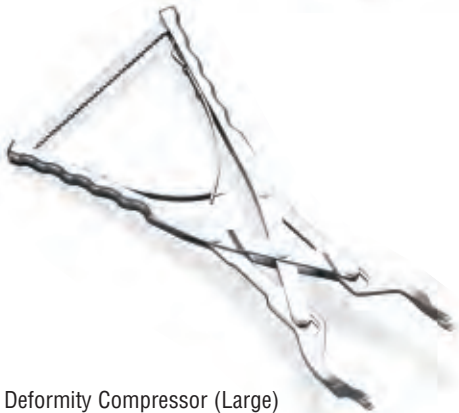


Solid Rod Rocker

Standard Instruments (Continued)



Deformity Compressor (Small)



Deformity Compressor (Large)



Deformity Distractor



Fixed Cross Connector Benders

Degenerative Surgical Technique

1. Surgical Approach And Preparation

After the patient is positioned in the customary manner, the spine is exposed via a midline or paraspinous incision. Paraspinal musculature is retracted laterally and a discectomy or posterior decompression is performed, if indicated. Decortication must be meticulously performed. Graft can be placed or packed into the posterolateral gutters either before or after the **Array Spinal System** has been implanted.

2. Pedicle Preparation

After adequate exposure, the appropriate pedicle entry point is selected and the pedicle is prepared. The entrance to the pedicle is marked with an awl, burr, or curette. The cancellous bone within the cortical tube of the pedicle is sounded using a probe. A Steinmann pin can be placed into the pedicle and its positioning can be confirmed on AP and lateral radiographs, ensuring proper orientation and trajectory. The appropriate diameter Reamer Probe is used to prepare the pedicle using a slow circular motion, allowing the Reamer Probe to center itself along the longitudinal axis of the pedicle. Each Reamer Probe is marked with the major diameter of the Screw it is to be used with. The Reamer Probe is initially advanced to a depth of approximately 30mm using the depth guide on the Reamer. Once the appropriate depth has been attained, proper pedicle positioning can be confirmed radiographically before the Reamer is removed.

Instead of the Reamer Probe, a Pedicle Probe can be used. The depth markings on the Probe confirm appropriate Screw length. After removal of the Reamer Probe, the pedicle wall integrity can be palpated using a Flexible Sound Probe to confirm containment. Other confirmatory tests can also be used.



Mark the entrance to the pedicle with the Pedicle Awl



Prepare the pedicle with the Reamer Probe or Pedicle Probe

Degenerative Surgical Technique (Continued)

3. Screw Selection And Insertion

Self-tapping Screws are available in several diameters and lengths. The appropriate Screw length is determined by using the depth gauge on the Pedicle Probe or the Reamer Probe. When using Multi-axial Screws, assemble the Multi-axial Screw Inserter Shaft (with the four prongs at its distal tip) and the T-handle Outer Sleeve. Lock the Multi-axial Screw Inserter into the Modular Handle. The Multi-axial Screws can be loaded out of the surgical tray or by hand. Load the Screw into the Inserter and tighten the Screw by rotating the outer T-Handle in a clockwise direction. The Screw is advanced into the pedicle until the bottom of the tulip portion of the Screw is above the pedicle. The Inserter is disengaged from the Screw by rotating the outer sleeve counterclockwise and removing both instruments together. All self-tapping Multi-axial Screws are inserted in the same manner as described above. If Fixed Head Screws are utilized, the Fixed Screw Inserter Shaft is used in place of the Multi-axial Screw Inserter Shaft.

Ratcheting and non-ratcheting handles in both a straight and T configuration are available for use with either Screw Inserter.



Select the appropriate Screw style and size



Assemble the appropriate Screw Inserter



Load the Screw into the appropriate Screw Inserter (Fixed or Multi-axial)



Insert the Screw

4. Rod Application

Once all Screws have been inserted, the appropriate length Rod should be chosen according to the construct. To aid in appropriate Rod selection, the Rod Measuring Template may be used to determine the distance between the Screw heads. Rods are available pre-cut and pre-contoured in 10mm increments (510mm Rods are also available). Be sure to account for large curves and distractions when choosing Rod length. If necessary, the selected pre-contoured Rod may be bent using the Rod Bender to fit the desired spinal contour. When using the Rod Bender, set the dial to the desired contour.



Apply the appropriate size Rod

5. Set Screw Application

When all Screws have been inserted and the Rods have been placed in the tulip portion of the Screw, the construct is then secured using Set Screws. The Set Screw is firmly pressed onto one end of the Double End Set Screw Starter. Set Screws should be applied in sequential order and provisionally tightened.



Double End Swizzle Starter



Provisional Set Screw Driver Shaft



Load the Set Screw onto the Double End Set Screw Starter

Degenerative Surgical Technique (Continued)

6. Rod Reduction (Optional)

If necessary, the Set Screw Starter may be used in combination with the Rod Reducer or Rod Rocker. When using the Rod Reducer, apply the Reducer to the hexagonal groove around the tulip head of the Screw. Squeeze and lock the Rod Reducer to ensure the Rod is fully seated in the bottom of the Screw head. The Double End Set Screw Starter will fit within the cannulated portion of the Reducer to facilitate Set Screw application while aligning the Set Screw Starter. If Rod Reduction is not required, the Construct Stabilizer (see Final Torquing) may be used to reposition the axis of the Screw head while simultaneously acting as a guide for the Set Screw Starter.



Rod Reducer



When using the Rod Rocker, apply the pivot piece located at the distal end of the Rocker to the circumferential hex around the tulip head of the Screw as you would the Rod Reducer. The Rod Rocker is offered in both a right and left style, which is determined by the location of the pivot piece. Place the solid side of the distal tip of the Rocker laterally to avoid the possibility of soft tissue interfering with the pivot piece.



Left or Right Rod Rocker



NOTE: If soft tissue is interfering with proper Set Screw application, the Soft Tissue Retractor should be utilized to aid in Set Screw application. The distal tip of the Retractor is placed under the tulip head of the Multi-axial or Fixed Screw and gentle pressure is utilized to retract the soft tissue away from the Screw.

7. Final Locking With The Torque Wrench

After provisional tightening, proper implant and spinal positioning should be confirmed. The Set Screws can then be firmly tightened with the Quick Connect, self-limited Torque Wrench in combination with the Counter Torque Wrench. Insert the Torque Wrench through the center of the Counter Torque Wrench. Position the tip of the Torque Wrench into the female portion of the Set Screw. The Torque Wrench is turned in a clockwise direction while the Counter Torque Wrench is held with resistive force in a counterclockwise direction until an audible click is heard, applying 110in-lbs of torque to the Set Screws.

NOTE: Use of the Counter Torque Wrench helps to prevent cross threading of the Set Screw.



Torque the Set Screws with the Torque Wrench and the Counter Torque Wrench

Spindy Reduction Technique

Reduction Screws may be used in the presence of a low-grade spondylolisthesis. The extended tabs allow for easier Rod introduction and may be used to reduce the spondylolisthesis, if desired. The extended tabs are removed at the end of the procedure.



1. Reduction Screw Selection And Insertion

For an L5 spondylolisthesis, reduction may be accomplished by inserting extended Multi-axial Screws at L5 (at the slipped level) and standard Multi-axial Screws at L4 and S1 (one level above and below the slipped vertebra). The Reduction Screws are inserted in the same manner as the standard Multi-axial Screws with the use of the Reduction Screw Inserter Outer Sleeve. See section “Screw Selection and Insertion” for further detail on Screw insertion.



Load the Screw Inserter Inner Shaft that is included in the **Array Standard Loaner Kit** with the Reduction Screw Outer Sleeve.



Load the Reduction Screw in the same manner as the Standard Multi-axial Screw.

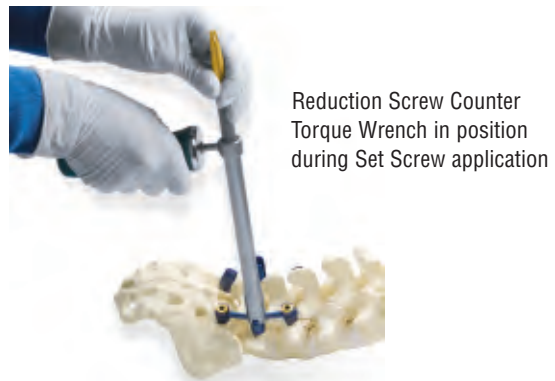


Standard Outer Sleeve vs. Reduction Screw Outer Sleeve

2. Rod And Set Screw Application

Once the Screws have been inserted, the Rod and Set Screws are applied in the standard manner. Refer to section “Rod Application” and section “Set Screw Application” for further detail on Rod and Set Screw application. The Set Screws at L4 and S1 are loosely tightened on both sides. Once the L4 and S1 Set Screws are partially secured, reduction is obtained by simultaneously and gradually tightening the Set Screws on the extended Screws at L5. It may be necessary to distract L5-S1 or L4-L5 to aid in the reduction.

It is recommended that the Standard or Reduction Screw Counter Torque Wrench should be in position over the Screw during Set Screw application to aid in proper alignment. At the same time, the surgeon may push down on the Counter Torque Wrench to facilitate Set Screw application at the slipped level where the Rod is not yet fully seated within the Screw head.





Standard Counter Torque Wrench vs. Reduction Screw Counter Torque Wrench

The extended Screw incorporates the hexagonal groove at the top of the tab and below the scored portion to facilitate the use of a Rod Reduction instrument before and/or after the tabs are broken off.



Hexagonal groove for application of a Rod Reduction instrument

The Set Screws must be fully tightened with the Torque Wrench in combination with the Reduction Screw Counter Torque Wrench. Refer to section “Final Locking with the Torque Wrench” for further detail on final torquing.

After confirmation of proper implant and spinal positioning, the extended tabs must be removed. The Reduction Screw Break-Off Tool and the Reduction Screw Break-Off Stabilizer must be used together when removing the extended tabs. To release the tab from the Break-Off tool, press the button located at the top of the handle. Repeat this process on the opposite side.



Break-Off Tool used with Break-Off Stabilizer



Press button to release tab from Break-Off Tool

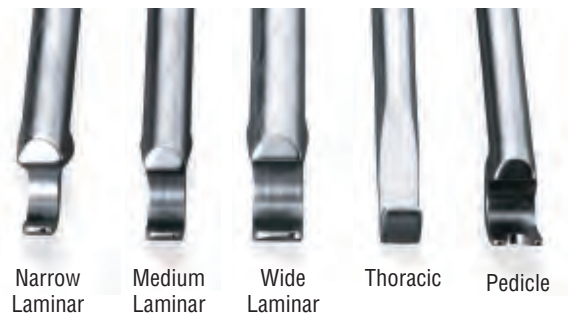
NOTE: The tab must be released from the tool before the instrument can be used to remove the tab on the opposite side.

Deformity Surgical Technique

1. Hook Site Preparation And Insertion

1a. Transverse Process Hook

The **Array** Thoracic Transverse Process Hooks are specially designed to allow maximum fixation under the transverse process while still maintaining the saddle of the Hook in line with the remaining spinal construct. These Hooks are always placed in a down-going fashion over the superior edge of the transverse process. The transverse process is exposed in standard subperiosteal fashion and a Hook Starter is placed over the superior edge of the transverse process. The thoracic transverse process Hook is then grasped in a Hook Holder and placed in a similar fashion over the superior edge of the transverse process orienting the saddle to be in line with the longitudinal axis of the spine. The medium transverse process Hook suffices in the majority of cases. Should the transverse process be too big or small, an appropriate sized Hook can then be chosen.



Hook Starters are used to prepare the Hook implant site. Various Starters match the Hook style desired.



The twisted blade of the Transverse process Hook adjusts for the slope of the transverse process



Transverse process Hooks are offered in three throat sizes (small = gold, medium = gray, large = blue)



Transverse process Hook insertion with the Angled Hook Holder

1b. Pedicle Hook

The **Array** Pedicle Hook is designed to obtain purchase in the thoracic spine from the tenth thoracic vertebra to the first thoracic vertebra. These Hooks are placed in an up-going fashion, allowing the bifurcated blade of the Hook to engage the pedicle at that level. The Pedicle Hook site is prepared by using a quarter inch osteotome. Two cuts are made on the inferior facet of the level to be instrumented. A superior to inferior cut is made at the lateral margin of the ligamentum flavum and is directed two to three millimeters proximally. The second cut with a quarter inch osteotome is performed in a transverse plane from the lateral edge of the facet joint to the medial cut. Approximately 6.0mm (1/4") of inferior facet should remain when measured from the base of the transverse process. The small bit of bone is removed and the facet joint is curreted. The Thoracic Pedicle Hook site may then be prepared with the Pedicle Hook Starter. Caution should be used to prevent medial penetration of the canal with this instrument. The appropriate sized pedicle Hook can be placed in a Hook Holder with a Hook Impactor and gently tapped into a seated position.

NOTE: The Angled Hook Holder is cannulated to align the Set Screw Starter.



Pedicle Hook with bifid blade



The Angled Hook Holder aligns the Set Screw Starter



Pedicle Hook insertion with the Angled Hook Holder and the Hook Impactor. The Hook Impactor incorporates a strike plate that may be gently tapped



Pedicle Hooks are offered in three throat sizes (small = gold, medium = gray, large = blue)

Deformity Surgical Technique (Continued)

1. Hook Site Preparation And Insertion (Continued)

1c. Laminar Hook

Array Thoracic and Lumbar Laminar Hooks may be placed in a supra or infralaminar position depending on the location of the spine. A wide selection of **Array** Laminar Hooks are available for use in different locations.

Offset down-going Laminar Hooks can be used at the top of the thoracic construct where transverse processes are small. In the lower lumbar spine, larger offset Laminar Hooks are placed in an up-going fashion in order to maintain colinearity of the saddles of the implants. Extended body Laminar Hooks are best used in a down-going fashion in the mid-lumbar spine in order to maintain the appropriate height of the Rod construct with the other implants proximally and distally. Reduced Laminar Hooks are placed in the thoracic spine in a down-going fashion at the end of the concavity of the curve or in the rigid segment. These Hooks prevent unnecessary penetration of the blade of the Hook into the spinal canal.

In general, Laminar Hooks are placed by removing an appropriate amount of ligamentum flavum and surrounding bone to provide safe passage of the Hook into the spinal canal in an infra or supralaminar position depending upon the appropriate level. Care is taken to note that the bone encompassed by the Hook completely fills the throat of the Hook, thus preventing unnecessary penetration of the blade into the canal.

A Variety Of Laminar Hooks Are Available



Standard and Reduced throat configurations



Angled Blade Hooks



Wide and Narrow Blade Hooks



Extended Body Hook



Right and Left Offset Hooks

2. Thoracic Screw Placement

Array Thoracic Pedicle Screws are placed within those vertebral bodies determined by the surgeon to be appropriate in size and location. Pre-operative radiographs and occasionally CT scans may be needed to determine the size of the pedicle and its appropriateness for fixation with the Thoracic Pedicle Screw.

Thoracic Pedicle Screw placement may be performed in several ways according to surgeon experience and preference. As an example and in order to place a Thoracic Pedicle Screw at the T7 vertebral body, the site must be prepared appropriately. The inferior edge of the inferior facet of T6 is removed as if performing placement of a Thoracic Pedicle Hook at T6. The entry point for the Thoracic Pedicle Screw is at the confluence of the superior facet of T7, the superior ridge of the transverse process. A burr or awl may be used to make a cortical breach thus allowing access into the pedicle itself. Fluoroscopy is helpful in localizing the entry point for the Thoracic Pedicle Screw. In general, the cortical breach for entry in the pedicle is slightly lateral to the image generated on the fluoroscopy.



Multi-axial Screws

- 4.0mm (gray)
- 4.75mm (green)
- 5.5mm (gold)
- 6.5mm (blue)
- 7.5mm (dark magenta)



Fixed Angle Screws

Deformity Surgical Technique (Continued)

2. Thoracic Screw Placement (Continued)

The pedicle is entered with a Thoracic Pedicle Probe. This may be confirmed on AP and lateral images to be within the Thoracic Pedicle. The Pedicle Sound is then used to sound the superior-inferior-medial and lateral walls as well as the base of the pedicle. The surgeon may then choose to tap the pedicle with the appropriately sized **Array Tap** (**NOTE:** tapping is optional). After tapping, the medial lateral-superior and inferior walls and base of the pedicle shaft are palpated to detect for any breeches. Once the appropriate length of the Screw is confirmed, the selected Screw is placed and confirmed on fluoroscopy to be within the pedicle. Spinal cord monitoring may be performed during the entire procedure in order to detect any aberrations in the spinal cord function. Furthermore, placement of Thoracic Pedicle Screws may be performed freehand, with fluoroscopy, or with image guidance. Alternatively, laminotomies at that level may be performed in order to palpate the medial wall of the pedicle thus guiding appropriate pedicle Screw placement. See “Screw Selection and Insertion” for additional information.



Thoracic Probe



Thoracic Probe

3. Rod Selection And Preparation

Depending upon the surgeon's selection of implant material, there are several Rod choices. If a Titanium system is used, 510mm length Rods are offered in Titanium Alloy and Commercially Pure Titanium (CP Ti). Commercially Pure Titanium Rods are indicated with gold tipped ends. CP Ti and Titanium Alloy have the same stiffness properties. However, CP Ti is a softer material, thus appears easier to bend as compared to Titanium Alloy.

If a Stainless Steel system is used, 510mm Stainless Steel Rods are offered in two tensile strengths, medium and hard. The process of cold-working changes the properties of the Stainless Steel Rods. Cold-working adds stress to the material, which results in increased strength. The etched rings on the ends of the Rods indicate the tensile strength: 2 = medium, 3 = hard. The etched Longitudinal line along the entire length of the Rod aids in Rod rotation. The Stainless Steel Rod also incorporates a hex end for further options with Rod rotation.



Deformity Surgical Technique (Continued)

4. Rod Reduction - Four Options

The Rod is inserted into the proximal Hook or Screw. It is often helpful to place a Set Screw in the most proximal saddle prior to Rod placement and in order to facilitate proximal fixation of the Rod. The Rod can then be reduced to the Hooks and Screws with a variety of options: Left or Right Rod Rocker, Rod Rocker, Rod Pusher, Solid Rod Rocker, or the Rod Reducer. Once the Rod is reduced, the spine can be corrected with either Rod rotation, in situ bending, or use of cables and wires to translate the spine to the Rod (refer to "Set Screw Application"). Once the Set Screws have been provisionally tightened and the construct confirmed, the contralateral Rod is placed in the standard fashion, thus providing further fixation. Set Screws are finally tightened using the Torque Wrench and Counter Torque Wrench (see "Final Locking With The Torque Wrench").

NOTE: Each Rod reduction instrument allows for Set Screw application.



Rod Rocker



Rod Pusher



Solid Rod Rocker



Rod Reducer



Double End Swizzle Starter

5. In Situ Contouring

In situ contouring may be performed with In Situ and/or Lateral Benders prior to final torquing. In general, the In Situ Benders are used to improve or adjust kyphosis and lordosis and Lateral Benders are used to reduce coronal plane deformity.

6. Translation And Derotation

Translation and derotation of the spine can be accomplished by use of fixed Pedicle Screws at those levels. Common areas where derotation is of benefit are the apical and end vertebra. This is an excellent method in reducing the rotational deformity of the spine. In order to derotate segments of the spine, it is important that there be appropriate fixation of the remaining part of the spine against which to derotate the spine.

In the example of a right thoracic left lumbar double major curve, derotation of lumbar pedicle Screws is very helpful in reducing the lumbar deformity. This is done by placing the Rod on the left side of the spine first.

NOTE: The Derotation Tubes incorporate a quick connect mechanism to facilitate the attachment of a quick connect handle if desired.



Adjust kyphosis and lordosis with In Situ Benders



Reduce coronal plane deformity with Lateral Benders



Derotate the Fixed Angle Screws with the Derotation Tubes

Iliac Screw Technique

1. Iliac Fixation Technique And Lateral Connector Placement



Length dimension of Lateral Connector

2. Prepare The Ilium

Exposure of the iliac wing is done as per the surgeon's standard method. The iliac wing is typically exposed enough to orient the path of the iliac wing and to ensure the iliac cortex is not violated by placement of the iliac Screw. Place the pedicle probe down between the iliac tables in a manner that places the path about 1cm to 1.5cm above the sciatic notch. The Pedicle Probe or Reamer Probe may be used to start the hole, but may not extend to the entire length of the Iliac Screw chosen. This can be confirmed with fluoroscopy of the pelvis or by tactile feel, depending on the surgeon's standard protocol.



In general, it is best to place the largest Screw diameter possible. The Screw is placed after the inner and outer tables are felt with a pedicle sound and the iliac walls and floors are noted to be intact.



The rectangle shows the area in which an Iliac Screw would be placed. The dotted line illustrates the proper trajectory of the Iliac Screw.

It is recommended to either notch the iliac wing around the Screw head or sink the Screw head into the bone to prevent prominence, especially in thin patients. See section "Inserting the Screw" for further detail on Screw insertion.



Insert the Screw into the iliac wing.

3. Applying The Lateral Connector

Preload the Lateral Connector onto the Longitudinal Rod. The post of the Lateral Connector may be cut and contoured as deemed necessary. When contouring the post, note where it will be mating with the splined Set Screw (at the point where the post sits within the Screw head). Avoid bending the post at the point where it mates with the Splined Set Screw to ensure proper locking.

A Lateral Connector may be used at points along the construct to connect to a Screw that may be Lateral and out of line with the pedicle Screw above and below this point.



Pre-load Lateral Connector onto the Longitudinal Rod



Lateral Connector applied to Lateral Screw.

4. Provisional And Final Tightening

In tightening the Set Screws, first secure the Set Screws along the Longitudinal Rod. Then secure the splined Set Screw where it mates with the post of the Lateral Connector within the Lateral or Iliac Screw. Finally, tighten the Set Screw at the Lateral Connector/Longitudinal Rod interface. All Set Screws must be final tightened with the Torque Wrench in combination with the Counter Torque Wrench. For further details refer to section, "Final Torquing".



Splined Set Screw vs. Standard Set Screw

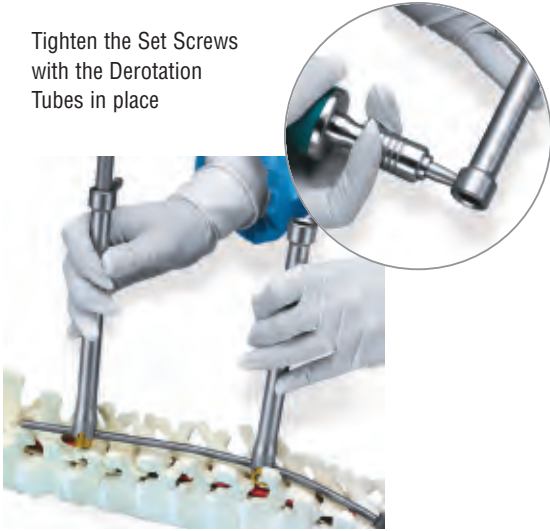
NOTE: The Splined Set Screw is used with the Lateral Connector only!



Final construct

Additional Surgical Options

Tighten the Set Screws
with the Derotation
Tubes in place



The Rod is rotated with the Rod Grippers, producing normal sagittal kyphosis and lumbar lordosis. On the left side of the spine, the proximal fixation is tightened down in order to obtain a fix of the thoracic spine. Derotation Tubes are then placed over the lumbar left sided Pedicle Screws and are then rotated externally, thus internally rotating the lumbar spine on the fixed proximal thoracic spine. Once rotation is obtained, then the Set Screws are tightened.



Rotate the Rod with the Rod Grippers

1. Distraction And Compression

Distraction and Compression can be achieved by utilizing either the Parallel Distractor or Parallel Compressor. Both instruments permit intraoperative application of linear Distraction or Compression at any level. The distal tips of the Distractor or Compressor are applied to the Rod and the desired degree of Distraction or Compression is applied. The Distraction or Compression device will maintain the position of the vertebra until the Set Screw is tightened with the Provisional Driver, securing the Rod.



Tighten the Set Screw
with the Provisional
Driver while the
Compressor or Distractor
is in place

Specific Compressors and Distractors are available to facilitate deformity applications. A small Compressor with a range from 15mm to 42mm and a large Compressor with a range from 38mm to 66mm are available. Also a single action Distractor, with a range from 5.0mm to 40mm, is available.

NOTE: The Rod Gripper may act as an intermediary point when Compressing/Distracting.

2. Cross Connector Application*

In the event that additional torsional stability is required, a Cross Connector* may be utilized. The Cross Connector should be applied after the construct has been assembled and final torquing of the Set Screws has taken place. Apply the Cross Connector to the Rods. Tighten the Set Screws with the green-handled Torque Wrench until an audible click is heard, applying 40in-lbs of torque to the Cross Connector Set Screws (tighten the Set Screws on the outer Hooks first and then the central Set Screw).



Select the appropriate size Cross Connector, in either a fixed or telescoping style

* The Crossbar™ Cross Connector was developed by SeaSpine, Inc. Crossbar is a trademark of SeaSpine, Inc.



The Fixed Cross Connectors may be contoured, if necessary



Torque the Set Screws on the Cross Connector as a final step

Additional Surgical Options (Continued)

3. Screw Height Adjustment/Screw Removal

The Screw Height Adjuster gives the surgeon the ability to adjust the dorsal height of the Multi-axial Screws and to remove the Screws intraoperatively (the Screw Height Adjuster can only be used with the Multi-axial Screws). The Screw Inserter Shaft, either Multi-axial or Fixed, with the Outer Sleeve can also be utilized for this purpose. For revision cases, use the Fixed Screw Inserter Shaft with the Outer Sleeve to remove both the Multi-axial and Fixed Screws.



Utilize the Screw Height Adjuster to adjust Multi-axial Screw height or to remove a Screw prior to final torquing



The Fixed Screw Inserter Shaft with the Outer Sleeve is utilized to remove both the Multi-axial and Fixed Screws

***Closure, Postoperative Care
And Implant Removal***

Closure

After implantation of the **Array Spinal System** is complete, closure is performed in layers over drains according to standard protocol.

Postoperative Care

To enhance recovery following implantation of the **Array Spinal System**, the patient should be mobilized after a few days. A TSLO brace may be used postoperatively to decrease excessive mobility. Walking-intensive activities should be restricted until otherwise advised by the surgeon. Postoperative radiographs should be taken periodically and reviewed to ensure fixation stability.

Implant Removal

Removal of the **Array Spinal System** is performed by reversing the order of the implant procedure. The Torque Wrench in combination with the Counter Torque must be used first to remove the Set Screws.

Indications For Use

The **Array Spinal System** is a non-cervical spinal fixation device intended for use as a pedicle Screw fixation system, a posterior Hook and sacral/iliac Screw fixation system, or as an anterolateral fixation system. Pedicle Screw fixation is limited to skeletally mature patients. The device is indicated for all the following indications regardless of the intended use: degenerative disc disease (defined as discogenic back pain with degeneration of the disc confirmed by history and radiographic studies), spondylolisthesis, trauma (i.e., fracture or dislocation), deformity or curvature (i.e., scoliosis, kyphosis, and lordosis), tumor, stenosis, pseudoarthrosis, and previous failed fusion.

Contraindications

The **Array Spinal System** is contraindicated in patients with spinal infection or inflammation, morbid obesity, mental illness, alcoholism or drug abuse, pregnancy, metal sensitivity/foreign body sensitivity, patients with inadequate tissue coverage over the operative site or open wounds local to the operative area.

Precautions

The safety and effectiveness of pedicle Screw spinal systems have been established only for spinal conditions with significant mechanical instability or deformity requiring fusion with instrumentation. These conditions are significant mechanical instability or deformity of the thoracic, lumbar, and sacral spine secondary to severe spondylolisthesis (grades 3 and 4) of the L5-S1 vertebra, degenerative spondylolisthesis with objective evidence of neurologic impairment, fracture, dislocation, scoliosis, kyphosis, spinal tumor, and previous failed fusion (pseudarthrosis). The safety and effectiveness of these devices for any other conditions are unknown.

Potential risks identified with the use of this device, which may require additional surgery, include device component fracture, loss of fixation, non-union, fracture of the vertebra, neurological injury, and vascular or visceral injury.

CAUTION: Federal Law (USA) restricts this device to sale by or on the order of a physician.

Product Information

Array Titanium Standard Implant And Instrument Case (Catalog No. 80611) Top Level A

Catalog #	Implants	Qty/Kit
94530	5.5mm Dia. x 30mm Multi-axial Screw	6
94535	5.5mm Dia. x 35mm Multi-axial Screw	6
94540	5.5mm Dia. x 40mm Multi-axial Screw	6
94545	5.5mm Dia. x 45mm Multi-axial Screw	6
94550	5.5mm Dia. x 50mm Multi-axial Screw	6
94555	5.5mm Dia. x 55mm Multi-axial Screw	4
94630	6.5mm Dia. x 30mm Multi-axial Screw	4
94635	6.5mm Dia. x 35mm Multi-axial Screw	6
94640	6.5mm Dia. x 40mm Multi-axial Screw	8
94645	6.5mm Dia. x 45mm Multi-axial Screw	8
94650	6.5mm Dia. x 50mm Multi-axial Screw	8
94655	6.5mm Dia. x 55mm Multi-axial Screw	4
94730	7.5mm Dia. x 30mm Multi-axial Screw	4
94735	7.5mm Dia. x 35mm Multi-axial Screw	4
94740	7.5mm Dia. x 40mm Multi-axial Screw	6
94745	7.5mm Dia. x 45mm Multi-axial Screw	6
94750	7.5mm Dia. x 50mm Multi-axial Screw	6
94755	7.5mm Dia. x 55mm Multi-axial Screw	4

Catalog #	Instruments	Qty/Kit
5006409	Set Screw Starter-Double End	2
94505	Pedicle Awl-QC Shaft	1
94506	Multi-axial Screw Inserter	2
94507	Screw Remover/Fixed Screw Inserter	1
94574	4.75mm Reamer Probe-QC Shaft	1
94575	5.5mm Reamer Probe-QC Shaft	1
94576	6.5mm Reamer Probe-QC Shaft	1
94577	7.5mm Reamer Probe-QC Shaft	1
94584	4.75mm Tap-QC Shaft	1
94585	5.5mm Tap-QC Shaft	1
94586	6.5mm Tap-QC Shaft	1
94587	7.5mm Tap-QC Shaft	1
94709	Set Screw Provisional Driver-QC Shaft 25 Hexalobe	2
5006408	Set Screw Provisional Driver-QC Shaft 30 Hexalobe	2

Top Level B

Catalog #	Instruments	Qty/Kit
94504	Multi-axial Screw Inserter Outer Sleeve	2
94605	Cannulated Rod Reducer	1

Catalog #	Implants	Qty/Kit
94950	Set Screws	30
94410	5.5mm Dia. x 510mm Alloy Rod	2
94029	5.5mm Dia. x 30mm Pre-Bent Rod	4
94039	5.5mm Dia. x 40mm Pre-Bent Rod	4
94049	5.5mm Dia. x 50mm Pre-Bent Rod	4
94059	5.5mm Dia. x 60mm Pre-Bent Rod	4
94069	5.5mm Dia. x 70mm Pre-Bent Rod	4
94079	5.5mm Dia. x 80mm Pre-Bent Rod	4
94089	5.5mm Dia. x 90mm Pre-Bent Rod	4
94099	5.5mm Dia. x 100mm Pre-Bent Rod	4

Middle Level

Catalog #	Instruments	Qty/Kit
5006408	Set Screw Provisional Driver-QC Shaft 30 hexalobe	1
94508	Pedicle Probe Curved	1
94509	Pedicle Probe Straight	1
5005951	Counter Torque Wrench	1
94522	QC Set Screw Torque Wrench 110	1
94612	Rod Length Measuring Template Wire	1
94613	Rod Holder	1
94614	Soft Tissue Retractor	1
94677	Rod Bender (5.5mm Dia.)	1

Bottom Level

Catalog #	Instruments	Qty/Kit
94686	Parallel Compressor	1
94687	Parallel Distractor	1
94697	QC Fixed T-Handle	1
94699	QC Fixed Handle	1
124797	QC Ratcheting T-Handle	1
124799	QC Ratcheting Handle	1

Array Titanium Cross Connector Case (Catalog No. 80620)

Catalog #	Implants	Qty/Kit
94669	XXSmall, Cross Connector	2
94670	XSmall, Cross Connector	2
94671	Small, Cross Connector	2
94672	Medium, Cross Connector	2
94673	Large, Cross Connector	2
94487	16mm Fixed Cross Connector	2
94488	18mm Fixed Cross Connector	2
94489	20mm Fixed Cross Connector	2
94490	22mm Fixed Cross Connector	2
94491	24mm Fixed Cross Connector	2

Catalog #	Instruments	Qty/Kit
94624	Cross Connector Torque Wrench	1
94610	Low Profile Rod Gripper	1
94516	Multi-axial Screw Height Adjuster	1
94523	Left Fixed Cross Connector Bender	1
94524	Right Fixed Cross Connector Bender	1
94606	Left Rod Rocker	1
94607	Right Rod Rocker	1

Array Titanium Extended Multi-axial Screw Case (Catalog No. 80650)

Catalog #	Implants	Qty/Tray
94532	Extended Multi-axial 5.5mm Dia. x 30mm	4
94537	Extended Multi-axial 5.5mm Dia. x 35mm	4
94542	Extended Multi-axial 5.5mm Dia. x 40mm	4
94547	Extended Multi-axial 5.5mm Dia. x 45mm	4
94552	Extended Multi-axial 5.5mm Dia. x 50mm	4
94557	Extended Multi-axial 5.5mm Dia. x 55mm	2
94632	Extended Multi-axial 6.5mm Dia. x 30mm	4
94637	Extended Multi-axial 6.5mm Dia. x 35mm	6
94642	Extended Multi-axial 6.5mm Dia. x 40mm	8
94647	Extended Multi-axial 6.5mm Dia. x 45mm	8
94652	Extended Multi-axial 6.5mm Dia. x 50mm	6
94657	Extended Multi-axial 6.5mm Dia. x 55mm	4
94732	Extended Multi-axial 7.5mm Dia. x 30mm	2
94737	Extended Multi-axial 7.5mm Dia. x 35mm	6
94742	Extended Multi-axial 7.5mm Dia. x 40mm	6
94747	Extended Multi-axial 7.5mm Dia. x 45mm	6
94752	Extended Multi-axial 7.5mm Dia. x 50mm	4
94757	Extended Multi-axial 7.5mm Dia. x 55mm	2

Catalog #	Instruments	Qty/Tray
5006121	Reduction Screw Inserter Outer Sleeve	2
5006122	Reduction Screw Counter Torque Wrench	1
5006123	Reduction Screw Break-Off Tool	1
5006124	Reduction Screw Break-Off Stabilizer	1

Product Information (Continued)

**Array Titanium Deformity Implant And Instrument Case
(Catalog No. 80630) Hook Caddy Top Level**

Catalog #	Implants	Qty/Kit
94906	Pedicle Hook, Small (6.0mm)	8
94907	Pedicle Hook, Medium (7.5mm)	8
94909	Pedicle Hook, Large (9.0mm)	8
94914	Left Angled Hook, Small (6.0mm)	4
94915	Right Angled Hook, Small (6.0mm)	4
94916	Left Angled Hook, Medium (7.5mm)	4
94917	Right Angled Hook, Medium (7.5mm)	4
94918	Left Angled Hook, Large (9.0mm)	4
94919	Right Angled Hook, Large (9.0mm)	4
94926	Wide Laminar Hook, Small (6.0mm)	8
94927	Wide Laminar Hook, Medium (7.5mm)	8
94929	Wide Laminar Hook, Large (9.0mm)	8
94936	Narrow Laminar Hook, Small (6.0mm)	8
94937	Narrow Laminar Hook, Medium (7.5mm)	8
94939	Narrow Laminar Hook, Large (9.0mm)	8
94946	Narrow Reduced Laminar Hook, Small (6.0mm)	4
94947	Narrow Reduced Laminar Hook, Medium (7.5mm)	4
94949	Narrow Reduced Laminar Hook, Large (9.0mm)	4
94964	Left Offset Hook, Small (6.0mm)	4
94965	Right Offset Hook, Small (6.0mm)	4
94966	Left Offset Hook, Medium (7.5mm)	4
94967	Right Offset Hook, Medium (7.5mm)	4
94968	Left Offset Hook, Large (9.0mm)	4
94969	Right Offset Hook, Large (9.0mm)	4
94976	Angled Blade Hook, Small (6.0mm)	4
94977	Angled Blade Hook, Medium (7.5mm)	4
94979	Angled Blade Hook, Large (9.0mm)	4
94986	Extended Hook, Small (6.0mm)	4
94987	Extended Hook, Medium (7.5mm)	4
94989	Extended Hook, Large (9.0mm)	4

Hook Caddy Top Level

Catalog #	Implants (Continued)	Qty/Kit
94994	Left Transverse Process Hook, Small (6.0mm)	4
94995	Right Transverse Process Hook, Small (6.0mm)	4
94996	Left Transverse Process Hook, Medium (7.5mm)	4
94997	Right Transverse Process Hook, Medium (7.5mm)	4
94998	Left Transverse Process Hook, Large (9.0mm)	4
94999	Right Transverse Process Hook, Large (9.0mm)	4

Middle Level

Catalog #	Instruments	Qty/Kit
94600	Rod Rocker	2
94616	Left In Situ Rod Bender	1
94617	Right In Situ Rod Bender	1
94621	Left Lateral Rod Bender	1
94622	Right Lateral Rod Bender	1
94629	Short Angled Hook Holder	1
94634	Vertical Hook Holder	2
94639	Angled Hook Holder	2

Bottom Level

Catalog #	Instruments	Qty/Kit
94411	5.5mm Dia. x 510mm-CP Ti Rod	4
94510	Pedicle Hook Starter	1
94511	Wide Laminar Hook Starter	1
94512	Medium Width Laminar Hook Starter	1
94513	Narrow Laminar Hook Starter	1
94515	Thoracic Hook Starter	1
94519	Hook Impactor	1
94544	Straight Rod Pusher	1
94611	Power Rod Gripper (5.5mm Dia. Rod)	2
94644	Rod Template	2

Array Titanium Supplemental Implant And Instrument Case (Catalog No. 80640) Top Level

Catalog #	Description	Qty/Kit
94425	4.75mm Dia. x 25mm Multi-axial Screw	12
94430	4.75mm Dia. x 30mm Multi-axial Screw	12
94435	4.75mm Dia. x 35mm Multi-axial Screw	12
94440	4.75mm Dia. x 40mm Multi-axial Screw	12
94445	4.75mm Dia. x 45mm Multi-axial Screw	6
94450	4.75mm Dia. x 50mm Multi-axial Screw	6
94426	4.75mm Dia. x 25mm Fixed Screw	12
94431	4.75mm Dia. x 30mm Fixed Screw	12
94436	4.75mm Dia. x 35mm Fixed Screw	12
94441	4.75mm Dia. x 40mm Fixed Screw	12
94446	4.75mm Dia. x 45mm Fixed Screw	6
94451	4.75mm Dia. x 50mm Fixed Screw	6
94531	5.5mm Dia. x 30mm Fixed Screw	12
94536	5.5mm Dia. x 35mm Fixed Screw	12
94541	5.5mm Dia. x 40mm Fixed Screw	12
94546	5.5mm Dia. x 45mm Fixed Screw	12
94551	5.5mm Dia. x 50mm Fixed Screw	4
94556	5.5mm Dia. x 55mm Fixed Screw	4
94631	6.5mm Dia. x 30mm Fixed Screw	4

Top Level

Catalog #	Description (Continued)	Qty/Kit
94636	6.5mm Dia. x 35mm Fixed Screw	4
94641	6.5mm Dia. x 40mm Fixed Screw	4
94646	6.5mm Dia. x 45mm Fixed Screw	4
94651	6.5mm Dia. x 50mm Fixed Screw	4
94656	6.5mm Dia. x 55mm Fixed Screw	4
94731	7.5mm Dia. x 30mm Fixed Screw	4
94736	7.5mm Dia. x 35mm Fixed Screw	4
94741	7.5mm Dia. x 40mm Fixed Screw	4
94746	7.5mm Dia. x 45mm Fixed Screw	4
94751	7.5mm Dia. x 50mm Fixed Screw	4
94756	7.5mm Dia. x 55mm Fixed Screw	4
94507	Screw Remover/Fixed Screw Inserter	1
94534	Thoracic Pedicle Probe	1

5005670	4.0mm Dia. x 20mm Multi-axial Screw, Ti	n/a*
5005671	4.0mm Dia. x 25mm Multi-axial Screw, Ti	n/a*
5005672	4.0mm Dia. x 30mm Multi-axial Screw, Ti	n/a*
5005673	4.0mm Dia. x 35mm Multi-axial Screw, Ti	n/a*
5005674	4.0mm Dia. x 40mm Multi-axial Screw, Ti	n/a*
5005675	4.0mm Dia. x 45mm Multi-axial Screw, Ti	n/a*
5005679	4.0mm Dia. x 20mm Fixed Screw, Ti	n/a*
5005680	4.0mm Dia. x 25mm Fixed Screw, Ti	n/a*
5005681	4.0mm Dia. x 30mm Fixed Screw, Ti	n/a*
5005682	4.0mm Dia. x 35mm Fixed Screw, Ti	n/a*
5005683	4.0mm Dia. x 40mm Fixed Screw, Ti	n/a*
5005684	4.0mm Dia. x 45mm Fixed Screw, Ti	n/a*

Bottom Level

Catalog #	Instruments	Qty/Kit
94422	Solid Rod Rocker	1
94615	Derotation Tube	3
94659	Deformity Compressor, Small	1
94667	Deformity Compressor, Large	1
94668	Deformity Distractor	1

*Titanium 4.0mm Dia. Screws are not available in kits, must order separately

Product Information (Continued)

Array Titanium Iliac Fixation Case (Catalog No. 80660)

Top Level

Catalog #	Description	Qty/Kit
94560	5.5mm Dia. x 60mm Multi-axial Screw	4
94609	5.5mm Dia. x 70mm Multi-axial Screw	4
94660	6.5mm Dia. x 60mm Multi-axial Screw	4
94674	6.5mm Dia. x 70mm Multi-axial Screw	4
94676	6.5mm Dia. x 80mm Multi-axial Screw	4
5005817	6.5mm Dia. x 90mm Multi-axial Screw	4
94760	7.5mm Dia. x 60mm Multi-axial Screw	4
94679	7.5mm Dia. x 70mm Multi-axial Screw	4
94689	7.5mm Dia. x 80mm Multi-axial Screw	4
5005825	7.5mm Dia. x 90mm Multi-axial Screw	4
94860	8mm Dia. x 60mm Multi-axial Screw	4
94698	8mm Dia. x 70mm Multi-axial Screw	4
5005645	8mm Dia. x 80mm Multi-axial Screw	4
5005833	8mm Dia. x 90mm Multi-axial Screw	4
94561	5.5mm Dia. x 60mm Fixed Screw	4
94571	5.5mm Dia. x 70mm Fixed Screw	4
94661	6.5mm Dia. x 60mm Fixed Screw	4
94593	6.5mm Dia. x 70mm Fixed Screw	4
94595	6.5mm Dia. x 80mm Fixed Screw	4
5005857	6.5mm Dia. x 90mm Fixed Screw	4
94761	7.5mm Dia. x 60mm Fixed Screw	4
94597	7.5mm Dia. x 70mm Fixed Screw	4
94599	7.5mm Dia. x 80mm Fixed Screw	4
5005865	7.5mm Dia. x 90mm Fixed Screw	4
94862	8.5mm Dia. x 60mm Fixed Screw	4
5005651	8.5mm Dia. x 70mm Fixed Screw	4
5005653	8.5mm Dia. x 80mm Fixed Screw	4
5005881	8.5mm Dia. x 90mm Fixed Screw	4
5005666	Short Lateral Connector	3
5005667	Medium Lateral Connector	3
5005668	Long Lateral Connector	3
5005660	Splined Set Screw	6

Array Stainless Steel Standard Implant Case

(Catalog No. 5500126) - Top Level

Catalog #	Description	Qty/Kit
5006425	4.75mm Dia. x 25mm Multi-axial Screw	12
5006426	4.75mm Dia. x 30mm Multi-axial Screw	12
5006427	4.75mm Dia. x 35mm Multi-axial Screw	12
5006428	4.75mm Dia. x 40mm Multi-axial Screw	12
5006429	4.75mm Dia. x 45mm Multi-axial Screw	6
5006430	4.75mm Dia. x 50mm Multi-axial Screw	6
5006446	5.5mm Dia. x 30mm Multi-axial Screw	6
5006447	5.5mm Dia. x 35mm Multi-axial Screw	6
5006448	5.5mm Dia. x 40mm Multi-axial Screw	6
5006449	5.5mm Dia. x 45mm Multi-axial Screw	6
5006450	5.5mm Dia. x 50mm Multi-axial Screw	6
5006451	5.5mm Dia. x 55mm Multi-axial Screw	4
5006466	6.5mm Dia. x 30mm Multi-axial Screw	4
5006467	6.5mm Dia. x 35mm Multi-axial Screw	6
5006468	6.5mm Dia. x 40mm Multi-axial Screw	8
5006469	6.5mm Dia. x 45mm Multi-axial Screw	8
5006470	6.5mm Dia. x 50mm Multi-axial Screw	8
5006471	6.5mm Dia. x 55mm Multi-axial Screw	4
5006486	7.5mm Dia. x 30mm Multi-axial Screw	4
5006487	7.5mm Dia. x 35mm Multi-axial Screw	4
5006488	7.5mm Dia. x 40mm Multi-axial Screw	6
5006489	7.5mm Dia. x 45mm Multi-axial Screw	6
5006490	7.5mm Dia. x 50mm Multi-axial Screw	6
5006491	7.5mm Dia. x 55mm Multi-axial Screw	4
5006400	30 Hexalobe Set Screws	30
5006405	5.5mm Dia. x 510mm Rod w/Hex-Medium	2
5006407	5.5mm Dia. x 510mm Rod w/Hex-Hard	2
5006750	XXSmall, Cross Connector	2
5006751	XSmall, Cross Connector	2
5006752	Small, Cross Connector	2
5006753	Medium, Cross Connector	2
5006754	Large, Cross Connector	2

Top Level

Catalog #	Description (Continued)	Qty/Kit
5006760	16mm Fixed Cross Connector	2
5006761	18mm Fixed Cross Connector	2
5006762	20mm Fixed Cross Connector	2
5006763	22mm Fixed Cross Connector	2
5006764	24mm Fixed Cross Connector	2

**Array Stainless Steel Standard Instrument Case
(Catalog No. 5500127) - Top Level**

Catalog #	Description	Qty/Kit
94697	Fixed T-Handle	1
94699	Fixed Handle	1
124797	Ratcheting Inserter T-Handle	1
124799	Ratcheting Inserter Handle	1
91055	Pedicle Sound	2
5006409	30 Hexalobe Double End Set Screw Starter	2
94504	Screw Inserter Outer Sleeve	2
94505	Pedicle Awl Shaft	1
94506	Multi-axial Screw Inserter	2
94507	Screw Remover/Fixed Screw Inserter	2
94508	Pedicle Probe Curved	1
94509	Pedicle Probe Straight	1
5005951	Counter Torque Wrench	1
5005725	4.0mm Reamer Probe	1
94574	4.75mm Reamer Probe	1
94575	5.5mm Reamer Probe	1
94576	6.5mm Reamer Probe	1
94577	7.5mm Reamer Probe	1
5005724	4.0mm Tap	1
94584	4.75mm Tap	1
94585	5.5mm Tap	1
94586	6.5mm Tap	1
94587	7.5mm Tap	1
94605	Cannulated Rod Reducer	1
94613	Rod Holder	1

Top Level

Catalog #	Description (Continued)	Qty/Kit
94614	Soft Tissue Retractor	1
94677	Rod Bender	1
94709	25 Hexalobe Provisional Driver	3
5006408	30 hexalobe Provisional Driver	2
94522	Torque Wrench, 110in-lb	1
94665	Cross Connector Measuring Template	1
94523	Fixed Cross Connector Bender, Left	1
94524	Fixed Cross Connector Bender, Right	1
94423	Multi-axial Screw Height Adjuster - long	1
94606	Rod Rocker, Left	1
94607	Rod Rocker, Right	1
94610	Low Profile Rod Gripper	1
94624	Cross Connector Torque Wrench	1

Middle Level

Catalog #	Description	Qty/Kit
94613	Rod Holder - 5.5mm	1
94614	Soft Tissue Retractor	1
94677	Rod Bender, 5.5mm	1
94522	QC Torque Wrench	1
94423	Multi-axial Screw Height Adjuster - Long	1

Bottom Level

Catalog #	Description	Qty/Kit
94605	Cannulated Rod Reducer	1
94709	25 Hexalobe Provisional Driver	3
5006408	30 Hexalobe Provisional Driver	2
94523	Fixed Cross Connector Bender, Left	1
94524	Fixed Cross Connector Bender, Right	1
94606	Rod Rocker, Left	1
94607	Rod Rocker, Right	1
94610	Low Profile Rod Gripper	1
94624	Cross Connector Torque Wrench	1

Product Information (Continued)

**Array Stainless Steel Deformity Implant Case
(Catalog No. 5500128) - Hook Caddy Top Level**

Catalog #	Description	Qty/Kit
5006700	Pedicle Hook, Small (6.0mm)	8
5006701	Pedicle Hook, Medium (7.5mm)	8
5006702	Pedicle Hook, Large (9.0mm)	8
5006703	Left Angled Hook, Small (6.0mm)	4
5006704	Right Angled Hook, Small (6.0mm)	4
5006705	Left Angled Hook, Medium (7.5mm)	4
5006706	Right Angled Hook, Medium (7.5mm)	4
5006707	Left Angled Hook, Large (9.0mm)	4
5006708	Right Angled Hook, Large (9.0mm)	4
5006709	Wide Lamina Hook, Small (6.0mm)	8
5006710	Wide Lamina Hook, Medium (7.5mm)	8
5006711	Wide Lamina Hook, Large (9.0mm)	8
5006712	Narrow Lamina Hook, Small (6.0mm)	8
5006713	Narrow Lamina Hook, Medium (7.5mm)	8
5006714	Narrow Lamina Hook, Large (9.0mm)	8
5006715	Narrow Reduced Lamina Hook, Small (6.0mm)	4
5006716	Narrow Reduced Lamina Hook, Medium (7.5mm)	4
5006717	Narrow Reduced Lamina Hook, Large (9.0mm)	4
5006718	Left Offset Hook, Small (6.0mm)	4
5006719	Right Offset Hook, Small (6.0mm)	4
5006720	Left Offset Hook, Medium (7.5mm)	4
5006721	Right Offset Hook, Medium (7.5mm)	4
5006722	Left Offset Hook, Large (9.0mm)	4
5006723	Right Offset Hook, Large (9.0mm)	4
5006724	Angled Blade Hook, Small (6.0mm)	4
5006725	Angled Blade Hook, Medium (7.5mm)	4
5006726	Angled Blade Hook, Large (9.0mm)	4
5006727	Extended Hook, Small (6.0mm)	4
5006728	Extended Hook, Medium (7.5mm)	4
5006729	Extended Hook, Large (9.0mm)	4
5006730	Left Transverse Process Hook, Small (6.0mm)	4
5006731	Right Transverse Process Hook, Small (6.0mm)	4
5006732	Left Transverse Process Hook, Medium (7.5mm)	4
5006733	Right Transverse Process Hook, Medium (7.5mm)	4
5006734	Left Transverse Process Hook, Large (9.0mm)	4
5006735	Right Transverse Process Hook, Large (9.0mm)	4

Fixed Screw Caddy Middle Level

Catalog #	Description	Qty/Kit
5006525	4.0mm Dia. x 20mm Fixed Screw SST	4
5006526	4.0mm Dia. x 25mm Fixed Screw SST	4
5006527	4.0mm Dia. x 30mm Fixed Screw SST	6
5006528	4.0mm Dia. x 35mm Fixed Screw SST	6
5006529	4.0mm Dia. x 40mm Fixed Screw SST	6
5006530	4.0mm Dia. x 45mm Fixed Screw SST	4
5006535	4.75mm Dia. x 25mm Fixed Screw SST	12
5006536	4.75mm Dia. x 30mm Fixed Screw SST	12
5006537	4.75mm Dia. x 35mm Fixed Screw SST	12
5006538	4.75mm Dia. x 40mm Fixed Screw SST	12
5006539	4.75mm Dia. x 45mm Fixed Screw SST	6
5006540	4.75mm Dia. x 50mm Fixed Screw SST	6
5006556	5.5mm Dia. x 30mm Fixed Screw SST	12
5006557	5.5mm Dia. x 35mm Fixed Screw SST	12
5006558	5.5mm Dia. x 40mm Fixed Screw SST	12
5006559	5.5mm Dia. x 45mm Fixed Screw SST	12
5006560	5.5mm Dia. x 50mm Fixed Screw SST	4
5006561	5.5mm Dia. x 55mm Fixed Screw SST	4
5006576	6.5mm Dia. x 30mm Fixed Screw SST	4
5006577	6.5mm Dia. x 35mm Fixed Screw SST	4
5006578	6.5mm Dia. x 40mm Fixed Screw SST	4
5006579	6.5mm Dia. x 45mm Fixed Screw SST	4
5006580	6.5mm Dia. x 50mm Fixed Screw SST	4
5006581	6.5mm Dia. x 55mm Fixed Screw SST	4
5006596	7.5mm Dia. x 30mm Fixed Screw SST	4
5006597	7.5mm Dia. x 35mm Fixed Screw SST	4
5006598	7.5mm Dia. x 40mm Fixed Screw SST	4
5006599	7.5mm Dia. x 45mm Fixed Screw SST	4
5006600	7.5mm Dia. x 50mm Fixed Screw SST	4
5006601	7.5mm Dia. x 55mm Fixed Screw SST	4

**Array Stainless Steel Deformity Instrument Case
(Catalog No. 5500129) - Top Level**

Catalog #	Description	Qty/Kit
94510	Pedicle Hook Starter	1
94511	Wide Hook Starter	1
94512	Medium Width Hook Starter	1
94513	Narrow Hook Starter	1
94515	Thoracic Hook Starter	1
94519	Hook Impactor	1
94544	Straight Rod Pusher	1
94534	Thoracic Pedicle Probe	1
94644	Malleable Trial Rod	2

Middle Level

Catalog #	Description	Qty/Kit
94600	Rod Rocker	2
94616	In Situ Rod Bender, Left	1
94617	In Situ Rod Bender, Right	1
94621	Lateral Rod Bender, Left	1
94622	Lateral Rod Bender, Right	1
94629	Short Angled Hook Holder	1
94634	Vertical Hook Holder	2
94639	Angled Hook Holder	2

Bottom Level

Catalog #	Description	Qty/Kit
94422	Rod Rocker, Solid	1
94611	Rod Gripper 5.5mm	2
94615	Translation Tube	3
94659	Parallel Compressor, Small	1
94667	Parallel Compressor, Large	1
94668	Distractor	1

**Array Stainless Steel Iliac Fixation Case
(Catalog No. 5500130)**

Catalog #	Description	Qty/Kit
5006452	5.5mm Dia. x 60mm Multi-axial Screw, SST	4
5006454	5.5mm Dia. x 70mm Multi-axial Screw, SST	4
5006472	6.5mm Dia. x 60mm Multi-axial Screw, SST	4
5006474	6.5mm Dia. x 70mm Multi-axial Screw, SST	4
5006476	6.5mm Dia. x 80mm Multi-axial Screw, SST	4
5006478	6.5mm Dia. x 90mm Multi-axial Screw, SST	4
5006492	7.5mm Dia. x 60mm Multi-axial Screw, SST	4
5006494	7.5mm Dia. x 70mm Multi-axial Screw, SST	4
5006496	7.5mm Dia. x 80mm Multi-axial Screw, SST	4
5006498	7.5mm Dia. x 90mm Multi-axial Screw, SST	4
5006512	8.0mm Dia. x 60mm Multi-axial Screw, SST	4
5006514	8.0mm Dia. x 70mm Multi-axial Screw, SST	4
5006516	8.0mm Dia. x 80mm Multi-axial Screw, SST	4
5006518	8.0mm Dia. x 90mm Multi-axial Screw, SST	4
5006562	5.5mm Dia. x 60mm Fixed Screw, SST	4
5006564	5.5mm Dia. x 70mm Fixed Screw, SST	4
5006582	6.5mm Dia. x 60mm Fixed Screw, SST	4
5006584	6.5mm Dia. x 70mm Fixed Screw, SST	4
5006586	6.5mm Dia. x 80mm Fixed Screw, SST	4
5006588	6.5mm Dia. x 90mm Fixed Screw, SST	4
5006602	7.5mm Dia. x 60mm Fixed Screw, SST	4
5006604	7.5mm Dia. x 70mm Fixed Screw, SST	4
5006606	7.5mm Dia. x 80mm Fixed Screw, SST	4
5006608	7.5mm Dia. x 90mm Fixed Screw, SST	4
5006642	8.5mm Dia. x 60mm Fixed Screw, SST	4
5006644	8.5mm Dia. x 70mm Fixed Screw, SST	4
5006646	8.5mm Dia. x 80mm Fixed Screw, SST	4
5006648	8.5mm Dia. x 90mm Fixed Screw, SST	4
5006781	Short Lateral Connector, SST	3
5006782	Medium Lateral Connector, SST	3
5006783	Long Lateral Connector, SST	3
5006780	Splined Set Screw, SST	6

Further Information

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