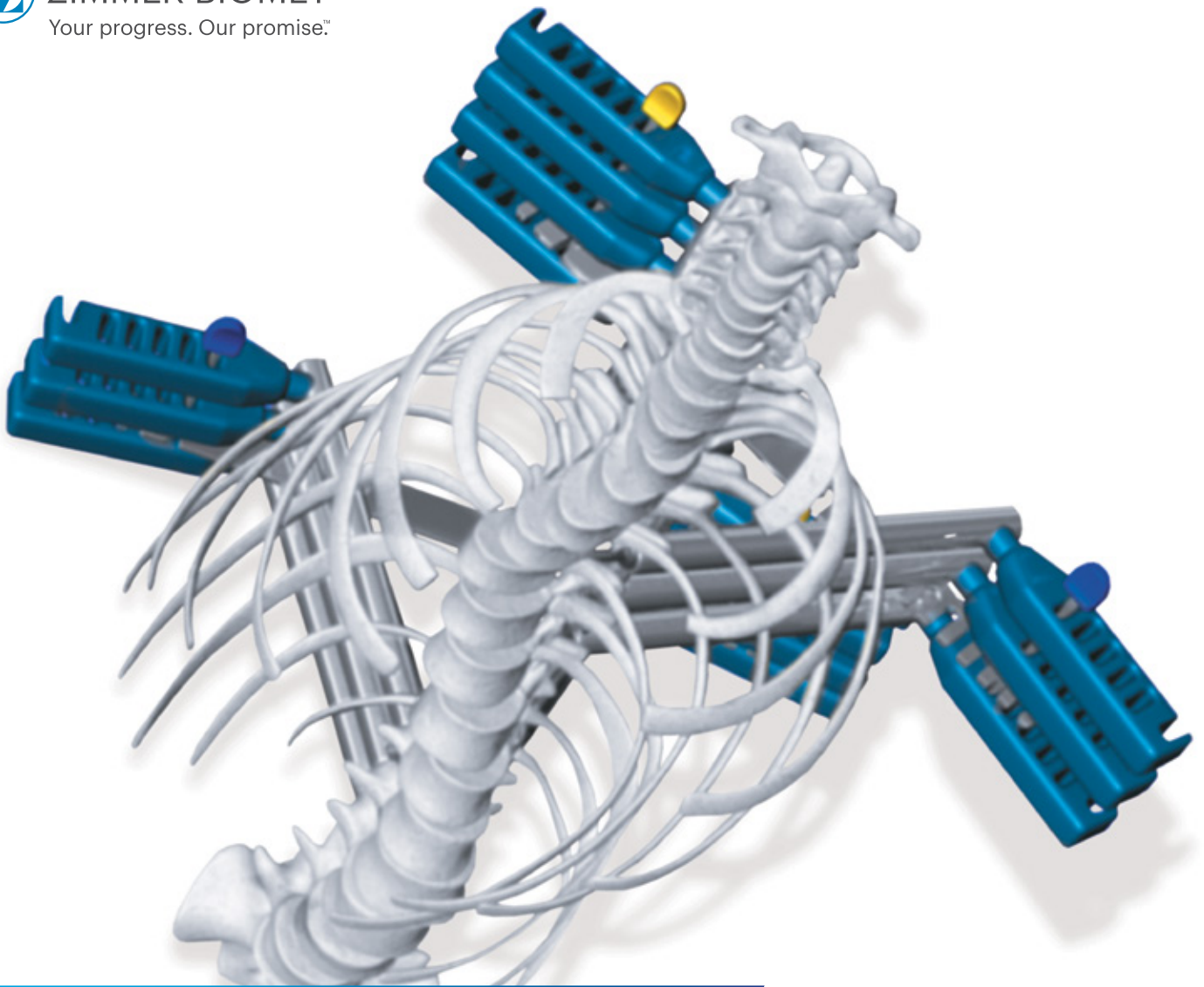




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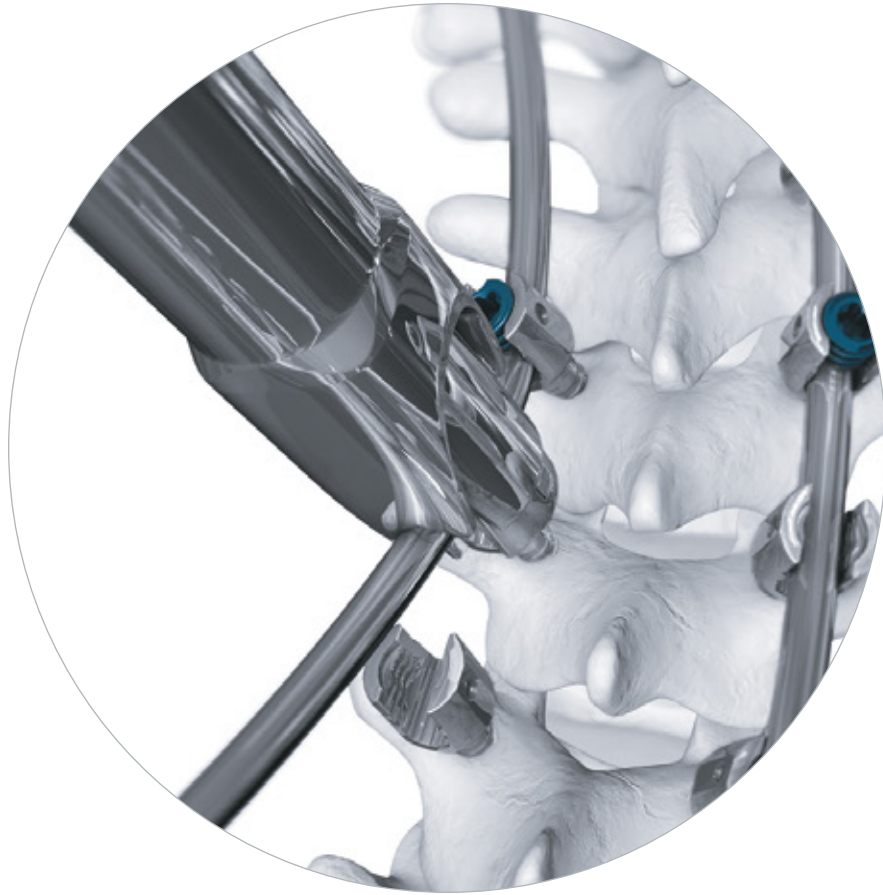


Thoracolumbar Solutions

**Polaris™**  
Deformity System

**Trivium®**  
Derotation System

Surgical Technique Guide



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*Zimmer Biomet Spine does not practice medicine. This technique was developed in conjunction with health care professionals. This document is intended for surgeons and is not intended for laypersons. Each surgeon should exercise his or her own independent judgment in the diagnosis and treatment of an individual patient, and this information does not purport to replace the comprehensive training surgeons have received. As with all surgical procedures, the technique used in each case will depend on the surgeon's medical judgment as the best treatment for each patient. Results will vary based on health, weight, activity and other variables. Not all patients are candidates for this product and/or procedure.*

## HOOK SITE PREPARATION AND INSERTION



**Hook starters** are used to prepare the hook implant site. Various starters match the hook style desired.

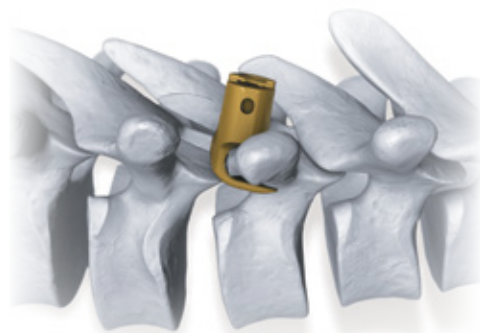


### PEDICLE HOOK

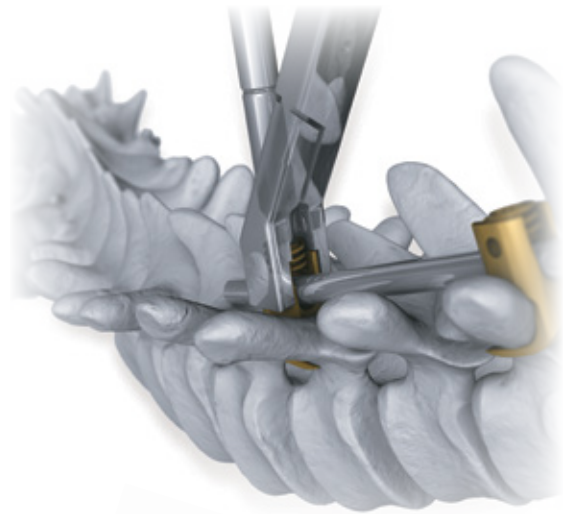
The Polaris System **pedicle hook** is designed to obtain purchase in the thoracic spine from the tenth thoracic vertebra to the first thoracic vertebra. These hooks are placed in an up-going fashion, allowing the bifurcated blade of the hook to engage the pedicle at that level.



The pedicle hook starter is used to prepare the site



Hook is placed up-going on the pedicle



## STEP 1

- 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 2mm–3mm proximally. The second cut with a quarter-inch osteotome is performed in a transverse plane from the lateral edge of the facet to the medial cut. Approximately 6mm of inferior facet should remain when measured from the base of the transverse process.
- The osteotomized bone is removed and the facet cartilage is curetted.
- 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.
- The **angled hook holder** is cannulated to align the **plug starter**.
- The hook impactor incorporates a strike plate and may be gently tapped to allow for better hook control and to securely seat the hook onto the pedicle.

## HOOK SITE PREPARATION AND INSERTION (*continued*)



Narrow blade,  
angled laminar hooks



Wide and narrow blades,  
laminar hooks



Offset hooks

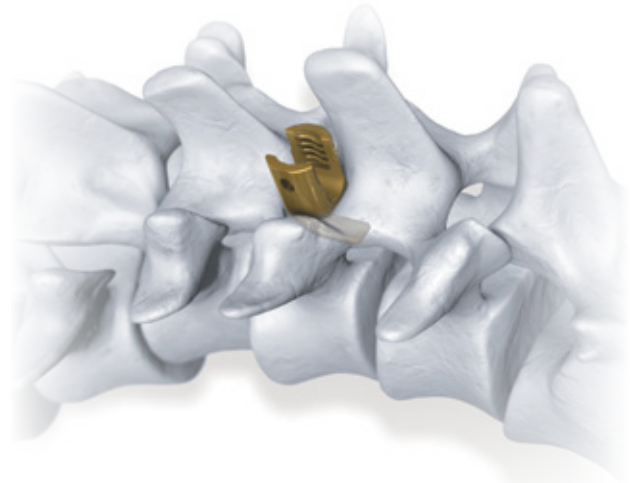
Standard  
laminar hook

Reduced throat  
laminar hook



Extended body  
laminar hook

Standard  
laminar hook



Standard laminar hook placed up-going

## LAMINAR HOOKS

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 infralaminar or supralaminar position depending upon the appropriate level. Care should be 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.

Polaris **thoracic** and **lumbar laminar hooks** may be placed in a supralaminar or infralaminar position depending on the location of the spine. A wide selection of Polaris 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.

## STEP 1, OPTION A

### Hook Selection

- When placing hooks down-going, **left hooks** are used on the right side and vice versa. This allows the tulip to be in-line with the other hooks in place.

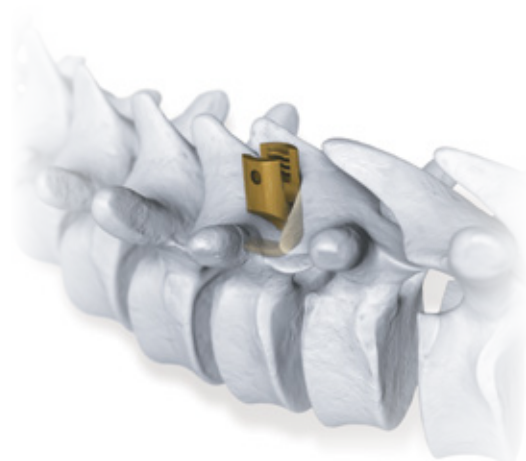


*Offset laminar hook placed down-going*

### STEP 1, OPTION B

---

- In the lower lumbar spine, larger **offset laminar hooks** are placed in an up-going fashion in order to maintain co-linearity of the saddles of the implants.
- In some situations, particularly when a sub-adjacent pedicle screw is in place, the offset laminar hook is ideal for placement in the transverse process location.



*Reduced laminar hook placed down-going*

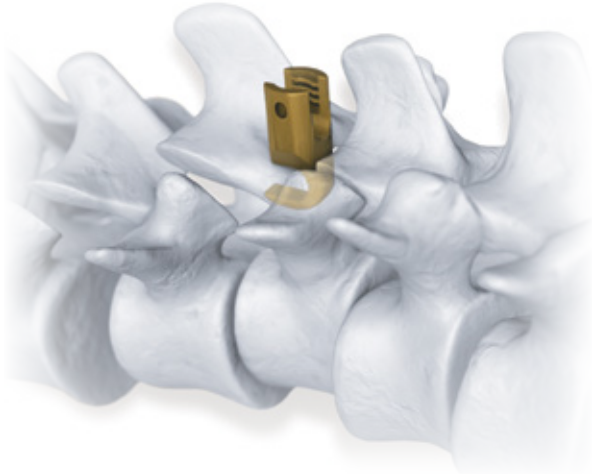
### STEP 1, OPTION C

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- **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 crowding of the blade of the hook into the spinal canal.



## HOOK SITE PREPARATION AND INSERTION (*continued*)



*Extended body hook placed down-going*

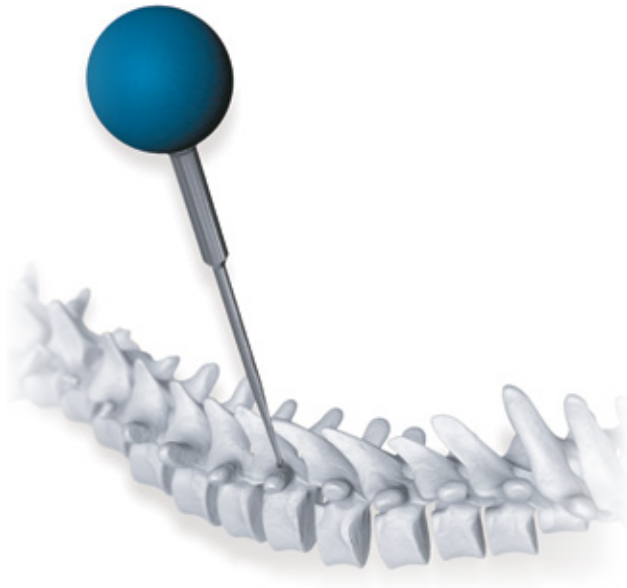
### STEP 1, OPTION D

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- **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 proximally and distally with the other implants.



## SCREW PLACEMENT



The thoracic probe is used to prepare the pedicle hole



Multi-axial screw offering



Fixed screw offering

### STEP 2

- The Polaris System **pedicle screws** are placed within those vertebral bodies determined by the surgeon to be appropriate in size and location. Pre-operative and intra-operative imaging is valuable to assess the size of the pedicle and its ideal starting point. Image guidance may offer information about screw trajectory for the pedicle screw. Pedicle screw placement may be performed in several ways according to surgeon experience and preference.
- The Polaris System provides a full line of options for pedicle screw fixation with fixed and multi-axial screws with diameters ranging from 4.0mm to 8.5mm and lengths ranging 20mm to 55mm. Pedicle screws are inserted using established anatomical and fluoroscopic landmarks. Various pedicle finders, probes and taps are available to assist the surgeon in development, probing and measurements of the pedicle.

**Note:** All implants are available in stainless steel.

Self-tapping screws are available in several diameters and lengths. The appropriate screw length is determined by using the depth markings on the **pedicle probe**, or by feeling the anterior wall with the sound and marking it with a hemostat.

- Attach the selected screw driver to the chosen **quick-connect handle** by pulling back on the plunger at the base of the quick connect mechanism, inserting the shaft and releasing the plunger to lock the shaft in place.
- Hold the screw by the screw shaft and load the screw onto the tip of the **fixed** or **multi-axial screw driver**.

## SCREW SELECTION AND INSERTION



Multi-axial screw inserter

### STEP 3, OPTION A

#### Standard Multi-axial Screw Inserter

- Use with the following screws:
  - **Polaris 5.5 multi-axial screws**
  - **Polaris 5.5 iliac multi-axial screws**
  - **Polaris 6.35 Ti 7.5mm and 8.5mm diameter screws**
  - **Polaris 6.35 stainless steel multi-axial screws**
  - **Polaris 6.35 iliac multi-axial screws**
- To use the standard multi-axial screw inserter, ensure the male pentalobe at the distal tip of the driver is fully seated within the female pentalobe located at the top of the screw shaft.
- Slide the outer sleeve of the inserter down into the seat of the screw, and then turn the round, knurled grip in a clockwise direction to thread the outer shaft into the seat.

- Turn until tight and confirm that the screw is straight and secure in the driver. If it is not, remove the screw from the driver and repeat steps above. The screw is advanced into the pedicle to the desired depth.
- During insertion, guide the driver by holding the black sleeve on the shaft of the instrument.
- The driver is disengaged from the screw by turning the round, knurled grip in a counterclockwise direction, pulling the outer sleeve up and lifting the driver from the screw.

**Note:** *Polaris™ 5.5 Titanium Spinal System 4mm diameter screws are not for use with cobalt chrome alloy rods.*

**Optional:** *Multi-axial screw driver with two modes: LOCKING and NON-LOCKING capacity. (This must be ordered separately by the sales representative).*

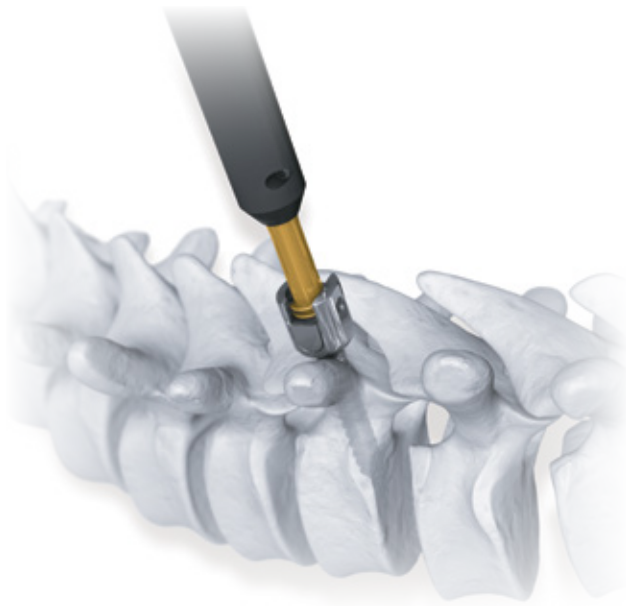


Load the screw driver

### STEP 3, OPTION A (continued)

- If using the LOCKING setting, ensure the knob located on the knurled grip is rotated so that the arrow points to the “ON” icon.
- Place the tip of the inserter into the seat of the screw, and then turn the knurled grip in a clockwise direction to thread the outer shaft into the seat. The driver will begin to “ratchet” when it is almost fully engaged. It will stop ratcheting when the screw is fully loaded.
- Confirm the screw is straight and secure in the driver. The screw is advanced into the pedicle to the desired depth. During insertion, guide the driver by holding the black sleeve on the shaft of the instrument.
- The driver is disengaged from the screw by rotating the knob to point to the “OFF” icon, then unthreading the outer sleeve from the screw. The surgeon can also push and hold the button located on the opposite side of the knob.
- Finally, pull the outer sleeve up and lift the driver from the screw.
- If the surgeon prefers the NON-LOCKING setting, ensure the knob on the knurled grip is rotated so that the arrow points to the “OFF” icon.
- Place the tip of the inserter into the seat of the screw, and then turn the knurled grip in a clockwise direction to thread the outer shaft into the seat.
- Turn until tight and confirm that the screw is straight and secure in the driver. The screw is advanced into the pedicle to the desired depth. During insertion, guide the driver by holding the black sleeve on the shaft of the instrument.
- The driver is disengaged from the screw by turning the round, knurled grip in a counterclockwise direction, pulling the outer sleeve up and lifting from the screw.

## SCREW SELECTION AND INSERTION (*continued*)



*Insert the screw into the pedicle at the appropriate angle and depth*

### STEP 3, OPTION B

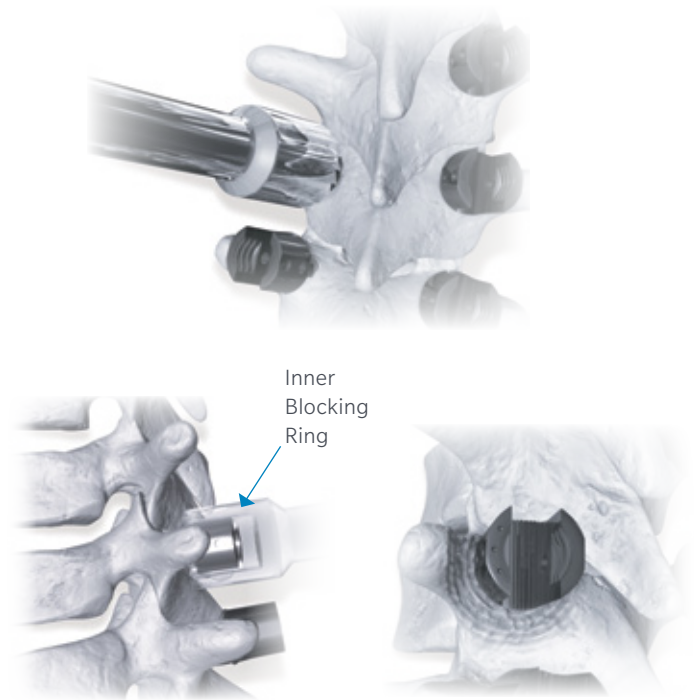
#### Polaris 5.5 Fixed Screw Inserter

- To use the **standard fixed screw inserter**, ensure the male blunt tip at the distal end of the driver is fully seated within the seat of the screw shaft.
- Slide the outer sleeve of the inserter down into the seat of the screw, and then turn the round, knurled grip in a clockwise direction to thread the outer shaft into the seat.
- Turn until tight and confirm that the screw is straight and secure in the driver. If it is not, remove the screw from the driver and repeat steps above. The screw is advanced into the pedicle to the desired depth.
- During insertion, guide the driver by holding the black sleeve on the shaft of the instrument.
- The driver is disengaged from the screw by turning the round, knurled grip in a counterclockwise direction, pulling the outer sleeve up and lifting the driver from the screw.

### STEP 3, OPTION C

#### Polaris 6.35 System Multi-axial Screw Driver and Fixed Screw Inserter

- When using the **multi-axial screw driver**, first ensure that the knurled T is at the top of the driver shaft. This prevents the outer shaft from prematurely dropping into the screw head.
- Next, hold the screw by the screw shaft and load the screw onto the tip of the driver. Ensure that the male hex end at the top of the screw shaft is fully seated into the female hex of the driver.
- Then turn the knurled T in a clockwise direction to thread the outer shaft into the seat. Confirm the screw is straight and secure in the driver.
- The screw is advanced into the pedicle to the desired depth. During insertion, guide the driver by holding the blue sleeve on the shaft of the instrument.
- The driver is disengaged from the screw by rotating the knurled T in a counterclockwise direction, and then lifting the driver from the screw.



*Bone planer is used to remove small amounts of bone around screw to help facilitate instrument engagement*

- Fixed head screws are inserted using the **fixed screw driver**. Attach the fixed screw driver shaft to the **quick-connect handle**.
- Ensure that the knurled T is at the top of the driver shaft. This prevents the outer shaft from prematurely dropping into the screw head.
- Next, hold the screw by the screw shaft and load the screw into the tip of the fixed driver.
- Then, turn the knurled T in a clockwise direction to thread the outer shaft into the seat. Confirm the screw is secure in the driver.
- The screw is advanced into the pedicle to the desired depth. The fixed driver is disengaged from the screw by rotating the knurled T in a counterclockwise direction, and then lifting the driver from the screw.

#### STEP 4

- The **bone planer** is used to remove bone that may be hindering engagement of instruments onto the screw, before or after the rod is introduced (e.g., base of thoracic transverse process or lamina.)

## ROD SELECTION AND APPLICATION



Ti alloy



Cobalt chrome alloy



Stainless steel



Rod template



CP Ti

### STEP 5

- Polaris rods are offered in titanium alloy, commercially pure titanium and cobalt chrome alloy for use with the titanium alloy components.
- Stainless steel components should never be used with components made of titanium alloy, commercially pure titanium, or cobalt chrome alloy, per the package insert.
- The variety of stiffness and strength combinations of rods allow the surgeon to tailor the construct to the surgeon's preference according to the needs of the patient.
- Commercially pure titanium and titanium alloy have similar stiffness properties. However, commercially pure titanium is a softer material and is easier to bend than titanium alloy. If a stiffer rod is preferred, cobalt chrome rods are offered in an extra-hard tensile strength.
- A 5.5mm diameter cobalt chrome alloy rod enables the construct to behave with the similar strength and stiffness compared to a 5.5mm diameter stainless steel rod.
- The bending properties of cobalt chrome alloy rods continue to harden as *in situ* bending occurs repeatedly. As with any metal, rods should be bent with caution and minimally to prevent fracture and fatigue.
- The use of cobalt chrome alloy rods with titanium implants (screws, hooks and plugs) maintains imaging capabilities. Cobalt chrome alloy rods are only to be used with titanium implants and are never used with stainless steel implants.
- Stainless steel rods are for use with stainless steel implants only. Zimmer Biomet Spine offers three tensile strengths in order for the surgeon to select the appropriate rigidity desired based on patient needs.
- The rods include two etched longitudinal lines along the length of the rod to help determine the correct plane and reference when bending and inserting the rod. The etched lines also aid in rod rotation. The rods incorporate two hex ends for additional options with rod rotation.
- A malleable rod template is available in order to aid with rod measurement and bending prior to rod insertion.

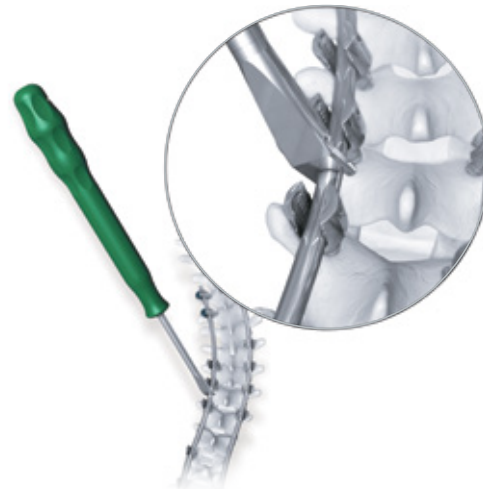
## ROD REDUCTION



*Rod pusher encompassing the screw to seat the rod and facilitate plug insertion*

### STEP 6

- The rod is inserted into the proximal hook or screw. It is often helpful to place a plug in the most proximal saddle prior to rod placement 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: rod pusher, rod manipulator, rod rocker or the rod reducer.



*Straight rod pusher used to persuade the rod into the tulip and facilitate plug insertion*

### STEP 7, OPTION A

#### Rod Pusher

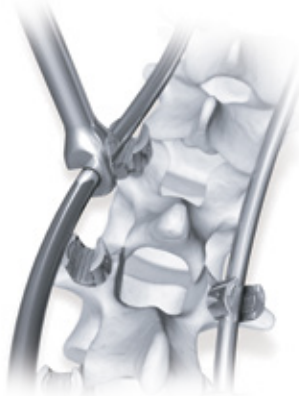
- The **straight rod pusher** is available with bent tip or straight tip to allow for optimum visualization of the rod persuasion into the tulip of the screw or hook. The pushers can be tapped with a mallet to facilitate rod placement.



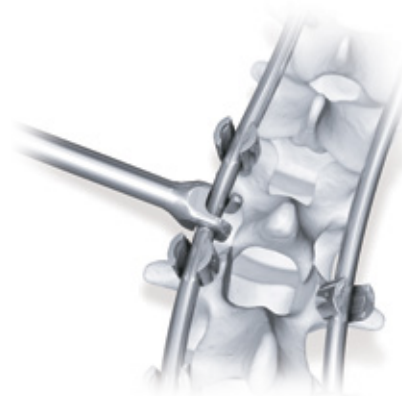
## ROD REDUCTION (*continued*)



Step 1—Load the instrument onto the rod



Step 2—Turn the instrument handle 90° and engage the rod



Step 3—Push the rod into screw seat to facilitate plug insertion

### STEP 7, OPTION B

#### Rod Manipulator

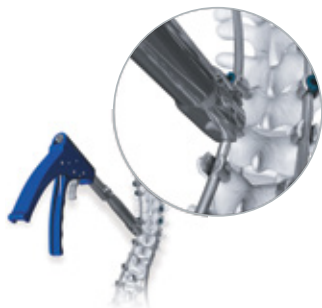
- The **rod manipulator** is used to persuade the rod into the tulip and can move the rod cephalad/caudal and medial/lateral.
- First, place the manipulator on the rod, then turn the handle 90° clockwise to lock the instrument to the rod. Push, pull or translate the rod into the seat.

- Provisionally place the plug into the tulip, turn the handle 90° counterclockwise to release the manipulator and lift up.

**Note:** Be cautious of bone that may be underneath the instrument that may hinder the application and release of the instrument. If this occurs, use a different rod reduction option or remove the bone with the bone planer.



Step 1—Place onto the screw



Step 2—Squeeze handle to advance the middle and outer sleeves

## STEP 7, OPTION C

### Rod Persuader

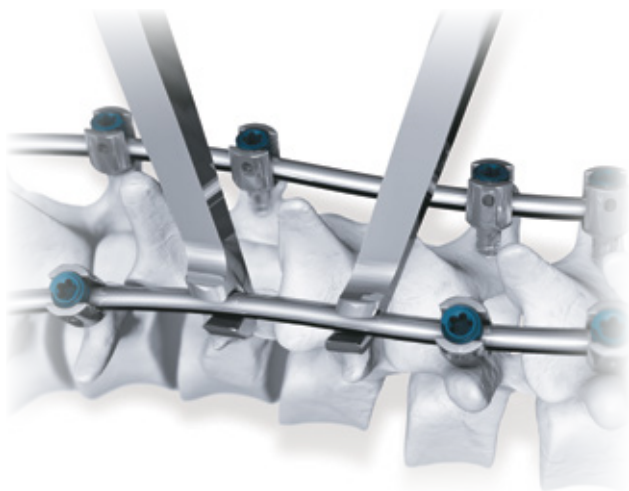
- The **rod persuader** offers the surgeon a controlled and powerful means in which to reduce the rod into the seat. This can be used for standard screws and reduction screws.
- Place the persuader over top of the screw seat until the blocking ring rests on the top of the screw. This ensures the persuader is in proper position.
- Begin to squeeze the blue handle to advance the middle and outer sleeves. Once the middle sleeve passes the inner blocking ring, the persuader will grab the screw seat connecting into the dimples of the seat. Continue to squeeze the handle to seat the rod.
- The **plug starter** will fit through the cannulated portion of the persuader, allowing for plug application with the persuader in place. To release the persuader, press the trigger located underneath the handle. Once released, the persuader may then be removed from the screw seat.

**Note:** Each rod reduction instrument allows for plug application.

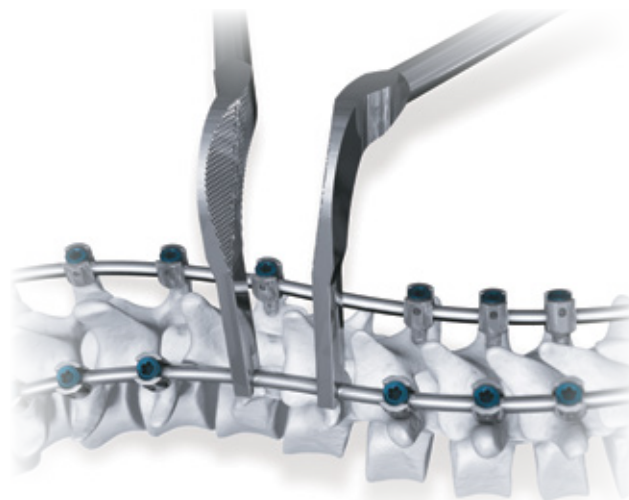
## STEP 8

- Once the rod is reduced, the spine can be corrected with rod rotation, *in situ* bending, or use of cables and wires to translate the spine to the rod. Once the plugs have been provisionally tightened and the construct confirmed, the contralateral rod is placed in the standard fashion, thus providing further fixation. Plugs are finally tightened using the **torque wrench** and **counter torque wrench**.
- If using cables, refer to the Lentur™ Cable System Surgical Technique (BSP216543L).

## IN SITU CONTOURING



Sagittal plane correction

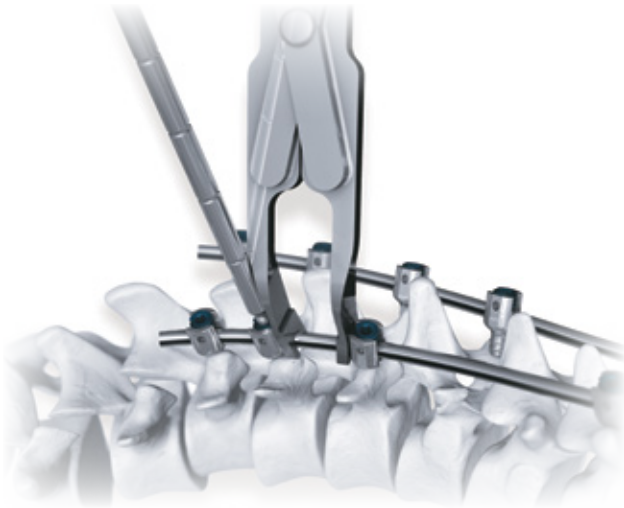


Coronal plane correction

### STEP 9

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

## DISTRACTION AND COMPRESSION



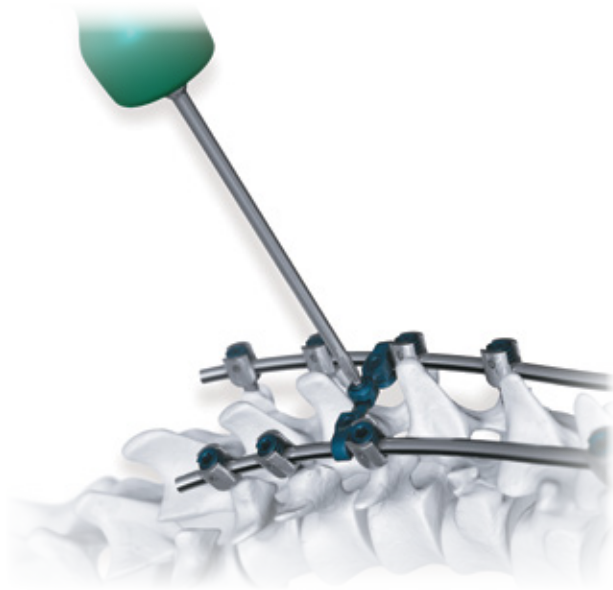
*Distract to achieve desired position of the vertebra and provisionally tighten the plug to maintain the position*

### STEP 10

- Distraction and compression can be achieved by utilizing either the **standard distractor** or **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 plug is tightened with the **provisional driver**, thus securing the rod.
- Specific compressors and distractors are available to facilitate deformity applications. In the Polaris™ 5.5 Spinal System, 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 5mm to 40mm is available.
- The Polaris™ 6.35 Spinal System compressor has a range of 14.5mm to 53.3mm. The distractor has a range of 5.6mm to 44.5mm.

**Note:** *The rod gripper may act as an intermediary point when compressing/distracting.*

## CROSS CONNECTOR APPLICATION

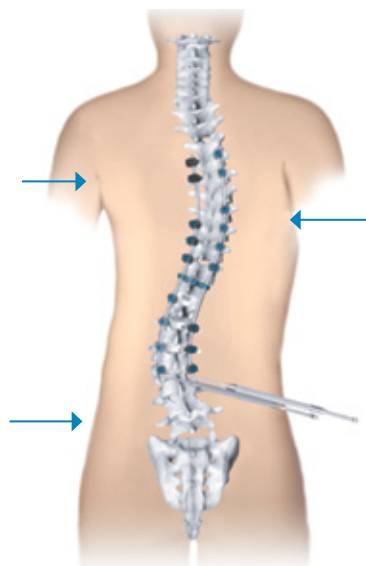


*Torque the cross connector to 40 in-lb using the cross connector torque handle*

### STEP 11

- In the event that additional torsional stability is required, the Crossbar™ Cross Connector may be utilized. The cross connector should be applied after the construct has been assembled and the final torque of the plugs 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-lb of torque to the cross connector set screws (tighten the plugs on the outer hooks first and then the central plug). Great care is needed to avoid inadvertent penetration of the canal with the cross connector torque wrench.
- Select the appropriate size cross connector in either a fixed or telescoping style. A **cross connector caliper** is available to determine the proper size needed.
- The **fixed cross connectors** may be contoured if necessary. Torque the set screws on the cross connector as a final step.

## ROD ROTATION



*Hex end wrench attached to hex end on rods used to facilitate rotation*

### STEP 12

- With plugs loosely engaged, the rods are simultaneously rotated into the desired sagittal profile to obtain three-dimensional deformity correction. This is verified by the exact dorsal orientation of the longitudinal rod marker lines. Rotation of the rod can be done in lesser curves with the **hex end wrenches** engaging the hexagonal rod end.
- A greater force can be applied using the **rod rotators** for larger curves. Place the distal tip of the rotators onto the rod and squeeze the handle until firmly gripping the rod. Rotate the rod to the desired position. To release the rotators, lift the trigger release.

## ROD ROTATION (continued)



### STEP 13, OPTION A

#### Segmental Translation

- **Reduction screws** or **extended screws** are very useful during challenging cases and offer the surgeon a variety of techniques to correct the spine.
- Reduction screws are used for segmental translation of the lumbar spine. The rod is secured in the S1 screw to act as a firm anchor. The rod is then slowly reduced by inserting the plug and tightening gradually from L1–L5. The spine is translated to the rods, thus correcting the coronal or sagittal plane.
- Once the Helical Flange® plugs are inserted to the appropriate depth below the break off tab, the plugs must be torqued with the chosen torque wrench and counter-torque stabilizer.

### STEP 13, OPTION B

#### Kyphosis Correction

- Reduction screws are used during kyphosis cases in order to reduce the spine to the correct sagittal alignment. The rod is slowly reduced into the screw tulip using the reduction instruments and Helical Flange plug.
- Once the Helical Flange plugs are inserted to the appropriate depth below the break off tab, the plugs must be torqued with the chosen torque wrench and counter torque stabilizer.



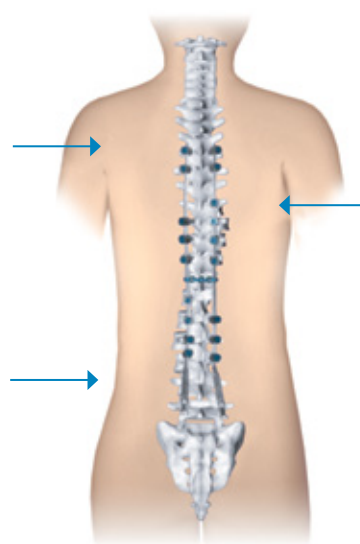
## DIRECT VERTEBRAL COLUMN MANIPULATION TECHNIQUE



*Fixed screws are placed in clusters of 5–8 about the apices of the lumbar and thoracic curves*



*Hex end wrench is used to rotate the rods*



*Global correction has been performed*

### STEP 1

- While rod rotation and/or *in situ* contouring address the bidimensional or global deformity of the spine, derotation addresses the third dimension of the axial plane.
- At this point in the surgical procedure, a near complete two-dimensional correction should have been achieved. Derotation of the spine can be accomplished by use of fixed pedicle screws at selected levels. Common areas where derotation is of benefit are the apical and end vertebra.
- This is an excellent method for reducing the rotational deformity of the spine. Structural curves with a true, stiff axial plane malrotation are targeted by placing between 5–8 fixed head pedicle screws.
- In order to derotate segments of the spine, it is important that there be appropriate fixation points on the remaining segments of the spine against which to derotate. Best results are achieved by aligning and then linking opposing axial plane corrective forces. An example would be a right thoracic against left thoracolumbar in a classic double-major pattern.
- In a double thoracic curve, the cephalad and caudad foundations oppose the corrective axial force. An extra level past the measured Cobb “end” vertebra may need to be included in a large, stiff curve.
- A stiff upper thoracic secondary curve provides a stronger opposing axial force than a thoracolumbar junction compensatory curve.

## DIRECT VERTEBRAL COLUMN MANIPULATION TECHNIQUE *(continued)*



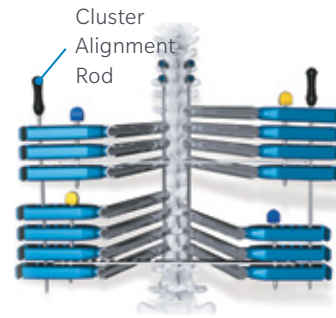
Derotation tubes are attached to the fixed screws in the apical clusters



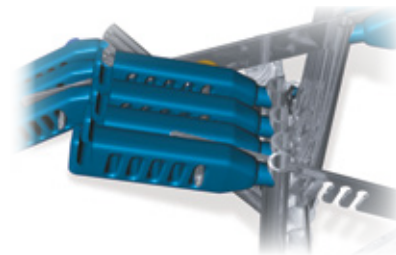
Handle linkage rods are attached through the handle of each cluster



Attach the comb to connect the lumbar and thoracic curve clusters respectively



Cluster alignment is to hold correction in place



Comb connecting to handle linkage rods



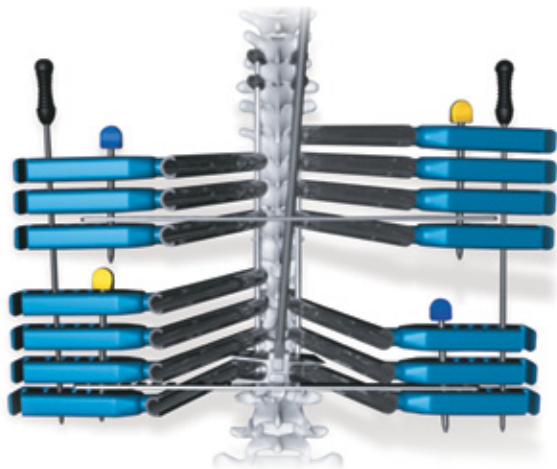
Derotate the spine by manipulating the clusters



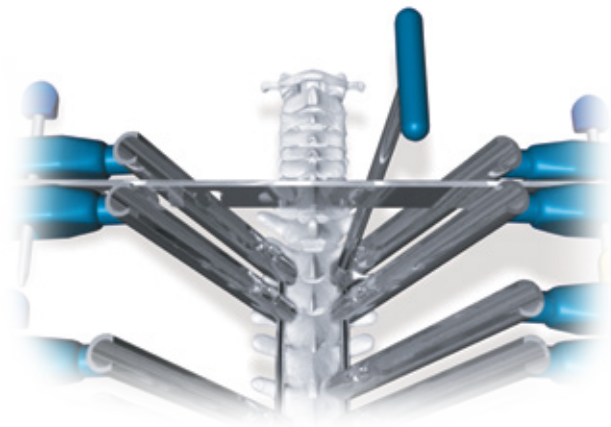
The spine is now corrected

### STEP 2

- **Derotation levers** are engaged on the various clusters. Levers are aligned within each cluster and **handle linkage rods** are placed in the first hole in the handles.
- A comb is then engaged from above onto the handle linkage rods. All 5–8 screws in a cluster are thus linked to provide a uniform axial plane corrective force distributed through multiple screws minimizing the chance of screw ploughing.
- Two clusters in a double-major scoliosis are simultaneously slowly derotated, three in a single thoracic or triple major.
- Spine is derotated in all three planes. Once the desired derotation is achieved, **cluster alignment rods** placed through various handle slots on both sides hold the axial plane correction.
- It is important to monitor neurologic function with real-time spinal cord electrophysiologic testing throughout this maneuver, especially with larger curves.



*Horizontalizer is placed in between derotators to angle the vertebral body*



*Use the distractor wedge in between derotators to distract the disc space*

### STEP 3

#### Vertebral Horizontalization and Compression/Distraction

- The **horizontalizer** is used to adjust coronal plane non-level vertebrae to achieve vertebral leveling with the desired combination of equal partial concavity distraction and convexity compression.
- This helps prevent unwanted elongation of the spinal cord. The horizontalizer is dropped down onto the still-engaged levers of the desired segment to be horizontalized. The handle is used as a lever pushed laterally in either direction to effect leveling of the vertebral body. The various handle angle adjustment options allow the surgeon to adjust to varying patient anatomy. Special attention paid to leveling the lowest instrumented vertebra, or in some situations slightly over-correction, will help prevent truncal offset in lumbar curves.
- If compression and distraction is necessary and cannot be achieved with the horizontalizer, two options remain.
  - The inter-derotator **wedge distractor** tool can be used in a tight concavity situation in the upper thoracic spine to give room for horizontalizer application. After distraction, provisionally tighten the two adjacent screw plugs, then apply the horizontalizer. Loosen and retighten torque plugs as needed.
  - The compressors or distractors can be used between the derotation levers or the screws themselves.

## ILIAC FIXATION SURGICAL TECHNIQUE



*Insert the multi-axial screw into the pelvis*

### STEP 1

- In some instances, such as neuromuscular scoliosis with pelvic obliquity or when additional fixation is necessary to load share at the lumbosacral junction, iliac fixation may be valuable.
- The iliac wing and posterior superior iliac spine are exposed by the surgeon's preferred method. The iliac wing is typically exposed enough to orient the path of the **iliac screw** to ensure that the iliac cortex is not violated during 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 greater 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 feedback, 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 palpated with a pedicle sound and the iliac walls and floors are noted to be intact. It is recommended to notch the iliac wing around the screw head to sink the screw head to prevent prominence.



*Lateral connector loaded onto rod connected to the iliac screw*

## STEP 2

- Preload the **lateral connector** onto the **longitudinal rod**. The post of the lateral connector may be cut and contoured as deemed necessary.
- A lateral connector may also 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.

## PROVISIONAL AND FINAL TIGHTENING



- 
- In tightening the plugs, first secure the plugs along the longitudinal rod.
  - Then secure the plug where it mates with the post of the lateral connector within the lateral or iliac screw.
  - Finally, tighten the plug at the lateral connector/longitudinal rod interface.
  - All plugs must be final tightened with the torque wrench in combination with the counter-torque wrench.

## CLOSURE, POSTOPERATIVE CARE AND IMPLANT REMOVAL

### CLOSURE

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- After implantation of the Polaris Spinal System is complete, closure is performed in layers according to standard protocol.

### POSTOPERATIVE CARE

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- To enhance recovery following implantation of the Polaris 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

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- Removal of the Polaris Spinal System is performed by reversing the order of the implant procedure. The **T-handle** attached to the plug driver, in combination with the counter torque, must be used first to remove the plugs.



## KIT CONTENTS

### Polaris 5.5 SST Deformity Screw Implant Kit 14-509650

DESCRIPTION	PART NUMBER
Standard Helical Flange Plug	14-505100
Derotation Helical Flange Plug	14-505110
Med SST Rod with Hex, $\varnothing 5.5\text{mm} \times 510\text{mm}$	14-505402
Hard SST Rod with Hex, $\varnothing 5.5\text{mm} \times 510\text{mm}$	14-505406
Extra Hard SST Rod with Hex, $\varnothing 5.5\text{mm} \times 510\text{mm}$	14-505410
Lateral Connector, 25mm	14-505120
Lateral Connector, 35mm	14-505122
Lateral Connector, 50mm	14-505124
Lateral Connector, 75mm	14-505126
Fixed Cross Connector, 12mm	14-505142
Fixed Cross Connector, 14mm	14-505143
Fixed Cross Connector, 16mm	5006760
Fixed Cross Connector, 18mm	5006761
Fixed Cross Connector, 20mm	5006762
Fixed Cross Connector, 22mm	5006763
Fixed Cross Connector, 24mm	5006764
Fixed Screw, $\varnothing 4.75\text{mm} \times 20\text{mm}$	14-504220
Fixed Screw, $\varnothing 4.75\text{mm} \times 25\text{mm}$	14-504225
Fixed Screw, $\varnothing 4.75\text{mm} \times 30\text{mm}$	14-504230
Fixed Screw, $\varnothing 4.75\text{mm} \times 35\text{mm}$	14-504235
Fixed Screw, $\varnothing 4.75\text{mm} \times 40\text{mm}$	14-504240
Fixed Screw, $\varnothing 4.75\text{mm} \times 45\text{mm}$	14-504245
Fixed Screw, $\varnothing 5.5\text{mm} \times 20\text{mm}$	14-504320
Fixed Screw, $\varnothing 5.5\text{mm} \times 25\text{mm}$	14-504325
Fixed Screw, $\varnothing 5.5\text{mm} \times 30\text{mm}$	14-504330
Fixed Screw, $\varnothing 5.5\text{mm} \times 35\text{mm}$	14-504335
Fixed Screw, $\varnothing 5.5\text{mm} \times 40\text{mm}$	14-504340
Fixed Screw, $\varnothing 5.5\text{mm} \times 45\text{mm}$	14-504345
Fixed Screw, $\varnothing 5.5\text{mm} \times 50\text{mm}$	14-504350
Fixed Screw, $\varnothing 5.5\text{mm} \times 55\text{mm}$	14-504355

DESCRIPTION	PART NUMBER
Fixed Screw, $\varnothing 6.5\text{mm} \times 30\text{mm}$	14-504430
Fixed Screw, $\varnothing 6.5\text{mm} \times 35\text{mm}$	14-504435
Fixed Screw, $\varnothing 6.5\text{mm} \times 40\text{mm}$	14-504440
Fixed Screw, $\varnothing 6.5\text{mm} \times 45\text{mm}$	14-504445
Fixed Screw, $\varnothing 6.5\text{mm} \times 50\text{mm}$	14-504450
Fixed Screw, $\varnothing 6.5\text{mm} \times 55\text{mm}$	14-504455
Fixed Screw, $\varnothing 7.5\text{mm} \times 30\text{mm}$	14-504530
Fixed Screw, $\varnothing 7.5\text{mm} \times 35\text{mm}$	14-504535
Fixed Screw, $\varnothing 7.5\text{mm} \times 40\text{mm}$	14-504540
Fixed Screw, $\varnothing 7.5\text{mm} \times 45\text{mm}$	14-504545
Fixed Screw, $\varnothing 7.5\text{mm} \times 50\text{mm}$	14-504550
Fixed Screw, $\varnothing 7.5\text{mm} \times 55\text{mm}$	14-504555
Fixed Screw, $\varnothing 8.5\text{mm} \times 30\text{mm}$	14-504630
Fixed Screw, $\varnothing 8.5\text{mm} \times 35\text{mm}$	14-504635
Fixed Screw, $\varnothing 8.5\text{mm} \times 40\text{mm}$	14-504640
Fixed Screw, $\varnothing 8.5\text{mm} \times 45\text{mm}$	14-504645
Fixed Screw, $\varnothing 8.5\text{mm} \times 50\text{mm}$	14-504650
Fixed Screw, $\varnothing 8.5\text{mm} \times 55\text{mm}$	14-504655

### Polaris 5.5 SST Deformity Hook Implant Kit 14-509651

DESCRIPTION	PART NUMBER
Pedicle Hook, Small, 6mm	14-505500
Pedicle Hook, Medium, 7.5mm	14-505502
Pedicle Hook, Large, 9mm	14-505504
Left Angled Hook, Small, 6mm	14-505506
Right Angled Hook, Small, 6mm	14-505508
Left Angled Hook, Medium, 7.5mm	14-505510
Right Angled Hook, Medium, 7.5mm	14-505512
Left Angled Hook, Large, 9mm	14-505514
Right Angled Hook, Large, 9mm	14-505516
Narrow Laminar Hook, Small, 6mm	14-505524
Narrow Laminar Hook, Medium, 7.5mm	14-505526
Narrow Laminar Hook, Large, 9mm	14-505528
Narrow Reduced Laminar Hook, Small, 6mm	14-505530
Narrow Reduced Laminar Hook, Medium, 7.5mm	14-505532
Narrow Reduced Laminar Hook, Large, 9mm	14-505534
Wide Laminar Hook, Small, 6mm	14-505518
Wide Laminar Hook, Medium, 7.5mm	14-505520
Wide Laminar Hook, Large, 9mm	14-505522
Left Offset Hook, Small, 6mm	14-505536
Right Offset Hook, Small, 6mm	14-505538
Left Offset Hook, Medium, 7.5mm	14-505540
Right Offset Hook, Medium, 7.5mm	14-505542
Left Offset Hook, Large, 9mm	14-505544
Right Offset Hook, Large, 9mm	14-505546
Angled Blade Hook, Small, 6mm	14-505548
Angled Blade Hook, Medium, 7.5mm	14-505550
Angled Blade Hook, Large, 9mm	14-505552
Extended Hook, Small, 6mm	14-505554
Extended Hook, Medium, 7.5mm	14-505556
Extended Hook, Large, 9mm	14-505558

### Polaris 5.5 SST Standard Implants 14-509652

DESCRIPTION	PART NUMBER
Helical Flange SST Plug	14-505100
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 20mm	14-502320
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 25mm	14-502325
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 30mm	14-502330
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 35mm	14-502335
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 40mm	14-502340
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 45mm	14-502345
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 50mm	14-502350
Multi-axial SST Screw, $\varnothing$ 5.5mm $\times$ 55mm	14-502355
Multi-axial SST Screw, $\varnothing$ 6.5mm $\times$ 30mm	14-502430
Multi-axial SST Screw, $\varnothing$ 6.5mm $\times$ 35mm	14-502435
Multi-axial SST Screw, $\varnothing$ 6.5mm $\times$ 40mm	14-502440
Multi-axial SST Screw, $\varnothing$ 6.5mm $\times$ 45mm	14-502445
Multi-axial SST Screw, $\varnothing$ 6.5mm $\times$ 50mm	14-502450
Multi-axial SST Screw, $\varnothing$ 6.5mm $\times$ 55mm	14-502455
Multi-axial SST Screw, $\varnothing$ 7.5mm $\times$ 30mm	14-502530
Multi-axial SST Screw, $\varnothing$ 7.5mm $\times$ 35mm	14-502535
Multi-axial SST Screw, $\varnothing$ 7.5mm $\times$ 40mm	14-502540
Multi-axial SST Screw, $\varnothing$ 7.5mm $\times$ 45mm	14-502545
Multi-axial SST Screw, $\varnothing$ 7.5mm $\times$ 50mm	14-502550
Multi-axial SST Screw, $\varnothing$ 7.5mm $\times$ 55mm	14-502555
Med SST Rod with Hex, 510mm	14-505402
High-strength SST Rod with Hex, 510mm	14-505406
Extra-high-strength SST Rod with Hex, 510mm	14-505410

## KIT CONTENTS (continued)

### Polaris 5.5 SST Standard Implants 14-509652 (continued)

DESCRIPTION	PART NUMBER
Cross Connector, Extra-extra Small	5006750
Cross Connector, Extra Small	5006751
Cross Connector, Small	5006752
Cross Connector, Medium	5006753
Cross Connector, Large	5006754
Multi-axial SST Screw, ø4.75mm × 20mm	14-502220
Multi-axial SST Screw, ø4.75mm × 25mm	14-502225
Multi-axial SST Screw, ø4.75mm × 30mm	14-502230
Multi-axial SST Screw, ø4.75mm × 35mm	14-502235
Multi-axial SST Screw, ø4.75mm × 40mm	14-502240
Multi-axial SST Screw, ø4.75mm × 45mm	14-502245
Multi-axial SST Screw, ø4.75mm × 50mm	14-502250
Multi-axial SST Screw, ø8.5mm × 30mm	14-502630
Multi-axial SST Screw, ø8.5mm × 35mm	14-502635
Multi-axial SST Screw, ø8.5mm × 40mm	14-502640
Multi-axial SST Screw, ø8.5mm × 45mm	14-502645
Multi-axial SST Screw, ø8.5mm × 50mm	14-502650
Multi-axial SST Screw, ø8.5mm × 55mm	14-502655
Multi-axial Screw Inserter	14-500185

### Polaris 5.5 SST Iliac Fixation Kit 14-509654

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø6.5mm × 60mm	14-503460
Multi-axial Screw, ø6.5mm × 70mm	14-503470
Multi-axial Screw, ø6.5mm × 80mm	14-503480
Multi-axial Screw, ø6.5mm × 90mm	14-503490
Multi-axial Screw, ø7.5mm × 60mm	14-503560
Multi-axial Screw, ø7.5mm × 70mm	14-503570
Multi-axial Screw, ø7.5mm × 80mm	14-503580
Multi-axial Screw, ø7.5mm × 90mm	14-503590
Multi-axial Screw, ø8.5mm × 60mm	14-503660
Multi-axial Screw, ø8.5mm × 70mm	14-503670
Multi-axial Screw, ø8.5mm × 80mm	14-503680
Multi-axial Screw, ø8.5mm × 90mm	14-503690

### Polaris 5.5 SST Multi-axial Reduction Screw Case 14-509655

DESCRIPTION	PART NUMBER
Multi-axial Reduction Screw, ø5.5mm × 30mm	14-507330
Multi-axial Reduction Screw, ø5.5mm × 35mm	14-507335
Multi-axial Reduction Screw, ø5.5mm × 40mm	14-507340
Multi-axial Reduction Screw, ø5.5mm × 45mm	14-507345
Multi-axial Reduction Screw, ø5.5mm × 50mm	14-507350
Multi-axial Reduction Screw, ø5.5mm × 55mm	14-507355
Multi-axial Reduction Screw, ø6.5mm × 30mm	14-507430
Multi-axial Reduction Screw, ø6.5mm × 35mm	14-507435
Multi-axial Reduction Screw, ø6.5mm × 40mm	14-507440
Multi-axial Reduction Screw, ø6.5mm × 45mm	14-507445
Multi-axial Reduction Screw, ø6.5mm × 50mm	14-507450
Multi-axial Reduction Screw, ø6.5mm × 55mm	14-507455
Multi-axial Reduction Screw, ø7.5mm × 30mm	14-507530
Multi-axial Reduction Screw, ø7.5mm × 35mm	14-507535
Multi-axial Reduction Screw, ø7.5mm × 40mm	14-507540
Multi-axial Reduction Screw, ø7.5mm × 45mm	14-507545
Multi-axial Reduction Screw, ø7.5mm × 50mm	14-507550
Multi-axial Reduction Screw, ø7.5mm × 55mm	14-507555

### Polaris 5.5 SST ø4mm Screw Kit, 14-509656

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø4.0mm × 20mm	14-502120
Multi-axial Screw, ø4.0mm × 25mm	14-502125
Multi-axial Screw, ø4.0mm × 30mm	14-502130
Multi-axial Screw, ø4.0mm × 35mm	14-502135
Multi-axial Screw, ø4.0mm × 40mm	14-502140
Multi-axial Screw, ø4.0mm × 45mm	14-502145
Fixed Screw, ø4.0mm × 20mm	14-504120
Fixed Screw, ø4.0mm × 25mm	14-504125
Fixed Screw, ø4.0mm × 30mm	14-504130
Fixed Screw, ø4.0mm × 35mm	14-504135
Fixed Screw, ø4.0mm × 40mm	14-504140
Fixed Screw, ø4.0mm × 45mm	14-504145

### Polaris 5.5 Spine Deformity Cobalt Chrome Kit 14-509660

DESCRIPTION	PART NUMBER
CoCrMo Extra Hard, 300mm	14-500581
CoCrMo Extra Hard, 510mm	14-500585
CoCrMo Extra-extra Hard, 300mm	14-500590
CoCrMo Extra-extra Hard, 510mm	14-500591

### Polaris 5.5 Ti ø4mm Screw Kit 14-509629

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø4.0mm × 20mm	2000-2120
Multi-axial Screw, ø4.0mm × 25mm	2000-2125
Multi-axial Screw, ø4.0mm × 30mm	2000-2130
Multi-axial Screw, ø4.0mm × 35mm	2000-2135
Multi-axial Screw, ø4.0mm × 40mm	2000-2140
Multi-axial Screw, ø4.0mm × 45mm	2000-2145
Fixed Screw, ø4.0mm × 20mm	2000-4120
Fixed Screw, ø4.0mm × 25mm	2000-4125
Fixed Screw, ø4.0mm × 30mm	2000-4130
Fixed Screw, ø4.0mm × 35mm	2000-4135
Fixed Screw, ø4.0mm × 40mm	2000-4140
Fixed Screw, ø4.0mm × 45mm	2000-4145

## KIT CONTENTS (continued)

### Polaris 5.5 Ti Deformity Screw Implant Kit 14-509630

DESCRIPTION	PART NUMBER
Standard Helical Flange Plug	2000-1005
Rod CP Ti with Hex, 510mm	2000-5305
Ti Alloy Rod with Hex, ø5.5mm × 510mm	2000-5405
Lateral Connector, 25mm	2000-1020
Lateral Connector, 35mm	14-500132
Lateral Connector, 50mm	2000-1022
Lateral Connector, 75mm	2000-1024
Fixed Cross Connector, 12mm	14-500130
Fixed Cross Connector, 14mm	14-500131
Fixed Cross Connector, 16mm	94487
Fixed Cross Connector, 18mm	94488
Fixed Cross Connector, 20mm	94489
Fixed Cross Connector, 22mm	94490
Fixed Cross Connector, 24mm	94491
Multi-axial Screw, ø5.5mm × 25mm	2000-2325
Multi-axial Screw, ø5.5mm × 30mm	2000-2330
Multi-axial Screw, ø5.5mm × 35mm	2000-2335
Multi-axial Screw, ø5.5mm × 40mm	2000-2340
Multi-axial Screw, ø5.5mm × 45mm	2000-2345
Fixed Screw, ø4.75mm × 20mm	2000-4220
Fixed Screw, ø4.75mm × 25mm	2000-4225
Fixed Screw, ø4.75mm × 30mm	2000-4230
Fixed Screw, ø4.75mm × 35mm	2000-4235
Fixed Screw, ø4.75mm × 40mm	2000-4240
Fixed Screw, ø4.75mm × 45mm	2000-4245
Fixed Screw, ø5.5mm × 25mm	2000-4325
Fixed Screw, ø5.5mm × 30mm	2000-4330
Fixed Screw, ø5.5mm × 35mm	2000-4335
Fixed Screw, ø5.5mm × 40mm	2000-4340
Fixed Screw, ø5.5mm × 45mm	2000-4345
Fixed Screw, ø5.5mm × 50mm	2000-4350
Fixed Screw, ø5.5mm × 55mm	2000-4355

DESCRIPTION	PART NUMBER
Fixed Screw, ø6.5mm × 30mm	2000-4430
Fixed Screw, ø6.5mm × 35mm	2000-4435
Fixed Screw, ø6.5mm × 40mm	2000-4440
Fixed Screw, ø6.5mm × 45mm	2000-4445
Fixed Screw, ø6.5mm × 50mm	2000-4450
Fixed Screw, ø6.5mm × 55mm	2000-4455
Fixed Screw, ø7.5mm × 30mm	2000-4530
Fixed Screw, ø7.5mm × 35mm	2000-4535
Fixed Screw, ø7.5mm × 40mm	2000-4540
Fixed Screw, ø7.5mm × 45mm	2000-4545
Fixed Screw, ø7.5mm × 50mm	2000-4550
Fixed Screw, ø7.5mm × 55mm	2000-4555
Fixed Screw, ø8.5mm × 30mm	2000-4630
Fixed Screw, ø8.5mm × 35mm	2000-4635
Fixed Screw, ø8.5mm × 40mm	2000-4640
Fixed Screw, ø8.5mm × 45mm	2000-4645
Fixed Screw, ø8.5mm × 50mm	2000-4650
Fixed Screw, ø8.5mm × 55mm	2000-4655

### Polaris 5.5 Ti Deformity Hook Kit 14-509631

DESCRIPTION	PART NUMBER
Pedicle Hook, Small, 6mm	2000-5500
Pedicle Hook, Medium, 7.5mm	2000-5502
Pedicle Hook, Large, 9mm	2000-5504
Left Angled Hook, Small, 6mm	2000-5506
Right Angled Hook, Small, 6mm	2000-5508
Left Angled Hook, Medium, 7.5mm	2000-5510
Right Angled Hook, Medium, 7.5mm	2000-5512
Left Angled Hook, Large, 9mm	2000-5514
Right Angled Hook, Large, 9mm	2000-5516
Narrow Laminar Hook, Small, 6mm	2000-5524
Narrow Laminar Hook, Medium, 7.5mm	2000-5526
Narrow Laminar Hook, Large, 9mm	2000-5528
Narrow Reduced Laminar Hook, Small, 6mm	2000-5530
Narrow Reduced Laminar Hook, Medium, 7.5mm	2000-5532
Narrow Reduced Laminar Hook, Large, 9mm	2000-5534
Wide Laminar Hook, Small, 6mm	2000-5518
Wide Laminar Hook, Medium, 7.5mm	2000-5520
Wide Laminar Hook, Large, 9mm	2000-5522
Left Offset Hook, Small, 6mm	2000-5536
Right Offset Hook, Small, 6mm	2000-5538
Left Offset Hook, Medium, 7.5mm	2000-5540
Right Offset Hook, Medium, 7.5mm	2000-5542
Left Offset Hook, Large, 9mm	2000-5544
Right Offset Hook, Large, 9mm	2000-5546
Angled Blade Hook, Small, 6mm	2000-5548
Angled Blade Hook, Medium, 7.5mm	2000-5550
Angled Blade Hook, Large, 9mm	2000-5552
Extended Hook, Small, 6mm	2000-5554
Extended Hook, Medium, 7.5mm	2000-5556
Extended Hook, Large, 9mm	2000-5558

### Polaris 5.5 Ti Reduction Screw Kit 14-509605

DESCRIPTION	PART NUMBER
Extended, ø5.5mm × 30mm	2000-7330
Extended, ø5.5mm × 35mm	2000-7335
Extended, ø5.5mm × 40mm	2000-7340
Extended, ø5.5mm × 45mm	2000-7345
Extended, ø5.5mm × 50mm	2000-7350
Extended, ø5.5mm × 55mm	2000-7355
Extended, ø6.5mm × 30mm	2000-7430
Extended, ø6.5mm × 35mm	2000-7435
Extended, ø6.5mm × 40mm	2000-7440
Extended, ø6.5mm × 45mm	2000-7445
Extended, ø6.5mm × 50mm	2000-7450
Extended, ø6.5mm × 55mm	2000-7455
Extended, ø7.5mm × 30mm	2000-7530
Extended, ø7.5mm × 35mm	2000-7535
Extended, ø7.5mm × 40mm	2000-7540
Extended, ø7.5mm × 45mm	2000-7545
Extended, ø7.5mm × 50mm	2000-7550
Extended, ø7.5mm × 55mm	2000-7555

## KIT CONTENTS (continued)

### Polaris 5.5 Ti ø4.75mm Screw Kit 14-509606

DESCRIPTION	PART NUMBER
ø4.75mm × 20mm	2000-2220
ø4.75mm × 25mm	2000-2225
ø4.75mm × 30mm	2000-2230
ø4.75mm × 35mm	2000-2235
ø4.75mm × 40mm	2000-2240
ø4.75mm × 45mm	2000-2245
ø4.75mm × 50mm	2000-2250

### Polaris 5.5 Ti ø8.5mm Screw Kit 14-509607

DESCRIPTION	PART NUMBER
ø8.5mm × 30mm	2000-2630
ø8.5mm × 35mm	2000-2635
ø8.5mm × 40mm	2000-2640
ø8.5mm × 45mm	2000-2645
ø8.5mm × 50mm	2000-2650
ø8.5mm × 55mm	2000-2655

### Polaris 5.5 Ti Iliac Implant Kit, 14-509635

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø6.5mm × 60mm	14-500290
Multi-axial Screw, ø6.5mm × 70mm	14-500292
Multi-axial Screw, ø6.5mm × 80mm	14-500294
Multi-axial Screw, ø6.5mm × 90mm	14-500296
Multi-axial Screw, ø7.5mm × 60mm	14-500310
Multi-axial Screw, ø7.5mm × 70mm	14-500312
Multi-axial Screw, ø7.5mm × 80mm	14-500314
Multi-axial Screw, ø7.5mm × 90mm	14-500316
Multi-axial Screw, ø8.5mm × 60mm	14-500330
Multi-axial Screw, ø8.5mm × 70mm	14-500332
Multi-axial Screw, ø8.5mm × 80mm	14-500334
Multi-axial Screw, ø8.5mm × 90mm	14-500336

### Polaris 5.5 Ti Standard Implant Kit 55500146

DESCRIPTION	PART NUMBER
Plug	2000-1005
Lateral Connector, 25mm	2000-1020
Cross Connector, Extra-extra Small	94669
Cross Connector, Extra Small	94670
Cross Connector, Small	94671
Cross Connector, Medium	94672
Cross Connector, Large	94673
Multi-axial Screw, ø5.5mm × 30mm	2000-2330
Multi-axial Screw, ø5.5mm × 35mm	2000-2335
Multi-axial Screw, ø5.5mm × 40mm	2000-2340
Multi-axial Screw, ø5.5mm × 45mm	2000-2345
Multi-axial Screw, ø5.5mm × 50mm	2000-2350
Multi-axial Screw, ø5.5mm × 55mm	2000-2355
Multi-axial Screw, ø6.5mm × 30mm	2000-2430
Multi-axial Screw, ø6.5mm × 35mm	2000-2435
Multi-axial Screw, ø6.5mm × 40mm	2000-2440
Multi-axial Screw, ø6.5mm × 45mm	2000-2445
Multi-axial Screw, ø6.5mm × 50mm	2000-2450
Multi-axial Screw, ø6.5mm × 55mm	2000-2455
Multi-axial Screw, ø7.5mm × 30mm	2000-2530
Multi-axial Screw, ø7.5mm × 35mm	2000-2535
Multi-axial Screw, ø7.5mm × 40mm	2000-2540
Multi-axial Screw, ø7.5mm × 45mm	2000-2545
Multi-axial Screw, ø7.5mm × 50mm	2000-2550
Multi-axial Screw, ø7.5mm × 55mm	2000-2555
Ti Alloy Pre-curved Rod, 30mm	2000-5130
Ti Alloy Pre-curved Rod, 35mm	2000-5135
Ti Alloy Pre-curved Rod, 40mm	2000-5140
Ti Alloy Pre-curved Rod, 45mm	2000-5145
Ti Alloy Pre-curved Rod, 50mm	2000-5150
Ti Alloy Pre-curved Rod, 55mm	2000-5155
Ti Alloy Pre-curved Rod, 60mm	2000-5160
Ti Alloy Pre-curved Rod, 65mm	2000-5165
Ti Alloy Pre-curved Rod, 70mm	2000-5170
Ti Alloy Pre-curved Rod, 75mm	2000-5175
Ti Alloy Pre-curved Rod, 80mm	2000-5180
Ti Alloy Pre-curved Rod, 90mm	2000-5190
Ti Alloy Pre-curved Rod, 100mm	2000-5199
Ti Alloy Rod with Hex, 510mm	2000-5405



### Polaris 5.5 Standard Instrument Case 55500146

DESCRIPTION	PART NUMBER
Awl Shaft	94505
Thoracic Pedicle Probe	14-500100
Straight Pedicle Probe	14-500101
Curved Pedicle Probe	14-500102
Flexible Sound	2000-9015
Stiff Sound	4010
Trial Pin, 9cm	4077
Trial Pin, 11cm	4072
Tap, 4.75mm	2000-9023
Tap, 5.5mm	2000-9024
Tap, 6.5mm	2000-9025
Tap, 7.5mm	2000-9026
Tap, 8.5mm	2000-9027
Reamer Probe, 4.75mm	2000-9091
Reamer Probe, 5.5mm	2000-9092
Reamer Probe, 6.5mm	2000-9093
Reamer Probe, 7.5mm	2000-9094
Ratchet Handle, T	124797
Ratchet Handle, Straight	124799
Fixed Handle, T	94697
Fixed Handle, Straight	94699
Tear Drop Handle, Fixed	2000-9006
Tear Drop Handle, Ratcheting	2000-6481
Plug Driver	2000-9061
Multi-axial Screw Insertter	14-500185
Double-end Plug Starter	2000-9060
Dorsal Height Adjuster	2000-9072
Rod Template	94612
Rod Holder	94613
Soft Tissue Retractor	94614
Torque Stabilizer	2000-9075
Rod Bender	2000-9044
Rod Persuader	2000-9055
Straight Rod Pusher	2000-9059
Reduction Screw Break-off Plier	2000-9074
Reduction Fork	2000-9054
Cross Connector Torque Wrench	94624
Compressor Parallel	94686
Distractor Parallel	94687
Reduction Screw Break-off Stabilizer	2000-9019

### Polaris 5.5 Deformity Instrument Kit A 14-509632

DESCRIPTION	PART NUMBER
Pedicle Probe, 2.3mm	14-500117
Tap, 4mm	2000-9022
Reamer, 4mm	2000-9090
Curved Thoracic Probe, Large	14-500137
Straight Thoracic Probe, Small	14-500103
Fixed Screw Insertter	2000-9085
Uni-planer Screw Insertter	14-500180
Rod Hex Driver	2000-9056
Fixed Screw Aligner, Right	94985
Rod Rocker	2000-9051
Straight Rod Pusher	14-500139
Bone Planer	14-500138
Rod Manipulator, Right	14-500116
Coronal Rod Bender, Left	14-500123
Coronal Rod Bender, Right	14-500124
Malleable Rod Template, 510mm	94644
<i>In situ</i> Bender, Right	2000-9045
<i>In situ</i> Bender, Left	2000-9046
Rod Rotator	14-500128
Iliac Reamer, 5.5mm	14-500172
Iliac Reamer, 6.5mm	14-500173
Iliac Reamer, 7.5mm	14-500174
Iliac Reamer, 8.5mm	14-500175

## KIT CONTENTS (continued)

### Polaris 5.5 Deformity Instrument Kit B 14-509633

DESCRIPTION	PART NUMBER
Deformity Compressor, Small	94659
Deformity Compressor, Large	94667
Deformity Distractor	94668
Cross Connector Caliper	14-500118
Fixed Cross Connector Bender, Left	94523
Fixed Cross Connector Bender, Right	94524
Pedicle Hook Starter	94510
Medium Lamina Hook Starter	94512
Narrow Lamina Hook Starter	94513
Thoracic Hook Starter	94515
Wide Lamina Hook Starter	94511
Vertical Hook Holder	2000-9086
Short Angle Hook Holder	2000-9088
Hook Impactor	2000-9089

### Polaris 5.5 Derotation Instrument Kit 14-509634

DESCRIPTION	PART NUMBER
Derotator Lever	14-500120
Horizontalizer, 55mm	14-500121
Horizontalizer, 75mm	14-500122
Cluster Linkage Rod, 25cm	14-501006
Cluster Linkage Rod, 38cm	14-501007
Comb, 30cm	14-501008
Comb, 36cm	14-501009
Handle Linkage Rod, Size 2–3	14-501003
Handle Linkage Rod, Size 3–4	14-501004
Handle Linkage Rod, Size 4–5	14-501005
Distractor Wedge	14-500125
T-handle Adaptor	14-500133
Wide Handle Derotator	14-500152

### Polaris 6.35 Ti Standard Implants, LTPTL

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø4mm × 20mm	50-6550MP
Multi-axial Screw, ø4mm × 25mm	50-6551MP
Multi-axial Screw, ø4mm × 30mm	50-6552MP
Multi-axial Screw, ø4mm × 35mm	50-6553MP
Multi-axial Screw, ø4mm × 40mm	50-6554MP
Multi-axial Screw, ø4.75mm × 20mm	50-6803MP
Multi-axial Screw, ø4.75mm × 25mm	50-6804MP
Multi-axial Screw, ø4.75mm × 30mm	50-6805MP
Multi-axial Screw, ø4.75mm × 35mm	50-6806MP
Multi-axial Screw, ø4.75mm × 40mm	50-6807MP
Multi-axial Screw, ø5.5mm × 30mm	50-6105MP
Multi-axial Screw, ø5.5mm × 35mm	50-6106MP
Multi-axial Screw, ø5.5mm × 40mm	50-6107MP
Multi-axial Screw, ø5.5mm × 45mm	50-6108MP
Multi-axial Screw, ø5.5mm × 50mm	50-6109MP
Multi-axial Screw, ø6.5mm × 30mm	50-6110MP
Multi-axial Screw, ø6.5mm × 35mm	50-6111MP
Multi-axial Screw, ø6.5mm × 40mm	50-6112MP
Multi-axial Screw, ø6.5mm × 45mm	50-6113MP
Multi-axial Screw, ø6.5mm × 50mm	50-6114MP
Multi-axial Screw, ø6.5mm × 55mm	50-6800MP
Multi-axial Screw, ø7.0mm × 30mm	50-6115MP
Multi-axial Screw, ø7.0mm × 35mm	50-6116MP
Multi-axial Screw, ø7.0mm × 40mm	50-6117MP
Multi-axial Screw, ø7.0mm × 45mm	50-6118MP
Multi-axial Screw, ø7.0mm × 50mm	50-6119MP
Multi-axial Screw, ø7.0mm × 55mm	50-6801MP
Multi-axial Reduction Screw, ø6.5mm × 40mm	53-6112MP
Multi-axial Reduction Screw, ø6.5mm × 45mm	53-6113MP
Multi-axial Reduction Screw, ø7.0mm × 45mm	53-6118MP
Multi-axial Reduction Screw, ø7.0mm × 50mm	53-6119MP
Helical Flange Plug	6451
Lateral Connector	6454
Lateral Connector, Extended	6455
Cross Connector, Small	6954
Cross Connector, Medium	6955
Cross Connector, Large	6956
Fixed Screw, ø4mm × 25mm	6310
Fixed Screw, ø4mm × 30mm	6311

### Polaris 6.35 Ti Standard Implants LTPTL (continued)

DESCRIPTION	PART NUMBER
Fixed Screw, ø4.0mm × 35mm	6312
Fixed Screw, ø4.0mm × 40mm	6313
Fixed Screw, ø4.75mm × 25mm	6385
Fixed Screw, ø4.75mm × 30mm	6386
Fixed Screw, ø4.75mm × 35mm	6387
Fixed Screw, ø4.75mm × 40mm	6388
Fixed Screw, ø5.5mm × 25mm	6719
Fixed Screw, ø5.5mm × 30mm	6720
Fixed Screw, ø5.5mm × 35mm	6721
Fixed Screw, ø5.5mm × 40mm	6722
Fixed Screw, ø5.5mm × 45mm	6723
Fixed Screw, ø6.5mm × 30mm	6730
Fixed Screw, ø6.5mm × 35mm	6731
Fixed Screw, ø6.5mm × 40mm	6732
Fixed Screw, ø6.5mm × 45mm	6733
Fixed Screw, ø6.5mm × 50mm	6734
Fixed Screw, ø7.0mm × 30mm	6749
Fixed Screw, ø7.0mm × 35mm	6750
Fixed Screw, ø7.0mm × 40mm	6751
Fixed Screw, ø7.0mm × 45mm	6752
Fixed Screw, ø7.0mm × 50mm	6753
CP Ti Rod, 6.35mm × 10cm	6008
CP Ti Rod, 6.35mm × 12cm	6009
CP Ti Rod, 6.35mm × 14cm	6010
CP Ti Rod with Hex, 6.35mm × 30cm	6015
CP Ti Rod with Hex, 6.35mm × 48cm	6016
Ti Alloy Rod, 6.35mm × 30cm	6035
Ti Alloy Rod, 6.35mm × 48cm	6036

### Polaris 6.35 Ti Large Diameter Screws 14-509640

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø7.5mm × 30mm	14-511530
Multi-axial Screw, ø7.5mm × 35mm	14-511535
Multi-axial Screw, ø7.5mm × 40mm	14-511540
Multi-axial Screw, ø7.5mm × 45mm	14-511545
Multi-axial Screw, ø7.5mm × 50mm	14-511550
Multi-axial Screw, ø7.5mm × 55mm	14-511555
Multi-axial Screw, ø8.5mm × 30mm	14-511630
Multi-axial Screw, ø8.5mm × 35mm	14-511635
Multi-axial Screw, ø8.5mm × 40mm	14-511640
Multi-axial Screw, ø8.5mm × 45mm	14-511645
Multi-axial Screw, ø8.5mm × 50mm	14-511650
Multi-axial Screw, ø8.5mm × 55mm	14-511655
Multi-axial Screw Inserter	14-501035

## KIT CONTENTS (continued)

### Polaris 6.35 Ti Hooks 14-509641

DESCRIPTION	PART NUMBER
Pedicle Hook, Small, 6mm	14-501150
Pedicle Hook, Medium, 7.5mm	14-501151
Pedicle Hook, Large, 9mm	14-501152
Left Angled Hook, Small, 6mm	14-501153
Right Angled Hook, Small, 6mm	14-501156
Left Angled Hook, Medium, 7.5mm	14-501154
Right Angled Hook, Medium, 7.5mm	14-501157
Left Angled Hook, Large, 9mm	14-501155
Right Angled Hook, Large, 9mm	14-501158
Narrow Laminar Hook, Small, 6mm	14-501162
Narrow Laminar Hook, Medium, 7.5mm	14-501163
Narrow Laminar Hook, Large, 9mm	14-501164
Narrow Reduced Laminar Hook, Small, 6mm	14-501165
Narrow Reduced Laminar Hook, Medium, 7.5mm	14-501166
Narrow Reduced Laminar Hook, Large, 9mm	14-501167
Wide Laminar Hook, Small, 6mm	14-501159
Wide Laminar Hook, Medium, 7.5mm	14-501160
Wide Laminar Hook, Large, 9mm	14-501161
Left Offset Hook, Small, 6mm	14-501168
Right Offset Hook, Small, 6mm	14-501171
Left Offset Hook, Medium, 7.5mm	14-501169
Right Offset Hook, Medium, 7.5mm	14-501172
Left Offset Hook, Large, 9mm	14-501170
Right Offset Hook, Large, 9mm	14-501173
Angled Blade Hook, Small, 6mm	14-501174
Angled Blade Hook, Medium, 7.5mm	14-501175
Angled Blade Hook, Large, 9mm	14-501176
Extended Hook, Small, 6mm	14-501177
Extended Hook, Medium, 7.5mm	14-501178
Extended Hook, Large, 9mm	14-501179
Fixed Cross Connector, 14mm	14-501041
Fixed Cross Connector, 16mm	14-501051
Fixed Cross Connector, 18mm	14-501052
Fixed Cross Connector, 20mm	14-501053
Fixed Cross Connector, 22mm	14-501054
Fixed Cross Connector, 24mm	14-501055

### Polaris 6.35 Ti Iliac Fixation 14-509645

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø6.5mm × 60mm	14-501290
Multi-axial Screw, ø6.5mm × 70mm	14-501292
Multi-axial Screw, ø6.5mm × 80mm	14-501294
Multi-axial Screw, ø6.5mm × 90mm	14-501296
Multi-axial Screw, ø7.5mm × 60mm	14-501310
Multi-axial Screw, ø7.5mm × 70mm	14-501312
Multi-axial Screw, ø7.5mm × 80mm	14-501314
Multi-axial Screw, ø7.5mm × 90mm	14-501316
Multi-axial Screw, ø8.5mm × 60mm	14-501330
Multi-axial Screw, ø8.5mm × 70mm	14-501332
Multi-axial Screw, ø8.5mm × 80mm	14-501334
Multi-axial Screw, ø8.5mm × 90mm	14-501336
Lateral Connector, 24mm	6454
Lateral Connector, 34mm	6455
Lateral connector, 50mm	14-501220
Lateral Connector, 75mm	14-501221
Multi-axial Iliac Screw Inserter	14-501035

### Polaris 6.35 SST Deformity Implants 14-509670

DESCRIPTION	PART NUMBER
Standard Helical Flange SST Plug	14-575100
Derotation Helical Flange SST Plug	14-575110
Med SST Rod with Hex, 6.35mm × 510mm	14-575402
Hard SST Rod with Hex, 6.35mm × 510mm	14-575406
Extra Hard SST Rod with Hex, 6.35mm × 510mm	14-575410
Lateral Connector, 25mm	14-575120
Lateral Connector, 35mm	14-575122
Lateral Connector, 50mm	14-575124
Lateral Connector, 75mm	14-575126
Fixed Screw, ø4.75mm × 20mm	14-574220
Fixed Screw, ø4.75mm × 25mm	14-574225
Fixed Screw, ø4.75mm × 30mm	14-574230
Fixed Screw, ø4.75mm × 35mm	14-574235
Fixed Screw, ø4.75mm × 40mm	14-574240
Fixed Screw, ø4.75mm × 45mm	14-574245
Fixed Screw, ø5.5mm × 25mm	14-574325
Fixed Screw, ø5.5mm × 30mm	14-574330
Fixed Screw, ø5.5mm × 35mm	14-574335
Fixed Screw, ø5.5mm × 40mm	14-574340
Fixed Screw, ø5.5mm × 45mm	14-574345
Fixed Screw, ø5.5mm × 50mm	14-574350
Fixed Screw, ø5.5mm × 55mm	14-574355
Fixed Screw, ø6.5mm × 30mm	14-574430
Fixed Screw, ø6.5mm × 35mm	14-574435
Fixed Screw, ø6.5mm × 40mm	14-574440
Fixed Screw, ø6.5mm × 45mm	14-574445
Fixed Screw, ø6.5mm × 50mm	14-574450
Fixed Screw, ø6.5mm × 55mm	14-574455

DESCRIPTION	PART NUMBER
Fixed Screw, ø7.5mm × 30mm	14-574530
Fixed Screw, ø7.5mm × 35mm	14-574535
Fixed Screw, ø7.5mm × 40mm	14-574540
Fixed Screw, ø7.5mm × 45mm	14-574545
Fixed Screw, ø7.5mm × 50mm	14-574550
Fixed Screw, ø7.5mm × 55mm	14-574555
Fixed Screw, ø8.5mm × 30mm	14-574630
Fixed Screw, ø8.5mm × 35mm	14-574635
Fixed Screw, ø8.5mm × 40mm	14-574640
Fixed Screw, ø8.5mm × 45mm	14-574645
Fixed Screw, ø8.5mm × 50mm	14-574650
Fixed Screw, ø8.5mm × 55mm	14-574655
Fixed Cross Connector, 12mm	14-575142
Fixed Cross Connector, 14mm	14-575143
Fixed Cross Connector, 16mm	14-575153
Fixed Cross Connector, 18mm	14-575154
Fixed Cross Connector, 20mm	14-575155
Fixed Cross Connector, 22mm	14-575156
Fixed Cross Connector, 24mm	14-575157

## KIT CONTENTS (continued)

### Polaris 6.35 SST Hooks 14-509671

DESCRIPTION	PART NUMBER
Pedicle Hook, Small, 6mm	14-575500
Pedicle Hook, Medium, 7.5mm	14-575502
Pedicle Hook, Large, 9mm	14-575504
Left Angled Hook, Small, 6mm	14-575506
Right Angled Hook, Small, 6mm	14-575508
Left Angled Hook, Medium, 7.5mm	14-575510
Right Angled Hook, Medium, 7.5mm	14-575512
Left Angled Hook, Large, 9mm	14-575514
Right Angled Hook, Large, 9mm	14-575516
Narrow Laminar Hook, Small, 6mm	14-575518
Narrow Laminar Hook, Medium, 7.5mm	14-575520
Narrow Laminar Hook, Large, 9mm	14-575522
Narrow Reduced Laminar Hook, Small, 6mm	14-575524
Narrow Reduced Laminar Hook, Medium, 7.5mm	14-575526
Narrow Reduced Laminar Hook, Large, 9mm	14-575528
Wide Laminar Hook, Small, 6mm	14-575530
Wide Laminar Hook, Medium, 7.5mm	14-575532
Wide Laminar Hook, Large, 9mm	14-575534
Left Offset Hook, Small, 6mm	14-575536
Right Offset Hook, Small, 6mm	14-575538
Left Offset Hook, Medium, 7.5mm	14-575540
Right Offset Hook, Medium, 7.5mm	14-575542
Left Offset Hook, Large, 9mm	14-575544
Right Offset Hook, Large, 9mm	14-575546
Angled Blade Hook, Small, 6mm	14-575548
Angled Blade Hook, Medium, 7.5mm	14-575550
Angled Blade Hook, Large, 9mm	14-575552
Extended Hook, Small, 6mm	14-575554
Extended Hook, Medium, 7.5mm	14-575556
Extended Hook, Large, 9mm	14-575558

### Polaris 6.35 SST Standard Implants 14-509672

DESCRIPTION	PART NUMBER
Multi-axial Screw, $\varnothing$ 4.75mm $\times$ 20mm	14-572220
Multi-axial Screw, $\varnothing$ 4.75mm $\times$ 25mm	14-572225
Multi-axial Screw, $\varnothing$ 4.75mm $\times$ 30mm	14-572230
Multi-axial Screw, $\varnothing$ 4.75mm $\times$ 35mm	14-572235
Multi-axial Screw, $\varnothing$ 4.75mm $\times$ 40mm	14-572240
Multi-axial Screw, $\varnothing$ 4.75mm $\times$ 45mm	14-572245
Multi-axial Screw, $\varnothing$ 4.75mm $\times$ 50mm	14-572250
Multi-axial Screw, $\varnothing$ 5.5mm $\times$ 30mm	14-572330
Multi-axial Screw, $\varnothing$ 5.5mm $\times$ 35mm	14-572335
Multi-axial Screw, $\varnothing$ 5.5mm $\times$ 40mm	14-572340
Multi-axial Screw, $\varnothing$ 5.5mm $\times$ 45mm	14-572345
Multi-axial Screw, $\varnothing$ 5.5mm $\times$ 50mm	14-572350
Multi-axial Screw, $\varnothing$ 5.5mm $\times$ 55mm	14-572355
Multi-axial Screw, $\varnothing$ 6.5mm $\times$ 30mm	14-572430
Multi-axial Screw, $\varnothing$ 6.5mm $\times$ 35mm	14-572435
Multi-axial Screw, $\varnothing$ 6.5mm $\times$ 40mm	14-572440
Multi-axial Screw, $\varnothing$ 6.5mm $\times$ 45mm	14-572445
Multi-axial Screw, $\varnothing$ 6.5mm $\times$ 50mm	14-572450
Multi-axial Screw, $\varnothing$ 6.5mm $\times$ 55mm	14-572455
Multi-axial Screw, $\varnothing$ 7.5mm $\times$ 30mm	14-572530
Multi-axial Screw, $\varnothing$ 7.5mm $\times$ 35mm	14-572535
Multi-axial Screw, $\varnothing$ 7.5mm $\times$ 40mm	14-572540
Multi-axial Screw, $\varnothing$ 7.5mm $\times$ 45mm	14-572545
Multi-axial Screw, $\varnothing$ 7.5mm $\times$ 50mm	14-572550
Multi-axial Screw, $\varnothing$ 7.5mm $\times$ 55mm	14-572555
Multi-axial Screw, $\varnothing$ 8.5mm $\times$ 30mm	14-572630
Multi-axial Screw, $\varnothing$ 8.5mm $\times$ 35mm	14-572635
Multi-axial Screw, $\varnothing$ 8.5mm $\times$ 40mm	14-572640
Multi-axial Screw, $\varnothing$ 8.5mm $\times$ 45mm	14-572645
Multi-axial Screw, $\varnothing$ 8.5mm $\times$ 50mm	14-572650
Multi-axial Screw, $\varnothing$ 8.5mm $\times$ 55mm	14-572655
Standard Helical Flange SST Plug	14-575100
Lateral Connector, 25mm	14-575120
Lateral Connector, 35mm	14-575122
Cross Connector, Extra Small	14-575168
Cross Connector, Small	14-575169
Cross Connector, Medium	14-575170
Cross Connector, Large	14-575171
Med SST Rod with Hex, 6.35mm $\times$ 510mm	14-575402

### Polaris 6.35 SST Standard Implants 14-509672 (continued)

DESCRIPTION	PART NUMBER
Hard SST Rod with Hex, 6.35mm × 510mm	14-575406
Extra Hard SST Rod with Hex, 6.35mm × 510mm	14-575410
Multi-axial Screw Inserters	14-501035

### Polaris 6.35 SST Iliac Fixation 14-509674

DESCRIPTION	PART NUMBER
Multi-axial Screw, ø6.5mm × 70mm	14-573470
Multi-axial Screw, ø6.5mm × 80mm	14-573480
Multi-axial Screw, ø6.5mm × 90mm	14-573490
Multi-axial Screw, ø7.5mm × 60mm	14-573560
Multi-axial Screw, ø7.5mm × 70mm	14-573570
Multi-axial Screw, ø7.5mm × 80mm	14-573580
Multi-axial Screw, ø7.5mm × 90mm	14-573590
Multi-axial Screw, ø8.5mm × 60mm	14-573660
Multi-axial Screw, ø8.5mm × 70mm	14-573670
Multi-axial Screw, ø8.5mm × 80mm	14-573680
Multi-axial Screw, ø8.5mm × 90mm	14-573690

### Polaris 6.35 SST Reduction Screw 14-509675

DESCRIPTION	PART NUMBER
Multi-axial Reduction Screw, ø5.5mm × 30mm	14-577330
Multi-axial Reduction Screw, ø5.5mm × 35mm	14-577335
Multi-axial Reduction Screw, ø5.5mm × 40mm	14-577340
Multi-axial Reduction Screw, ø5.5mm × 45mm	14-577345
Multi-axial Reduction Screw, ø5.5mm × 50mm	14-577350
Multi-axial Reduction Screw, ø5.5mm × 55mm	14-577355
Multi-axial Reduction Screw, ø6.5mm × 30mm	14-577430
Multi-axial Reduction Screw, ø6.5mm × 35mm	14-577435
Multi-axial Reduction Screw, ø6.5mm × 40mm	14-577440
Multi-axial Reduction Screw, ø6.5mm × 45mm	14-577445
Multi-axial Reduction Screw, ø6.5mm × 50mm	14-577450
Multi-axial Reduction Screw, ø6.5mm × 55mm	14-577455
Multi-axial Reduction Screw, ø7.5mm × 30mm	14-577530
Multi-axial Reduction Screw, ø7.5mm × 35mm	14-577535
Multi-axial Reduction Screw, ø7.5mm × 40mm	14-577540
Multi-axial Reduction Screw, ø7.5mm × 45mm	14-577545
Multi-axial Reduction Screw, ø7.5mm × 50mm	14-577550
Multi-axial Reduction Screw, ø7.5mm × 55mm	14-577555

### Polaris 6.35 SST ø4.0mm Screw Case 14-509676

DESCRIPTION	PART NUMBER
Multi-axial SST Screw, ø4mm × 20mm	14-572120
Multi-axial SST Screw, ø4mm × 25mm	14-572125
Multi-axial SST Screw, ø4mm × 30mm	14-572130
Multi-axial SST Screw, ø4mm × 35mm	14-572135
Multi-axial SST Screw, ø4mm × 40mm	14-572140
Fixed SST Screw, ø4mm × 20mm	14-574120
Fixed SST Screw, ø4mm × 25mm	14-574125
Fixed SST Screw, ø4mm × 30mm	14-574130
Fixed SST Screw, ø4mm × 35mm	14-574135
Fixed SST Screw, ø4mm × 40mm	14-574140

## KIT CONTENTS (continued)

### Polaris 6.35 General Instruments LTPI

DESCRIPTION	PART NUMBER
Awl	4005
Ball Tip Probe	4010
Trial Pin, 11 cm	4072
Trial Pin, 9cm	4077
Ratcheting Straight Handle	4329
Tap, 4mm	4363M
Tap, 4.75mm	4364M
Tap, 5.5mm	4365M
Tap, 6.5mm	4366M
Tap, 7mm	4367M
Ratcheting T-Handle	4373
3.2 Straight Probe	4385
3.2 Curved Probe	4396
Lever Activated Multi-axial Screw Driver	4398M
Multi-axial Screw Bi-directional Driver	4500M
Fixed Screw Bi-directional Driver	4516M
Rod Holder	4046
Wing Rocker	4088
Multi-axial Screw Height Adjustor	4493
Rod Bender	4029
<i>In situ</i> Bender, Left	4030
<i>In situ</i> Bender, Right	4031
Bifid Retractor	4032
Plug Starter, 4.8mm	4216M
Screw Fork	4374M
Rod Rotator	4377
Reduction Seat Thread Gripper	4055
Torque Stabilizer	4484
Reduction Seat Depth Gauge	4485
Compressor	4496
Distractor	4497
Rod Persuader	4498
Cross Connector Wrench	4513
Torque Measuring Wrench	4490M

### Polaris 6.35 Deformity Instrument Kit A 14-509642

DESCRIPTION	PART NUMBER
Double-end Plug Starter	14-501010
Fixed Screw Inserter	14-501199
Fixed Screw Height Adjustor	14-501022
Bone Planer	14-501029
Malleable Trial Rod	4083
Lateral <i>In situ</i> Bender, Left	4160
Lateral <i>In situ</i> Bender, Right	4161
Rod Manipulator, Right	14-501023
Straight Rod Pusher	4066
Hex End Wrench	4003
Rod Rotator	4052
Plug Driver	4370
Torque-limiting with Shaft	4378M

### Polaris 6.35 Deformity Instrument Kit B 14-509643

DESCRIPTION	PART NUMBER
Cross Connector Caliper	14-501190
Fixed Cross Connector Bender, Left	14-501091
Fixed Cross Connector Bender, Right	14-501092
Pedicle Hook Starter	94510
Medium Lamina Hook Starter	94512
Narrow Lamina Hook Starter	94513
Thoracic Hook Starter	94515
Wide Lamina Hook Starter	94511
Vertical Hook Holder	14-501036
Short Angle Hook Holder	14-501037
Hook Impactor	14-501038



**Polaris 6.35 Derotation System Case  
14-509644**

DESCRIPTION	PART NUMBER
Derotator Lever	14-501000
Horizontalizer, 55mm	14-501001
Horizontalizer, 75mm	14-501002
Cluster Linkage Rod, 25cm	14-501006
Cluster Linkage Rod, 38cm	14-501007
Comb, 30cm	14-501008
Comb, 36cm	14-501009
2–3 Handle Linkage Rod	14-501003
3–4 Handle Linkage Rod	14-501004
4–5 Handle Linkage Rod	14-501005
Ball Tipped Hex Plug Driver	14-501011
Distractor Wedge	14-500125
Ti Derotation Helical Flange Plug	6710
Wide Handle Derotator	14-501187

## INSTRUMENTS AND IMPLANTS: 5.5mm DEFORMITY IMPLANTS



### MULTI-AXIAL SCREW FAMILY

Ranging in lengths from 20mm–55mm  
(in 5mm increments)

DIAMETER	COLOR CODING
4mm	Gray
4.75mm	Green
5.5mm	Gold
6.5mm	Blue
7.5mm	Purple
8.5mm	Bronze

**Note:** All implants are available in stainless steel and are marked with “SST.” Stainless steel cannot be color-coded.



### REDUCTION MULTI-AXIAL SCREWS

Ranging in lengths from 30mm–55mm  
(in 5mm increments)

DIAMETER	COLOR CODING
5.5mm	Gold
6.5mm	Blue
7.5mm	Purple
8.5mm	Bronze



### FIXED SCREW FAMILY

Ranging in lengths from 20mm–55mm  
(in 5mm increments)

DIAMETER	COLOR CODING
4mm	Gray
4.75mm	Green
5.5mm	Gold
6.5mm	Blue
7.5mm	Purple
8.5mm	Bronze

**Note:** Polaris 5.5™ Titanium Spinal System 4.0mm diameter screws are not for use with cobalt chrome alloy rods.

### MULTI-AXIAL ILIAC SCREWS

Ranging in lengths from 60mm–90mm in 10mm  
increments; double-lead screw shaft thread design

DIAMETER	COLOR CODING
6.5mm	Blue
7.5mm	Purple
8.5mm	Bronze



## TRIVIUM DEROTATION HELICAL FLANGE PLUG

The interface between the seat and the plug incorporates Helical Flange technology:

- Derotation Helical Flange plugs
- Two tings on the bottom:
  - Prevents rod rotation after torquing\*



## STANDARD HELICAL FLANGE PLUG

The interface between the seat and the plug incorporates Helical Flange technology.

Helical Flange technology allows the flanges on the plug and the seat to lock together to minimize head splay and cross-threading.

CP Ti

Ti Alloy

Stainless Steel

CoCrMo

## RODS

Various rod options are available:

- Commercially pure titanium (CP Ti), 510mm
- Titanium alloy (Ti Alloy), 510mm
- Stainless steel (SST), 510mm
  - Medium strength
  - Hard strength
  - Extra-hard strength
- Cobalt chrome alloy (CoCrMo), 300mm and 510mm
  - Extra-hard tensile strength

\*Data on file.

## INSTRUMENTS AND IMPLANTS: 5.5mm DEFORMITY IMPLANTS (continued)



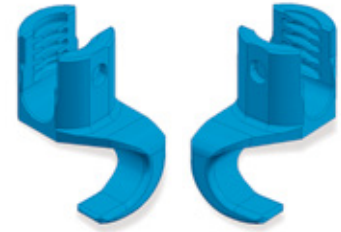
Pedicule Hook



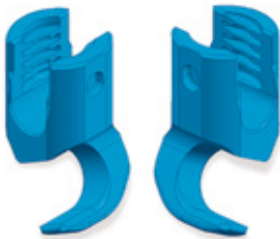
Wide Laminar Hook



Reduced Throat Laminar Hook



Offset Hook, Left and Right



Angled Hook, Left and Right



Narrow Laminar Hook



Angled Laminar Hook



Extended Body

### HOOKS

The Polaris Spinal System has a complete selection of hooks featuring the Helical Flange design. Hook styles are color-coded by throat size (titanium only) and numbered accordingly. All hooks are available in titanium and stainless steel.

THROAT SIZES	COLOR CODING
Small, 6mm	Gold
Medium, 7.5mm	Gray
Large, 9mm	Blue

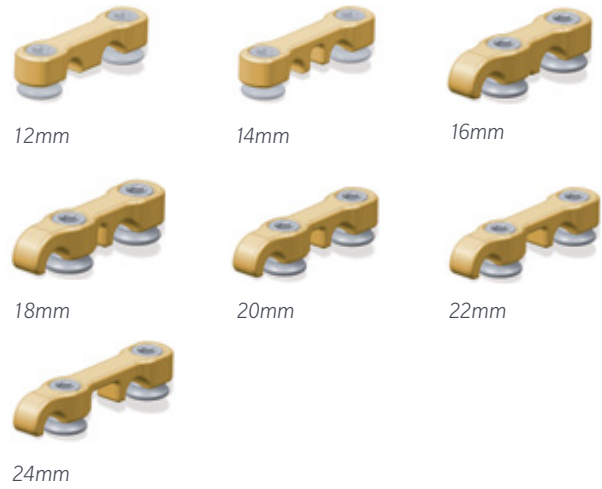
BLADE SIZES	COLOR CODING
Narrow, 5mm	Gold
Wide, 7.3mm	Gray
Pedicule, 9mm	Blue

**Note:** Hooks are numbered on the blade for easy reference during the procedure.



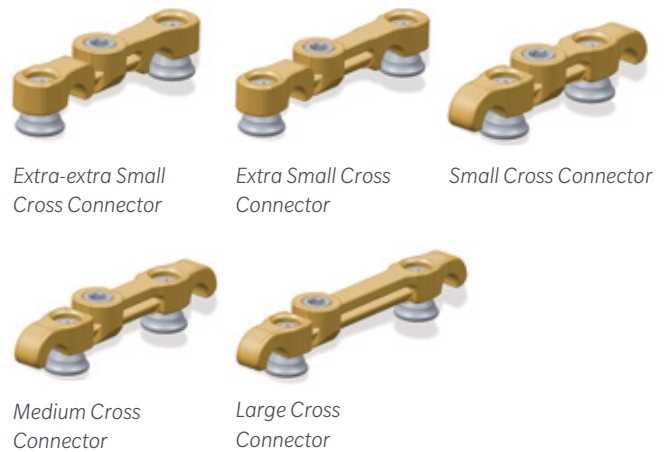
### LATERAL CONNECTORS

Open lateral connectors are offered in four sizes (size is measured from the center of the seat to the end of the post of the lateral connector). The open design uses the standard Helical Flange plugs and provides strong, secure fixation.



### FIXED CROSS CONNECTORS

Ranging in size from 12mm–24mm.



### TELESCOPING CROSS CONNECTORS

Ranging in size from 16mm–75mm.

## INSTRUMENTS AND IMPLANTS: 5.5mm DEFORMITY INSTRUMENTS



**Pedicle Probe, 2.3mm**

PART NUMBER

14-500117



**Straight Thoracic Probe, Small**

PART NUMBER

14-500103



**Tap, 4mm**

PART NUMBER

2000-9022



**Curved Thoracic Probe, Large**

PART NUMBER

14-500137



**Reamer, 4mm**

PART NUMBER

2000-9090



**Fixed Screw Inserter**

PART NUMBER

2000-9085



**Multi-axial Screw Inserter**

PART NUMBER

14-500185



**Cross Connector Caliper**

PART NUMBER

14-500118



**Malleable Rod Template, 510mm**

PART NUMBER

94985



**Vertical Hook Holder**

PART NUMBER

2000-9086



**Rod Rotator** PART NUMBER  
14-500128



**Short Angle Hook Holder** PART NUMBER  
2000-9088



**Pedicle Hook Starter** PART NUMBER  
94510



**Wide Laminar Hook Starter** PART NUMBER  
94511



**Narrow Laminar Hook Starter** PART NUMBER  
94513



**Thoracic Hook Starter** PART NUMBER  
94515



**Medium Laminar Hook Starter** PART NUMBER  
94512



**Hook Impactor** PART NUMBER  
2000-9089



**In situ Benders** PART NUMBER  
Left 2000-9046  
Right 2000-9045



**Deformity Compressor, Large** PART NUMBER  
94667



## INSTRUMENTS AND IMPLANTS: 5.5mm DEFORMITY INSTRUMENTS *(continued)*



**Deformity Compressor, Small** PART NUMBER  
94659



**Wide Handle Derotator** PART NUMBER  
14-500152



**Derotator Lever** PART NUMBER  
14-500120



**Deformity Distractor** PART NUMBER  
94668



**Fixed Cross Connector Benders** PART NUMBER  
Left 94523  
Right 94524



**Comb** PART NUMBER  
Small, 30cm 14-501008  
Large, 36cm 14-501009

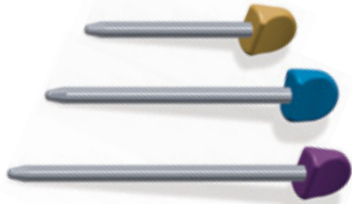


**Cluster Linkage Rod** PART NUMBER  
Small, 25cm 14-501006  
Large, 38cm 14-501007



**Horizontalizer** PART NUMBER  
Small, 55mm 14-500121  
Large, 75mm 14-500122





Handle Linkage Rod	PART NUMBER
Size 2-3	14-501003
Size 3-4	14-501004
Size 4-5	14-501005



T-handle Adaptor	PART NUMBER
	14-500133



Bone Planer	PART NUMBER
	14-500138



Rod Hex Driver	PART NUMBER
	2000-9056



Rod Manipulator, Right	PART NUMBER
	14-500116



Distractor Wedge	PART NUMBER
	14-500125



Straight Rod Pusher	PART NUMBER
	14-500139



Fixed Screw Aligner, Right	PART NUMBER
	94985



Rod Rocker	PART NUMBER
	2000-9051



Iliac Reamer, 5.5mm	PART NUMBER
	14-500172

## INSTRUMENTS AND IMPLANTS: 5.5mm DEFORMITY INSTRUMENTS *(continued)*



**Iliac Reamer, 6.5mm**

PART NUMBER

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14-500173

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**Iliac Reamer, 7.5mm**

PART NUMBER

---

14-500174

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**Iliac Reamer, 8.5mm**

PART NUMBER

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14-500175

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## INSTRUMENTS AND IMPLANTS: 6.35mm DEFORMITY IMPLANTS



### MULTI-AXIAL SCREW FAMILY

Ranging in lengths: 5mm increments

#### SIZES

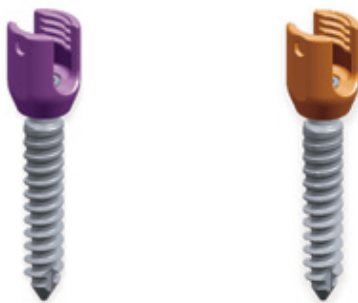
ø4.75mm (20mm–40mm)

ø5.5mm (30mm–40mm)

ø6.5mm (30mm–55mm)

ø7mm (30mm–55mm)

**Note:** All implants are available in stainless steel and are marked with “SST.” Stainless steel cannot be color-coded.



ø7.5mm

ø8.5mm

### LARGE DIAMETER

Ranging in lengths (30mm–55mm): 5mm increments

**Note:** Polaris 6.35 System large diameter screws must use the multi-axial screw inserter, which incorporates a male pentalobe tip to interface with the female pentalobe proximal screw shaft.

### REDUCTION MULTI-AXIAL SCREW

Standard offering is 6.5mm diameter, 40mm and 45mm length: 7mm diameter, 45mm and 50mm length



### FIXED SCREW FAMILY

Ranging in lengths: 5mm increments

#### SIZES

ø4mm (25mm–40mm)

ø4.75mm (25mm–40mm)

ø5.5mm (25mm–45mm)

ø6.5mm (30mm–50mm)

ø7mm (30mm–50mm)

## INSTRUMENTS AND IMPLANTS: 6.35mm DEFORMITY IMPLANTS *(continued)*



### HELICAL FLANGE TRIVIUM DEROTATION PLUG

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The interface between the seat and the plug incorporates Helical Flange technology:

- Derotation Helical Flange plugs
- Two tings on the bottom:
  - Prevents rod rotation after torquing\*



### HELICAL FLANGE STANDARD PLUG

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The interface between the seat and the plug incorporates Helical Flange technology.

Helical Flange technology allows the flanges on the plug and the seat to lock together to minimize head splay and cross-threading.



Pedicule Hook



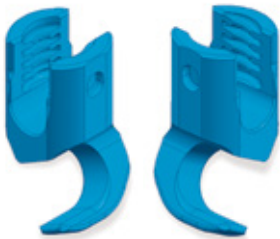
Wide Laminar Hook



Reduced Throat Laminar Hook



Offset Hook, Left and Right



Angled Hook, Left and Right



Narrow Laminar Hook



Angled Laminar Hook



Extended Body

## HOOKS

The Polaris Spinal System has a complete selection of hooks featuring the Helical Flange design. Hook styles are color-coded by throat size (titanium only) and numbered accordingly.

THROAT SIZES	COLOR CODING
Small, 6mm	Gold
Medium, 7.5mm	Gray
Large, 9mm	Blue

BLADE SIZES	COLOR CODING
Narrow, 5mm	Gold
Wide, 7.3mm	Gray
Pedicule, 9mm	Blue

**Note:** Hooks are numbered on the blade for easy reference during the procedure.

## INSTRUMENTS AND IMPLANTS: 6.35mm DEFORMITY IMPLANTS (continued)



CP Ti  
300mm and 480mm



Ti Alloy  
300mm and 480mm



Stainless Steel  
510mm



Extra Small Connector



Small Connector



Medium Connector



Large Connector

### RODS

300mm and 480mm length; commercially pure titanium (CP Ti, Gold) and titanium alloy (Ti, Gray). A hex end aids with contouring and derotating the rod.

**Note:** A 600mm length rod is available upon request.



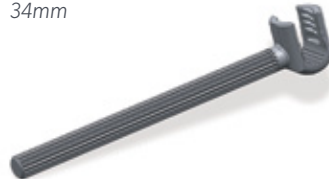
24mm



34mm



50mm



75mm

### TELESCOPING CROSS CONNECTOR

Ranging in size from 29.5mm–80mm.



14mm



16mm



18mm



20mm



22mm



24mm

### LATERAL CONNECTORS

Open lateral connectors are offered in four sizes (size is measured from the center of the seat to the end of the post of the lateral connector). The open design uses the Helical Flange design and provides strong, secure fixation.

### FIXED CROSS CONNECTOR

Ranging in size from 14mm–24mm.

**INSTRUMENTS AND IMPLANTS: 6.35mm DEFORMITY INSTRUMENTS (continued)**



**Plug Driver** PART NUMBER  
4370



**Fixed Screw Height Adjuster** PART NUMBER  
14-501022



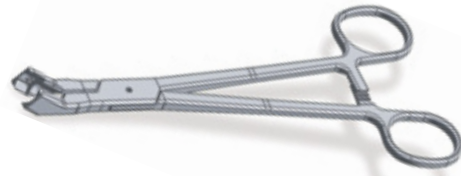
**Ball Tipped Hex Plug Driver** PART NUMBER  
14-501011



**Fixed Screw Inserter** PART NUMBER  
14-501199



**Torque-limiting with Shaft** PART NUMBER  
4378M



**Short Angle Hook Holder** PART NUMBER  
14-501037



**Cross Connector Caliper** PART NUMBER  
14-501190



**Pedicle Hook Starter** PART NUMBER  
94510



**Double-end Plug Starter** PART NUMBER  
14-501010



## INSTRUMENTS AND IMPLANTS: 6.35mm DEFORMITY INSTRUMENTS *(continued)*



<b>Vertical Hook Holder</b>	PART NUMBER
	14-501036



<b>Bone Planer</b>	PART NUMBER
	14-501029



<b>Multi-axial Screw Inserter</b>	PART NUMBER
	14-501035



<b>Malleable Trial Rod</b>	PART NUMBER
	4083



<b>Hook Impactor</b>	PART NUMBER
	14-501038



<b>Narrow Laminar Hook Starter</b>	PART NUMBER
	94513



<b>Medium Laminar Hook Starter</b>	PART NUMBER
	94512



<b>Wide Laminar Hook Starter</b>	PART NUMBER
	94511



<b>Thoracic Hook Starter</b>	PART NUMBER
	94515



<b>In situ Benders</b>	PART NUMBER
Left	4030
Right	4031





Fixed Cross Connector Benders	PART NUMBER
Left	14-501091
Right	14-501092



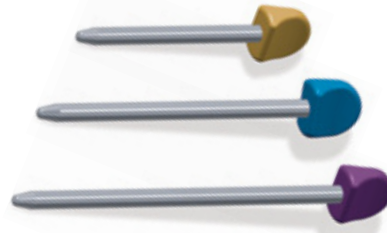
Lateral In Situ Benders	PART NUMBER
Left	4160
Right	4161



Wide Handle Derotator	PART NUMBER
	14-501187



Derotator Lever	PART NUMBER
	14-501000



Handle Linkage Rod	PART NUMBER
2-3	14-501003
3-4	14-501004
4-5	14-501005



Comb	PART NUMBER
Small, 30cm	14-501008
Large, 36cm	14-501009



Cluster Linkage Rod	PART NUMBER
Small, 25cm	14-501006
Large, 38cm	14-501007



Horizontalizer	PART NUMBER
Small, 55mm	14-501001
Large, 75mm	14-501002

**INSTRUMENTS AND IMPLANTS: 6.35mm DEFORMITY INSTRUMENTS** *(continued)***Straight Rod Pusher**

PART NUMBER

4066

**Rod Manipulator, Right**

PART NUMBER

14-501023

**Hex End Wrench**

PART NUMBER

4003

**Distractor Wedge**

PART NUMBER

14-500125

## IMPORTANT INFORMATION ON POLARIS DEFORMITY SYSTEM AND TRIVIUM DEROTATION SYSTEM

### Description

The Polaris Spinal System is a spinal fixation device made from titanium alloy (Ti-6Al-4V), unalloyed titanium and cobalt chrome alloy (Co-28Cr-Mo) 5.5mm diameter rods. The system includes screws, various types and sizes of rods, locking nuts, hooks, lateral connectors, plugs, fixation washers, dominoes and various cross connectors. Various instruments are also available as part of the Polaris Spinal System for use by the surgeon to facilitate implantation of the device.

### Indications for Use

The Polaris Spinal System is a non-cervical spinal fixation device intended for immobilization and stabilization as an adjunct to fusion 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 and for use with autograft. The device is indicated for all the following indications: 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, pseudarthrosis and failed previous fusion.

The Ballista® instruments are intended to be used with the Polaris 5.5 implants. The Ballista instruments, when used with the Ballista cannulated screws and percutaneous rods, are indicated to provide the surgeon with a percutaneous approach for posterior spinal surgery for the following indications: 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, pseudarthrosis and failed previous fusion that warrant the use of a non-cervical spinal fixation device intended for use as a pedicle screw fixation system or sacral/iliac screw fixation system. Pedicle screw fixation is limited to skeletally mature patients and for use with autograft.

The AccuVision® Instruments, when used with the Polaris Spinal System, are indicated to provide the surgeon with a minimally invasive approach for posterior spinal surgery for the following indications: 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, pseudarthrosis and failed previous fusion that warrant a noncervical spinal fixation device intended for use as a pedicle screw fixation system or sacral/iliac screw fixation system.

Pedicle screw fixation is limited to skeletally mature patients and for use with autograft. The AccuVision Illuminated Blade Tip is intended for the illumination of surgical procedures and exclusively for use with the AccuVision retractor frame.

The AccuVision Illuminated Blade Tip is a sterile, single-use, latex free, plastic fiber-optic device intended to bring cool-area lighting into spinal surgeries. The AccuVision Illuminated Blade Tip is intended for use with a 300 watt xenon illuminator, using a 3mm fiber optic cable with a female ACMI connector.

### Contraindications

- 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
- Open wounds local to the operative area
- Any case not described in the specific indications

The AccuVision Blade Tips present no additional contraindications. The user should be familiar with the use of light sources and cables and should take precautions accordingly.

### Warnings

- 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 failed previous 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, nonunion, fracture of the vertebra, neurological injury and vascular or visceral injury.
- Implant Strength and Loading. The Polaris Spinal System is intended to assist healing and is not intended to replace normal bony structures. Loads produced by weight

## IMPORTANT INFORMATION ON POLARIS DEFORMITY SYSTEM AND TRIVIUM DEROTATION SYSTEM (continued)

bearing and activity levels will dictate the longevity of the implant. These devices are not designed to withstand the unsupported stress of full weight bearing or load bearing, and cannot withstand activity levels and/or loads equal to those placed on normal healthy bone. If healing is delayed or does not occur, the implant could eventually break due to metal fatigue.

- Therefore, it is important that immobilization of the operative site be maintained until firm bony union (confirmed by clinical and radiographic examination) is established. The surgeon must be thoroughly knowledgeable in the medical, surgical, mechanical and metallurgical aspects of the Polaris Spinal System. Postoperative care is extremely important. The patient should be warned that noncompliance with postoperative instructions could lead to breakage of the implant and/or possible migration requiring revision surgery to remove the implant.
- Selection of Implants. Selection of the proper size, shape and design of the implant increases the potential for success. While proper selection can help minimize risks, the size and shape of human bones present limitations on the size and strength of implants.
- Corrosion. Contact of dissimilar metals accelerates the corrosion process, which could increase the possibility of fatigue fracture of the implants. Therefore, only use like or compatible metals for implants that are in contact with each other. Never use stainless steel and titanium implant components in the same construct. Cobalt chrome alloy rods should not be used with stainless steel components. Cobalt chrome alloy rods are to be used ONLY with titanium implant components in the same construct.
- Sterile Packaging. The AccuVision plastic components are packaged sterile as a single use device. Do not resterilize for reuse.
- Light Source. The AccuVision Illuminated Blade Tip is designed for use with 300 watt xenon illuminators, using a 3mm fiber optic cable. Do not use light sources rated higher than 300 watts, or cables with fiber optic bundles of more than 3mm diameter. Use of higher watt sources or larger diameter cables could result in overheating, causing product failure and patient injury. Should the blade assembly become cut, collect fluid inside, appear broken or damaged in any manner, it should be replaced to minimize risk to the patient.
- Do not operate the light source and cable without the light strip attached. Without the AccuVision Illuminated Blade Tip, the output from the fiberoptic cable is extremely bright, hot and may cause burns, ignite drapes/gowns or temporarily blind vision.

### Limits of System Compatibility

- When used with the Ballista instruments, the use of the Ballista cannulated 5.5 screws and percutaneous 5.5 rods is limited to the implantation of rod lengths of 100mm or less, and excludes the use of system cross connectors or hooks. When used with the AccuVision instruments, is limited to the implantation of rod lengths of 100mm or less, and excludes the use of system cross connectors or hooks.

### Precautions

- Single Use Only. Never re-implant an explanted device under any circumstances. Although the device appears undamaged, it may have small defects and internal stress patterns, which may lead to early breakage.
- Handling of Implants. If contouring of the rod is required, avoid sharp bends and reverse bends. Avoid notching or scratching of the device, which could increase internal stresses and lead to early breakage.
- Implant Removal After Healing. After healing is complete, the implant is intended to be removed since it is no longer necessary. Implants that are not removed may result in complications such as implant loosening, fracture, corrosion, migration, pain or stress shielding of bone, particularly in young, active patients. Implant removal should be followed by adequate postoperative management.
- Adequate Patient Instructions. A patient must be instructed on the limitations of the metallic implant, and should be cautioned regarding physical activity and weight bearing or load bearing prior to complete healing.
- Surgical Techniques. The implantation of pedicle screw spinal systems should be performed only by experienced spinal surgeons with specific training in the use of this pedicle screw spinal system because this is a technically demanding procedure presenting a risk of serious injury to the patient. Please refer to the specific surgical technique for this device for more information.
- Illuminated Blades. Light sources vary widely in emission of visible and infrared energy. As a precautionary measure, when using AccuVision Illuminated Blade Tips, we recommend occasionally monitoring connector temperature during first time use with a new light source or lamp; thereafter if needed. As is common with fiber-optic equipment, the metal portion of the connector can become hot to the touch. Use plastic grip as a handle. Do not place the metal ring portion of connector directly on the patient's skin. After use, the AccuVision Blade Tips may be a potential biohazard. Handle and dispose of in accordance with accepted medical practice and applicable local, state and federal laws and regulations.

### Possible Adverse Effects

- Nonunion (pseudarthrosis) or delayed union.
- Bending, fracture, loosening or migration of the implant.
- Metal sensitivity or foreign body reaction.
- Decrease in bone density due to stress shielding.
- Pain, discomfort or abnormal sensations due to presence of the implant.
- Nerve, soft tissue or blood vessel damage due to surgical trauma.
- Fracture of bony structures.
- Nerve root or spinal cord impingement.
- Dural leak.
- Bursitis.
- Necrosis of bone.
- Hemorrhage.
- Infection.
- Death.

### Directions for Use—Illuminated Blades

- See the AccuVision surgical technique for instructions on attaching the AccuVision Illuminated Blade Tip to the retractor system. The AccuVision Illuminated Blade Tip should be used in accordance with all instructions for the AccuVision retractor frame. The AccuVision Illuminated Blade Tip connects to a light source used for head lamps or endoscopes. A 3mm fiber-optic cable with an ACMI fitting attaches the light source and AccuVision Illuminated Blade Tip. Make sure the Lighted Blade connector is securely attached to the cable. The cable should be in good repair with clean optics. Dirty optics or cables in need of repair can cause excessive heat at the connectors. Turning down overhead lighting may improve visualization within the surgical site. Sterile unless package is opened or damaged. Do not use if package is opened or damaged.

### Sterilization

- The Polaris Spinal System is provided nonsterile, and must be sterilized prior to use. All packaging materials must be removed prior to sterilization. The following steam sterilization parameters are recommended.

Cycle	Temperature	Time
High Vacuum	132° C (270° F)	8 minutes

**Note:** Allow for cooling.

- Individuals not using the recommended method, temperature and time are advised to validate any alternative methods or cycles using an approved method or standard. The AccuVision sterile packaged plastic components are sterilized by exposure to a minimum dose of 25-kGy gamma radiation or by EtO, according to individual component labeling. These components are for single use only and cannot be re-sterilized. Do not use if package has been compromised.

### Care and Handling Instructions

- Sterile packaged, single-use components should be inspected prior to use for and damage or contamination.
- If components appear damaged, do not use.

### Caution

- Federal law (USA) restricts this device to sale by or on the order of a physician.





**Disclaimer:** This document is intended exclusively for physicians and is not intended for laypersons. Information on the products and procedures contained in this document is of a general nature and does not represent and does not constitute medical advice or recommendations. Because this information does not purport to constitute any diagnostic or therapeutic statement with regard to any individual medical case, each patient must be examined and advised individually, and this document does not replace the need for such examination and/or advice in whole or in part.



**Caution:** Federal (USA) law restricts this device to sale by or on the order of a physician. Rx Only. Please see the product Instructions for Use for a complete listing of the indications, contraindications, precautions, warnings and adverse effects.



**Manufactured by:**  
Zimmer Biomet Spine, Inc.  
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