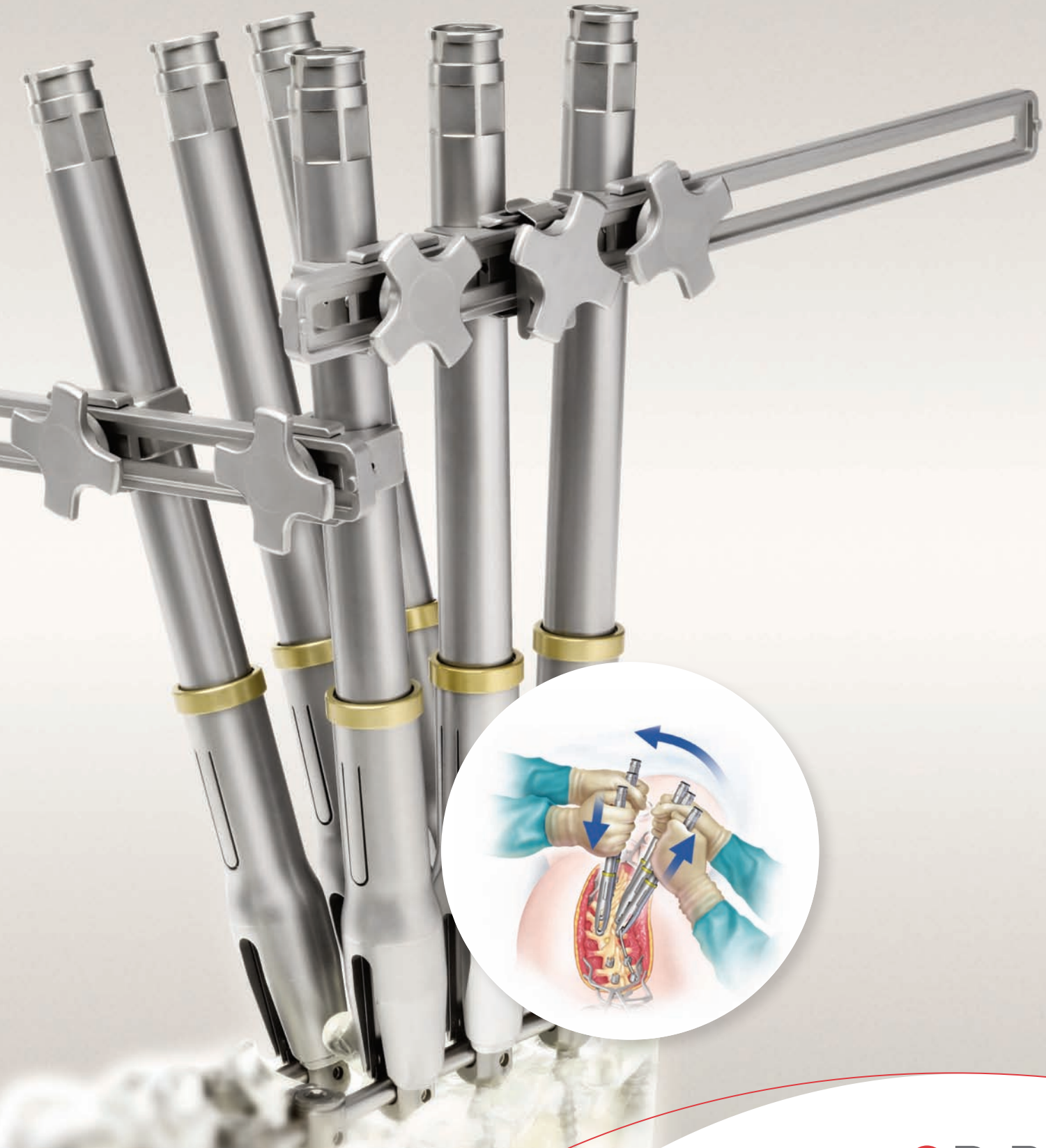


Vertebral Body Derotation
System Guide and
Ordering Information



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INTRODUCTION

DePuy Spine continues to support the goal of providing solutions to surgeon challenges when treating spinal disorders. Collaborating with renowned spine specialists, the Company has developed a new set of vertebral body derotation instrumentation especially designed for the Expedium® Spine System.



The Expedium® Vertebral Body Derotation (VBD) Set design allows for an easy and quick attachment & release to the screws involved in the correction maneuver, without compromising the security surgeons require in such connection. The set also includes a selection of instruments that let the surgeon connect the derotation instrumentation at each vertebral level (Segmental Derotation), at multiple vertebral levels along the spine (EnBloc Derotation) or both ways.

The input of each surgeon designer relative to their derotation technique, allowed DePuy Spine to develop a set that will accommodate the techniques mentioned above, as well as muscle sparing approaches involving DePuy Spine's Minimally Invasive System, the Viper® 2 System.

The Expedium® family of products includes a wide selection of deformity specific implants and instruments to support the DePuy Spine philosophy of patient driven, pathology specific solutions.



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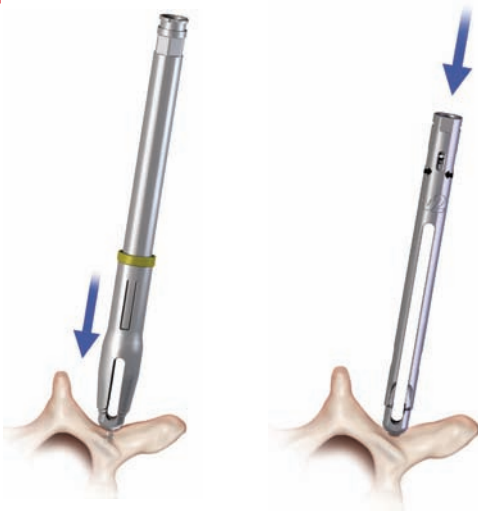
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System Information

SET COMPONENTS

The Expedium® Vertebral Body Derotation (VBD) Set includes key components designed to facilitate the vertebral body derotation maneuvers to achieve a 3D correction of the scoliotic spine. Among those components are:

FIGURE 1



Expedium® Quick Stick and Viper® 2 Screw Extension

VERTEBRAL BODY DEROTATION INSTRUMENTS

The Expedium® VBD Set includes two options for derotation maneuvers:

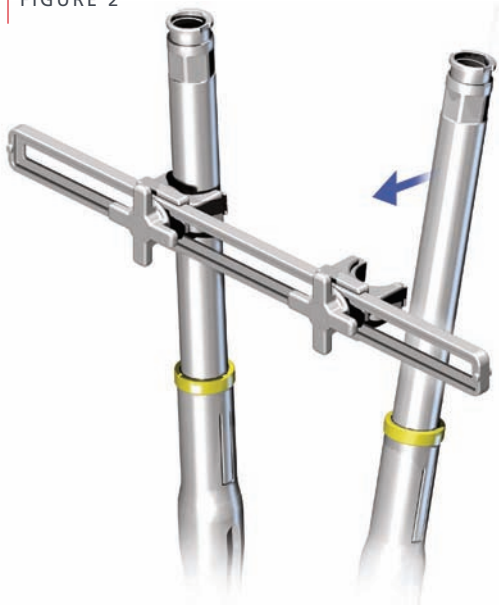
- a. Expedium® Quick Sticks
- b. Viper® 2 Screw Extensions

Both instruments are completely compatible and easily attach to the pedicle screw to act as a lever for the derotation maneuver.

The Expedium® Quick Sticks are used when speed and strength of instrument/screw attachment are the priorities. The VIPER® 2 Screw Extensions can be used when there is limited room for all the instrumentation for derotation and a thinner instrument is needed.

The Expedium® VBD set includes several options that allow the surgeon to connect the derotation instruments (Quick Sticks and/or Viper® 2 Screw Extensions) across vertebral levels for Segmental Derotation, along the spine for EnBloc Derotation or a combination of both.

FIGURE 2



Expedium® Quick Sticks connected with Derotation Frame

The options to connect the Quick Sticks are:

- a. Derotation Frame: attaches to the top of the derotation instruments via fixed or modular Clamps, allowing the surgeon to connect two or more derotation instruments together.

FIGURE 3



Alignment Fork and Derotation Handle

- b. Alignment Fork: quickly connects the derotation instruments as an initial step to give the spine proper alignment. It allows more freedom of movement of the derotation instruments in the sagittal plane.

FIGURE 4



Expedium® Flex-Clip Insert connected to Quick Stick

REDUCTION INSTRUMENTS

The VBD Set is compatible with the Expedium® Flex-Clip through an updated Insert that can be also linked together with any of the derotation instruments mentioned before.

FIGURE 5



Viper® 2 Screw Extension with Reduction Handle

The Expedium® VBD Set includes the Viper® 2 Reduction Handle to facilitate rod placement through either the Quick Stick or the Screw Extension.

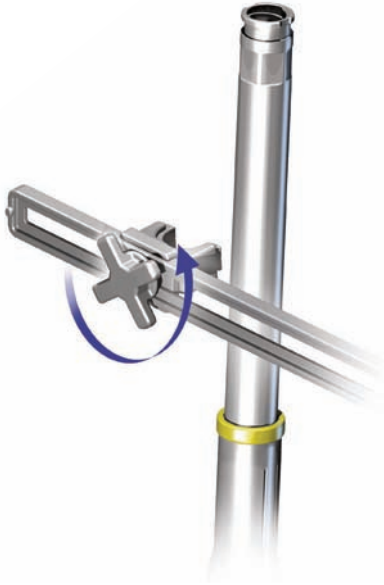
SURGICAL TECHNIQUE

FIGURE 6

**ATTACHING/RELEASING THE QUICK STICKS**

1. Slide the Quick Stick Sleeve all of the way up into the open position and place the end of the Quick Stick over the head of the pedicle screw. Line up the rod slot of the Quick Stick with the rod slot of the screw.
2. Push the Quick Stick onto the pedicle screw by pushing on the back end of the Quick Stick. The Quick Stick will connect to the top notch of the pedicle screw with a subtle snap sound. Lower the outer sleeve of the Quick Stick completely down to click it into place.
3. To remove the Quick Stick, move the outer sleeve up until it clicks into place and pull the Quick Stick off of the pedicle screw by pulling on the end of the Quick Stick.

FIGURE 7



CONNECTING THE QUICK STICKS WITH THE DEROTATION FRAME

1. Confirm that the knob of the Clamp(s) is backed off from fully closed. Push the Quick Stick into the Clamp until you hear/feel a subtle click. Tighten the knob to secure the connection between the Clamp and the Quick Stick.
2. To remove the Quick Stick from the Clamp, unscrew the knob and pull the Quick Stick out.

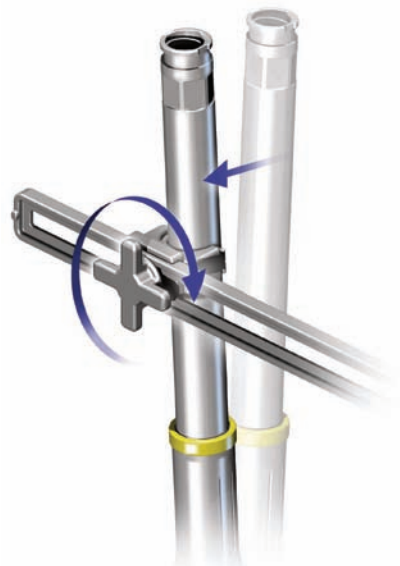
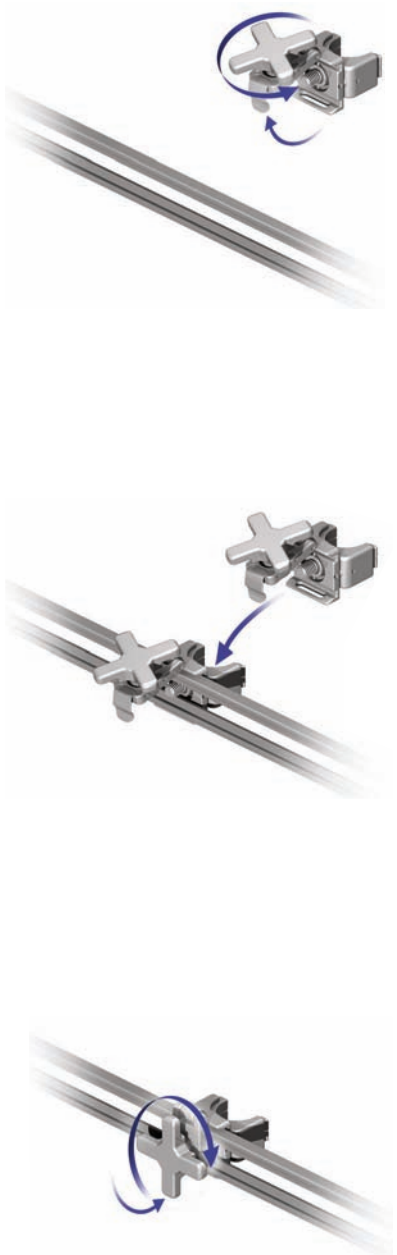


FIGURE 8



ADDING MODULAR CLAMPS

1. Open the Modular Clamp by unthreading the knob completely and pulling the two halves apart.
2. Place the Frame into the open Modular Clamp. Close the Modular Clamp over the Frame and snap the lock feature which will hold the two sides of the Modular Clamp closed before the threads are engaged.
3. To start the thread feature, push the inside Clamp towards the knob and thread the knob. (The pushing force will help to start the engagement of the threads). Do not fully thread the Clamp before attaching the Quick Stick or it will not snap into place.
4. Press the Quick Stick into the Clamp until it snaps into place. Tighten the knob on the Modular Clamp to lock the Quick Stick into place.
5. To remove, unthread the knob to release the Quick Stick. Fully unthread the Clamp and pull the two halves of the Clamp apart. The Clamp will separate and the lock feature will disengage allowing the Clamp to be removed from the frame.

TIGHTENING AND LOOSENING THE KNOBS

1. Connect the Inline and/or the Offset wrenches to the knobs to tighten or loosen the Clamps.

FIGURE 9

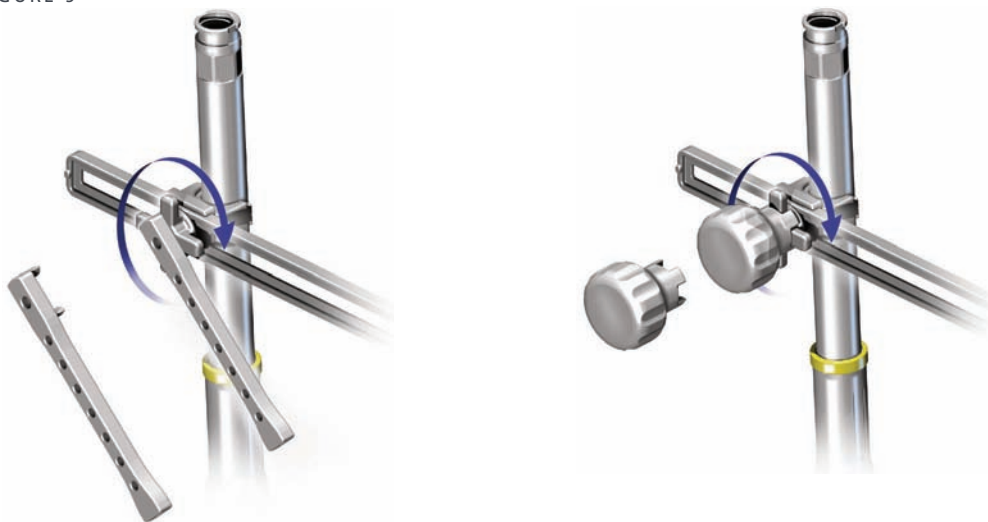


FIGURE 10

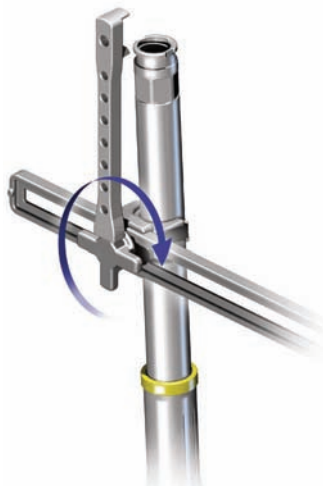


FIGURE 11

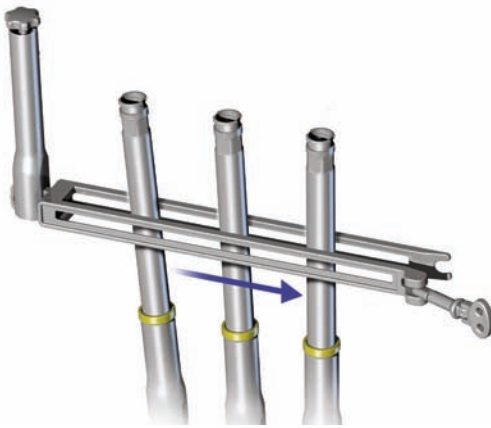


ADDING THE DEROTATION HANDLE

1. Unthread the knob on the Derotation Handle one full revolution from the fully threaded condition.
2. Snap the handle to the frame and tighten the knob to secure the connection. The Derotation Handle can be mounted in either a perpendicular or inline orientation on the frame.
3. To remove the Derotation Handle, unthread the knob one full revolution and press the button on the side of the handle.



FIGURE 12



CONNECTING THE QUICK STICKS WITH THE ALIGNMENT FORK

1. Attach the Derotation Handle to the end of the Alignment Fork. The handle will attach in similar fashion to the frame attachment.
2. Slide the Tuning Fork over the Quick Sticks or Screw Extensions.
3. When the Alignment Fork is engaged over the Quick Sticks, the closure mechanism can be pivoted into the closed position turning the knob to tighten.

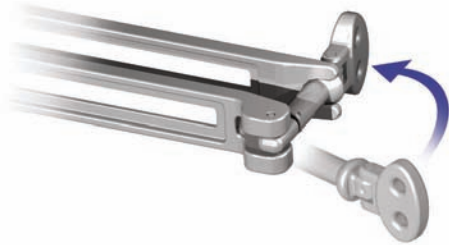


FIGURE 13

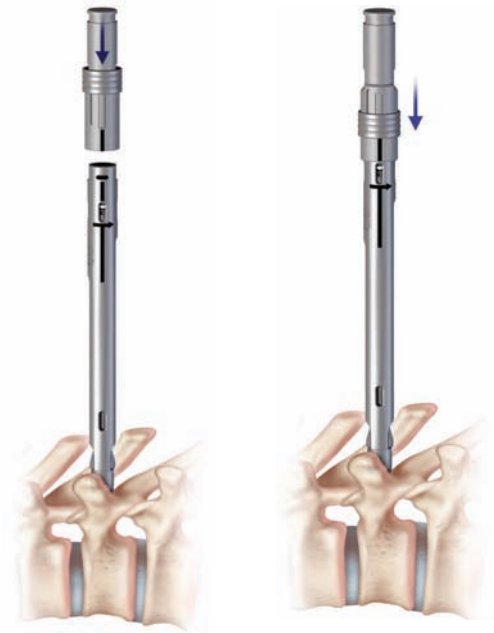


PLACING THE ROD WITH THE REDUCTION HANDLE

Rod Reduction for Quick Sticks

1. Engage the Threaded Post over the Self Retaining Reduction Driver and snap it into place.
2. Load the set screw in the Self Retaining Reduction Driver. Place the driver down through the Quick Stick.
3. Engage the Reduction Handle with the Threaded Post/Reduction Driver assembly.
4. Turn the bottom Reduction Handle and reduce the rod until resistance is felt (when the set screw contacts the top of the pedicle screw). Begin turning the top Reduction Handle to start engaging the set screw into the pedicle screw, continue turning the bottom Reduction Handle to maintain the reduction force on the rod.
5. Once the set screw is fully seated, thread out the Threaded Post by turning the bottom Reduction Handle counterclockwise and remove the complete assembly.

FIGURE 14



ROD REDUCTION FOR SCREW EXTENSIONS

1. Snap the Screw Extensions onto the pedicle screw and tighten them with the MIS Nut Driver.
2. Snap the Reduction Cap onto the Screw Extension by aligning the etched lines. After the Reduction Cap has snapped into place, lower the locking ring on the Reduction Cap to secure the instrument to the Screw Extension. Follow the same steps described for Reduction with the Quick Sticks.
3. To remove the Reduction Cap from the Screw Extension, raise the locking ring all of the way up and pull the Reduction Cap off of the Screw Extension.

FIGURE 15



Ordering Information



ORDERING INFORMATION

Code	Description
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CASE 1 of 2

2797-89-007	Derotation and Connection Case & Lid
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DEROTATION TRAY

2797-89-005	Derotation Tray
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2797-88-935	Expedium® Derotation Quick Stick
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2797-88-882	Expedium Derotation Modular Frame (image shows frame with 2 x modular clamps attached)
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CONNECTION TRAY

2797-89-006	Connection Tray
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2797-88-965	Expedium® Derotation Modular Clamp (image shows 2 x modular clamps attached to frame)
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2797-88-867	Expedium® Derotation Frame Inline Wrench
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2797-88-868	Expedium® Derotation Frame Offset Wrench
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2797-88-869	Expedium® Derotation Quick Stick Anti Torque Wrench
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2797-88-930	Expedium® Derotation Alignment Fork
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2797-88-960	Expedium® Derotation Frame Handle
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ORDERING INFORMATION

Code	Description	
CASE 2 OF 2		
2797-89-007	Outer case	
SCREW EXTENSION TRAY		
2797-89-009	Screw Extension Tray	
2867-25-225	Viper® 2 Screw Extension	
2867-25-405	Castle Nut Remover	
2867-25-400	Viper® 2 Castle Nut Tightener	
2867-25-420	Viper® 2 Castle Nut Tightener/Removal Sleeve	
2867-25-410	Viper® 2 Castle Nut Tightener/Removal Shaft	
2797-88-872	Expedium® Derotation Flex-Clip Insert	
2867-35-750	Expedium® Derotation Reduction Cap	
REDUCTION TRAY		
2797-89-003	Reduction Tray	
2867-35-725	Expedium® Derotation Reduction Shaft	
2867-35-730	Expedium® Derotation Reduction Threaded Post	
2867-35-735	Expedium® Derotation Reduction Handle	
2867-35-400	Viper® 2 Set Screw Inserter	



- 4.5 Spine System
- 5.5 Spine System
- 6.35 Spine System
- Vertebral Body Derotation Set
- SFX™ Cross Connector System
- Anterior Spine System
- Viper® 2 System

INDICATIONS

The **Expedium® Spine System** is intended to provide immobilization and stabilization of spinal segments in skeletally mature patients as an adjunct to fusion in the treatment of acute and chronic instabilities or deformities of the thoracic, lumbar and sacral spine.

The **Expedium® Spine System** is intended for noncervical pedicle fixation and nonpedicle fixation for the following indications: degenerative disc disease (defined as back pain of discogenic origin with degeneration of the disc confirmed by history and radiographic studies); spondylolisthesis; trauma (i.e., fracture or dislocation); spinal stenosis; curvatures (i.e., scoliosis, kyphosis, and/or lordosis); tumor; pseudoarthrosis; and failed previous fusion in skeletally mature patients.

Limited Warranty and Disclaimer: DePuy Spine products are sold with a limited warranty to the original purchaser against defects in workmanship and materials. Any other express or implied warranties, including warranties of merchantability or fitness, are hereby disclaimed.

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