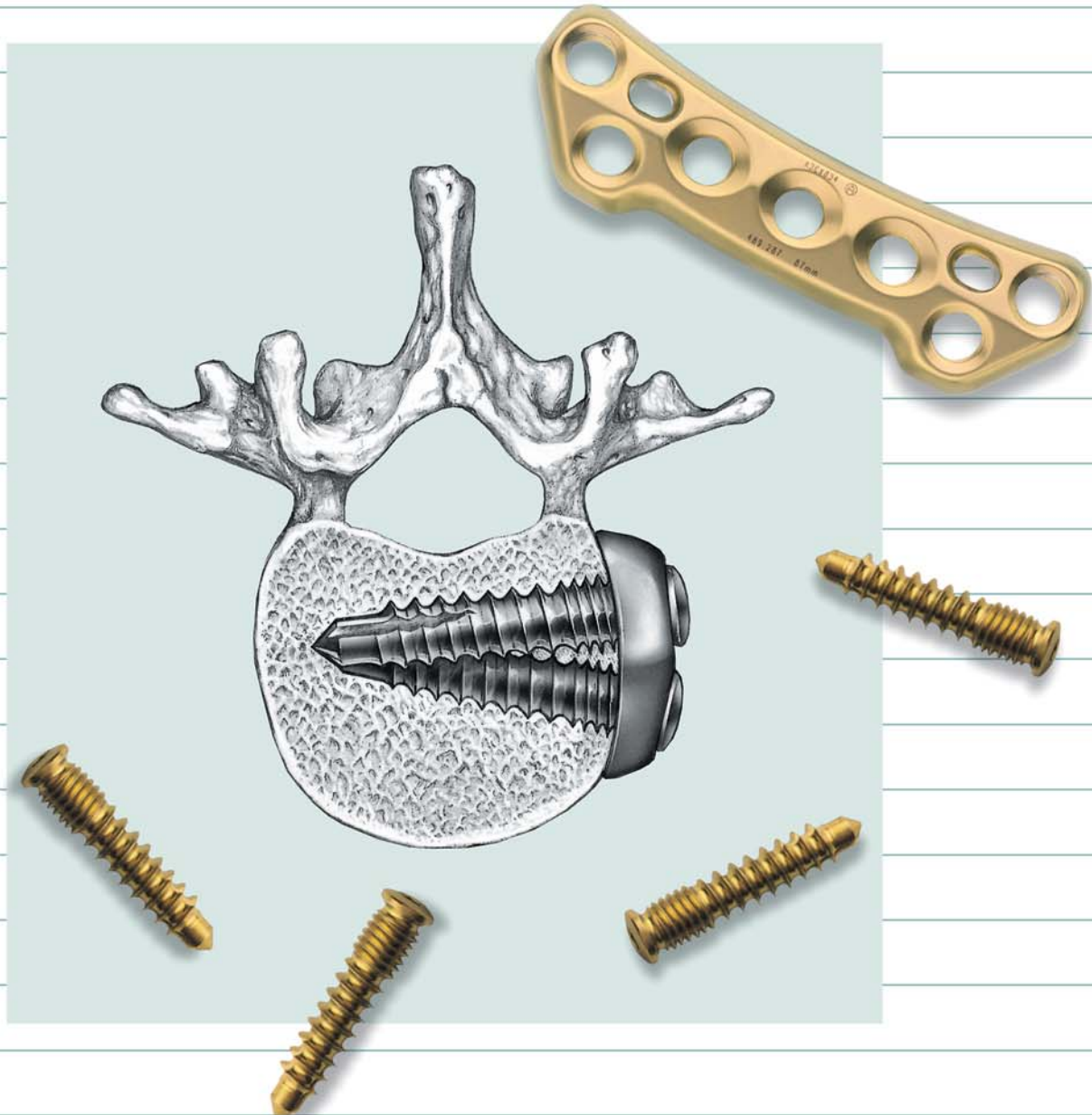


THE TITANIUM

# Anterior Thoracolumbar Locking Plate System

TECHNIQUE GUIDE



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## Titanium Anterior Thoracolumbar Locking Plate System

The Titanium Anterior Thoracolumbar Locking Plate System is designed to secure and stabilize the anterior column of the spine in fractures, tumors and degenerative conditions. The plate is placed anterolaterally through a standard thoracotomy, thoraco-abdominal or retroperitoneal approach, depending on the involved level. The plate is indicated for T10 through L5.

The concept of the plate is to provide compression and fixation across a bone graft. Use of the AO ASIF Spinal Instruments for Anterior Surgery\* facilitates this procedure.

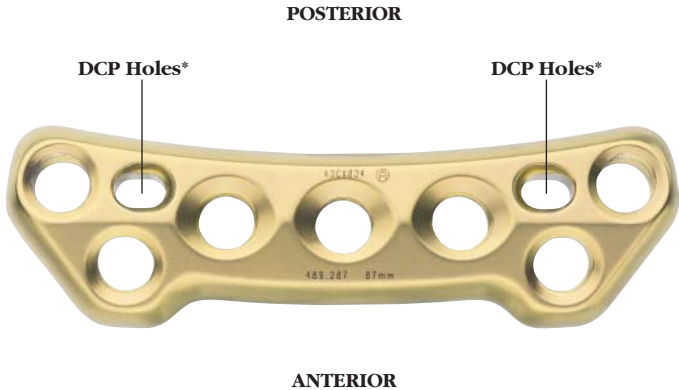
The steps of anterior management using the Titanium Anterior Thoracolumbar Locking Plate System are as follows:

- Corpectomy with complete spinal cord decompression.
- Reconstruction of the normal anatomy.
- Re-establishment of stability using tricortical iliac-crest or fibular-strut grafts.
- Stabilization by securing the graft with the Titanium Anterior Thoracolumbar Locking Plate System.

The Titanium Anterior Thoracolumbar Locking Plate System allows direct compression across the graft site and provides stable fixation of the anterior column of the spine. This system permits immediate stability with direct spinal cord decompression, for rapid mobilization of patients.

\* For more information, refer to the Synthes Spine brochure on Spinal Instruments for Anterior Surgery.

# Product Features



## Plate and Screw Features

- Made of AO Commercially Pure (CP) titanium for MRI and tissue compatibility.
- Plate is precontoured to conform to the shape of the anatomy.



- Screws are triangulated for improved resistance to construct pullout.
- Screws are countersunk into the plate to provide a low profile.



- Screws incorporate a machine thread section which locks the screw to the plate to prevent backout.
- Plates and screws are available in a wide variety of sizes to accommodate variations in anatomy.



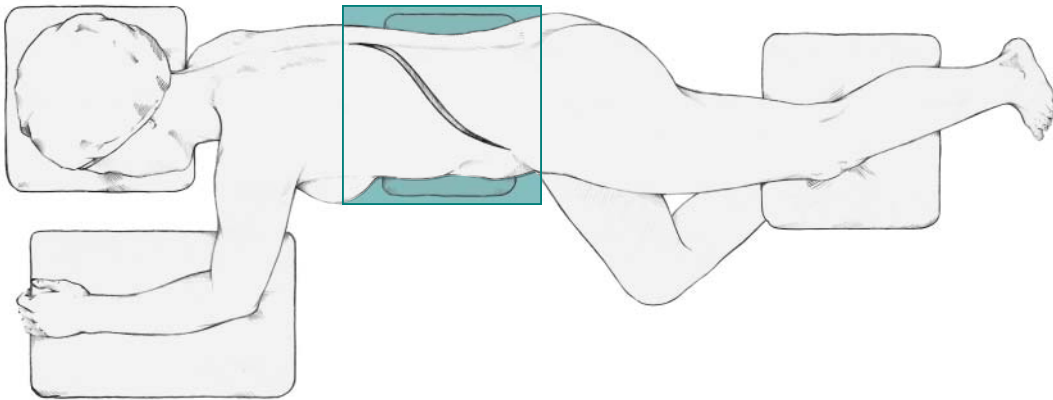
- Self-tapping screws have a cancellous pitch.
- Simple instrumentation facilitates implantation.

\* Dynamic Compression Plate

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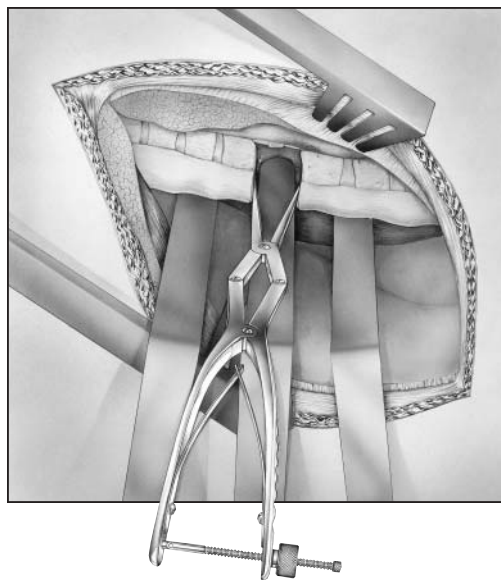
## PREOPERATIVE PLANNING

Preoperative planning plays an important role in the preparation for surgery. Titanium Anterior Thoracolumbar Locking Plate System x-ray templates are available to assist in selecting the appropriate range of plate sizes.



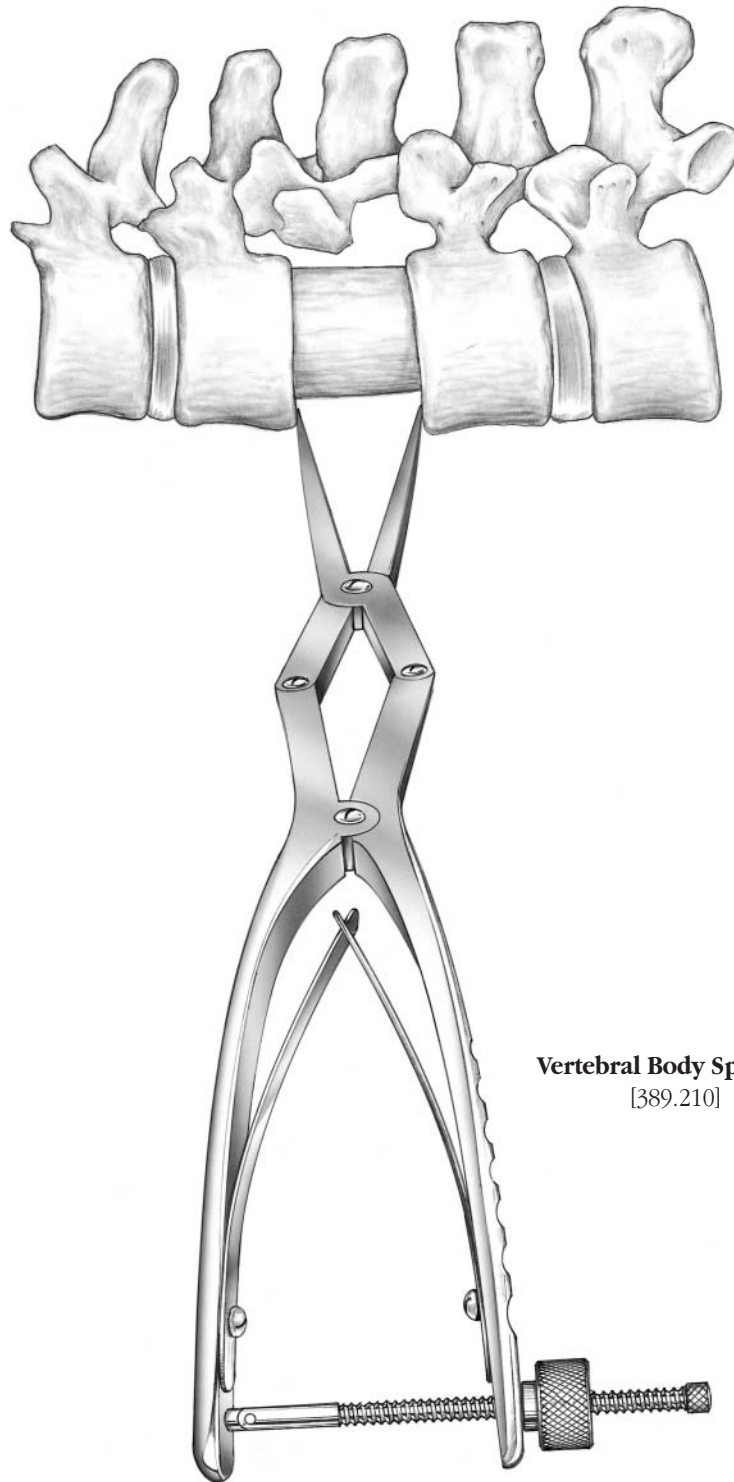
1

The decision on which side to approach the patient is based on the vascular anatomy and spinal pathology.



2

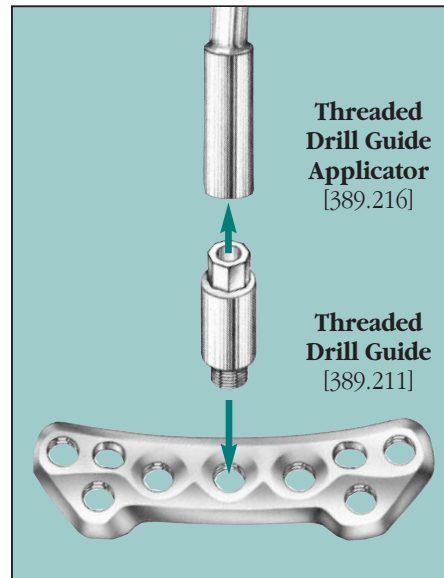
After exposure is obtained and the cord decompressed, use the **Vertebral Body Spreader** [389.210] to correct the kyphosis. This spreader is left in place while the graft is inserted, and may remain during plate positioning.



**Vertebral Body Spreader**  
[389.210]

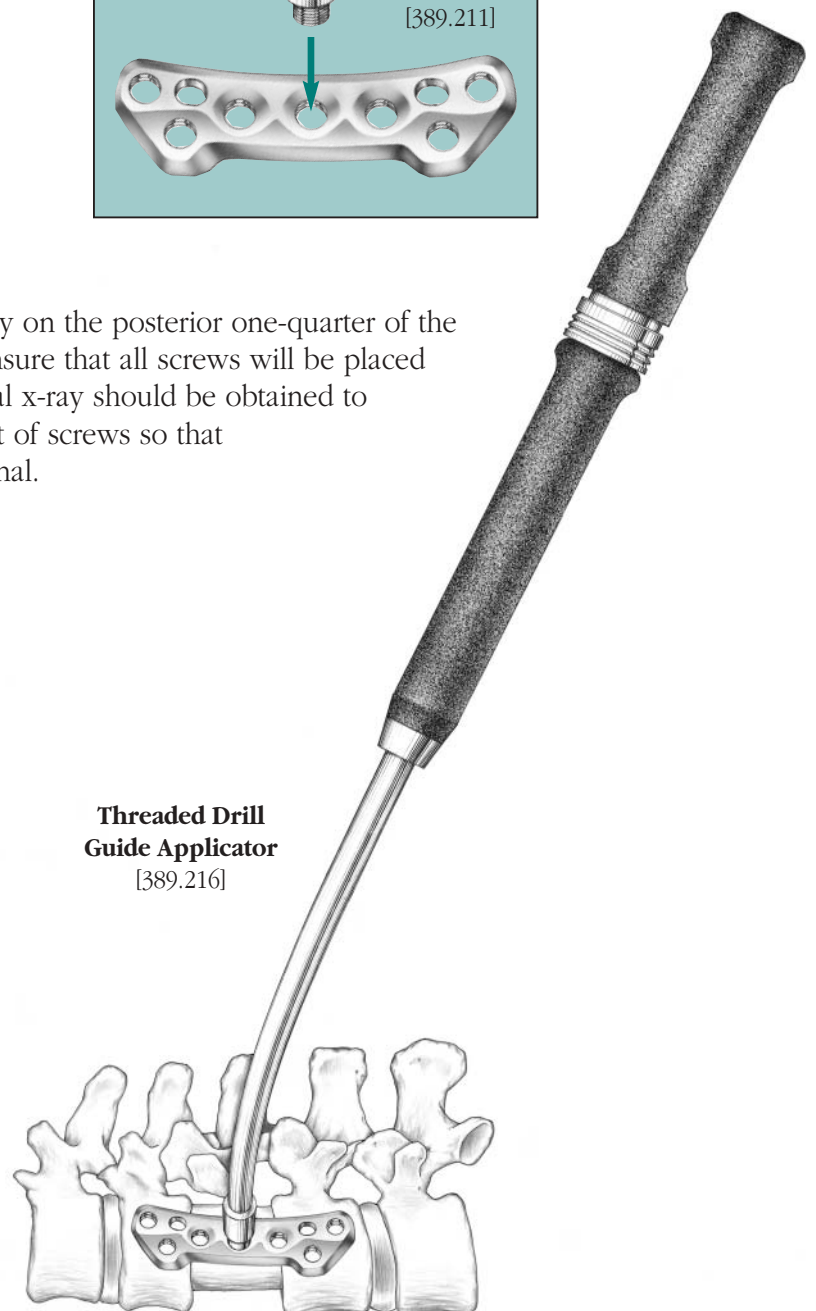
3

Assemble the **Threaded Drill Guide** [389.211] into the center hole of the plate. This drill guide, attached to the **Threaded Drill Guide Applicator** [389.216], works as a plate holder.



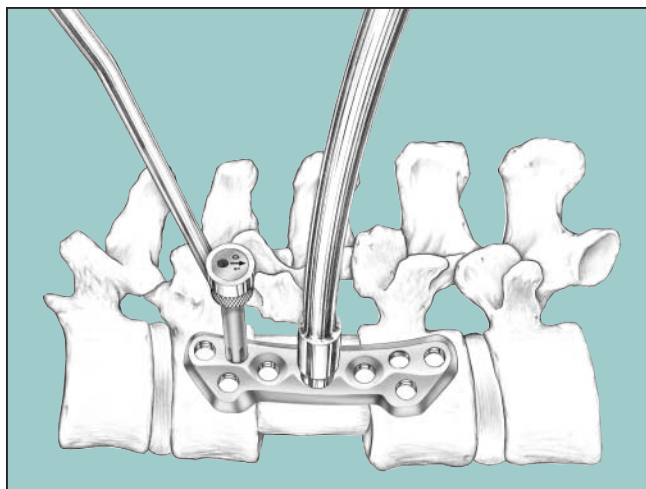
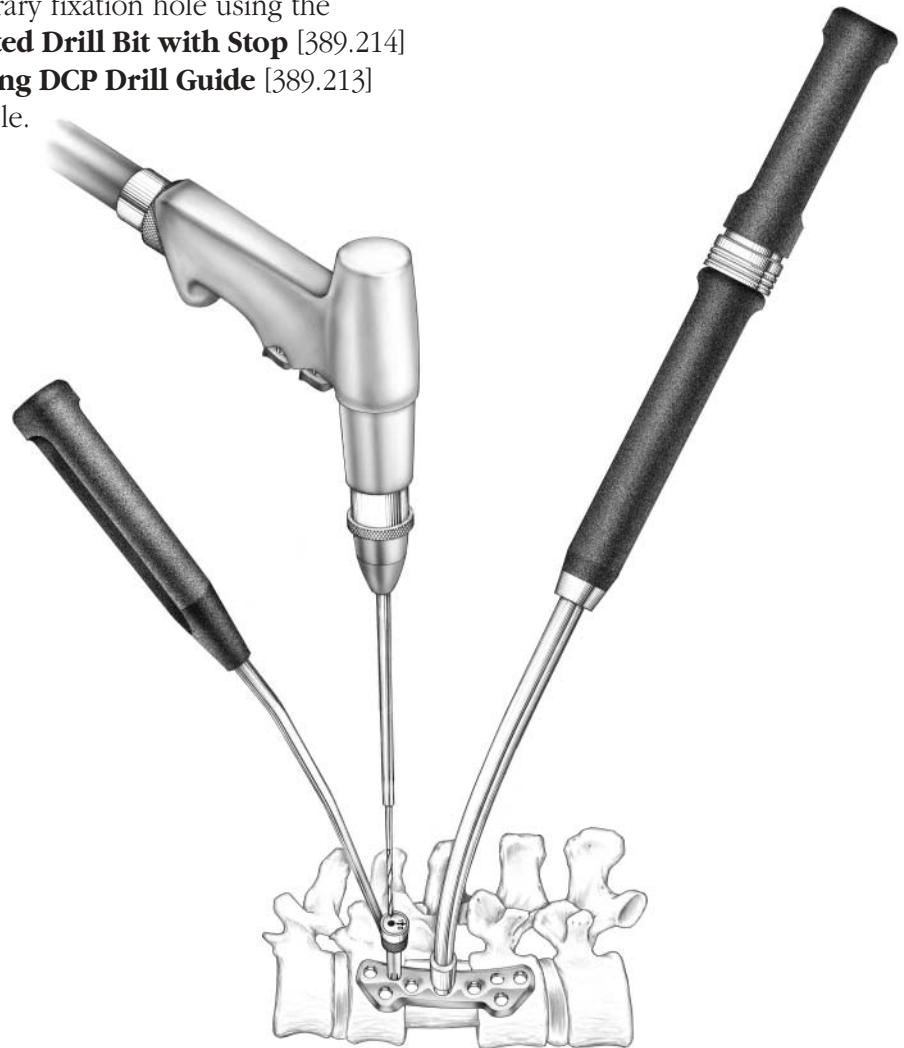
4

Position the plate anterolaterally on the posterior one-quarter of the vertebral body. Take care to ensure that all screws will be placed into the vertebral body; a lateral x-ray should be obtained to plan the appropriate placement of screws so that no screws violate the spinal canal.



5

Drill the first temporary fixation hole using the **2.5 mm Three-Fluted Drill Bit with Stop** [389.214] and the **2.5 mm Long DCP Drill Guide** [389.213] through the DCP hole.



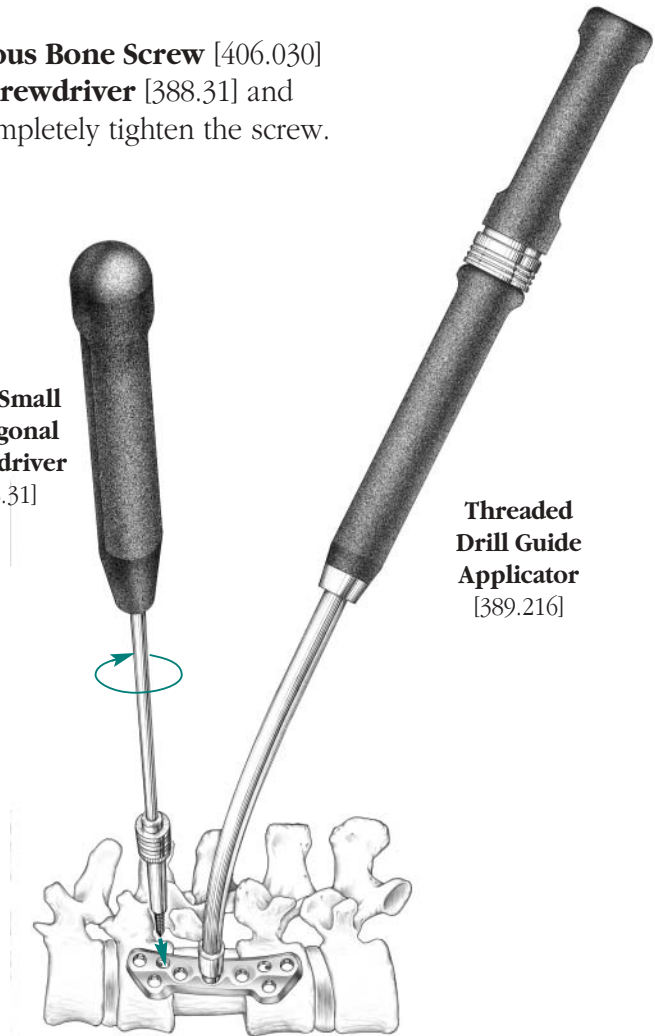
The DCP drill guide has an arrow on the drill barrel that must point toward the graft site to achieve compression. The 2.5 mm drill bit has an automatic stop at 30 mm, which corresponds to the length of the temporary screws.

6

Insert a **4.0 mm Titanium Cancellous Bone Screw** [406.030] with the **Long Small Hexagonal Screwdriver** [388.31] and **Holding Sleeve** [314.09]. Do not completely tighten the screw.

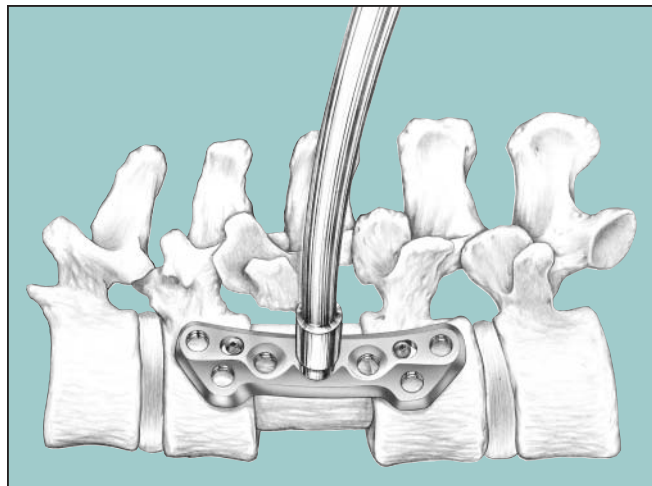
**Long Small Hexagonal Screwdriver**  
[388.31]

**Threaded Drill Guide Applicator**  
[389.216]



7

Place the second temporary screw in the same fashion. The screws are now sequentially tightened to place the graft under compression prior to final plate fixation.

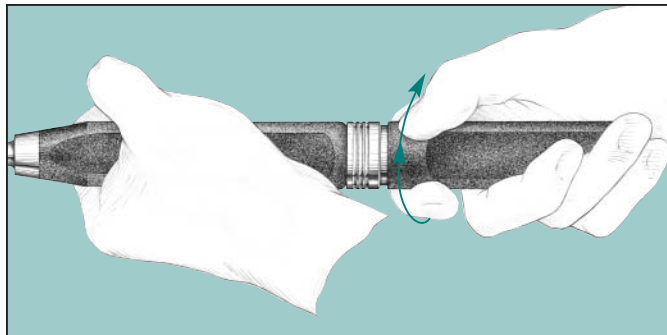
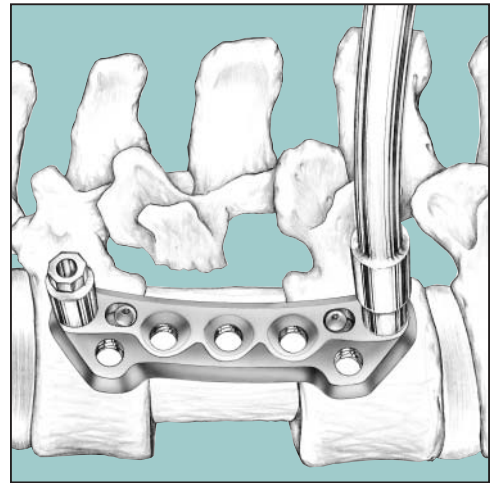




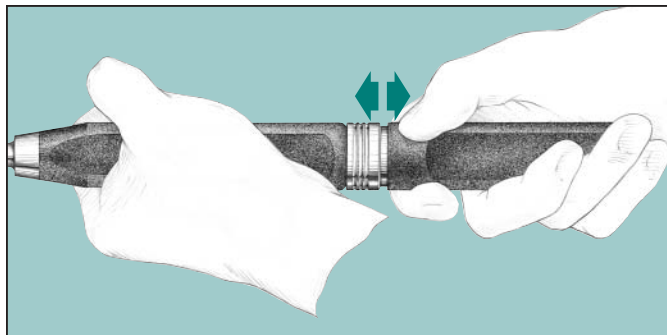
8

Using the **Threaded Drill Guide Applicator** [389.216], remove the **Threaded Drill Guide** [389.211] from the center hole (Step 3) and place the Threaded Drill Guide in one of the posterior holes.

Place the second Threaded Drill Guide in the other posterior hole, again using the Threaded Drill Guide Applicator. These drill guides ensure perpendicular placement of the drill bit relative to the plate.



*To insert the Threaded Drill Guide, turn the Threaded Drill Guide Applicator handle clockwise.*

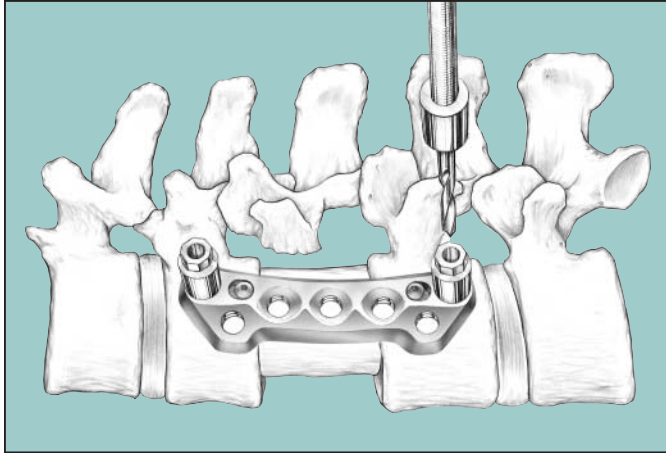


*To release the Threaded Drill Guide, pull the Threaded Drill Guide Applicator handle away from the shaft.*

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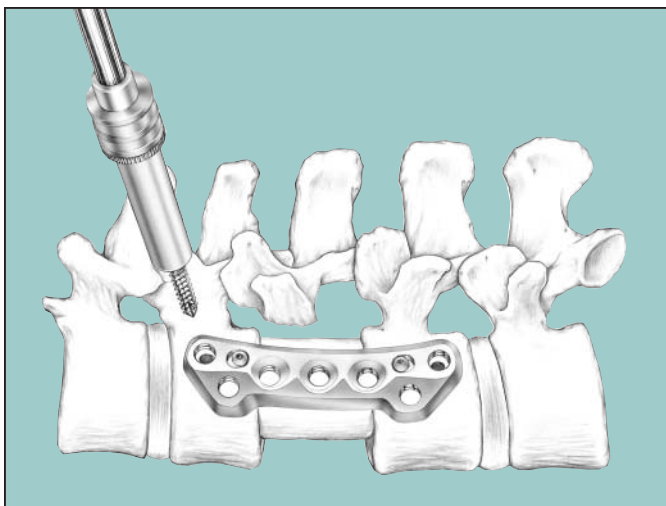
9

Drill the posterior holes through the preassembled Threaded Drill Guides using the **5.0 mm Flexible Drill Bit with Stop** [389.215]. Since purchase in the opposite cortex is not necessary, the drill bit has an automatic stop at 30 mm to prevent overdrilling.



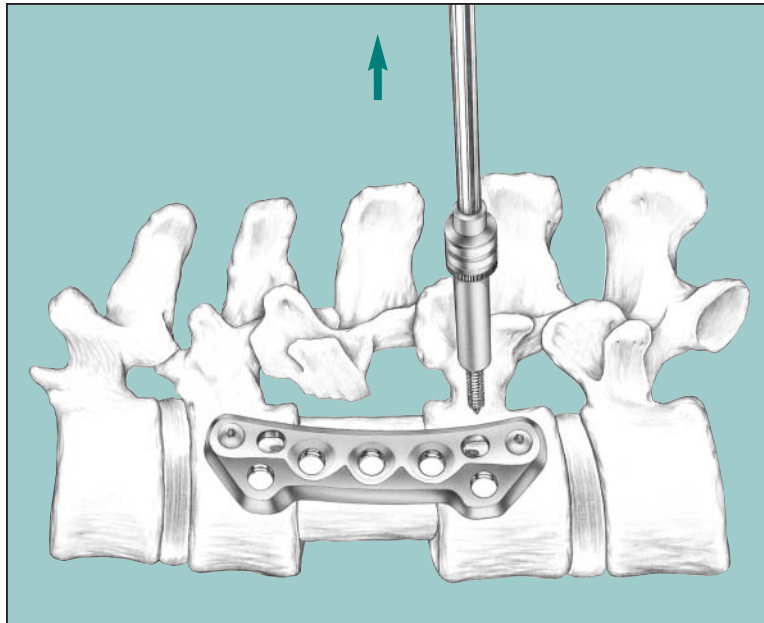
10

Remove the Threaded Drill Guides with the Threaded Drill Guide Applicator. Insert the appropriate length **7.5 mm Titanium Anterior Spinal Locking Screws** [489.0xx] using the **Long Large Hexagonal Screwdriver** [389.217] and **Holding Sleeve** [389.218]. The screws must seat completely into the plate to secure the locking mechanism of the screw. Special care should be taken to properly retract the surrounding soft tissue so that there is no movement of the screw from its perpendicular position as it is inserted into the plate.



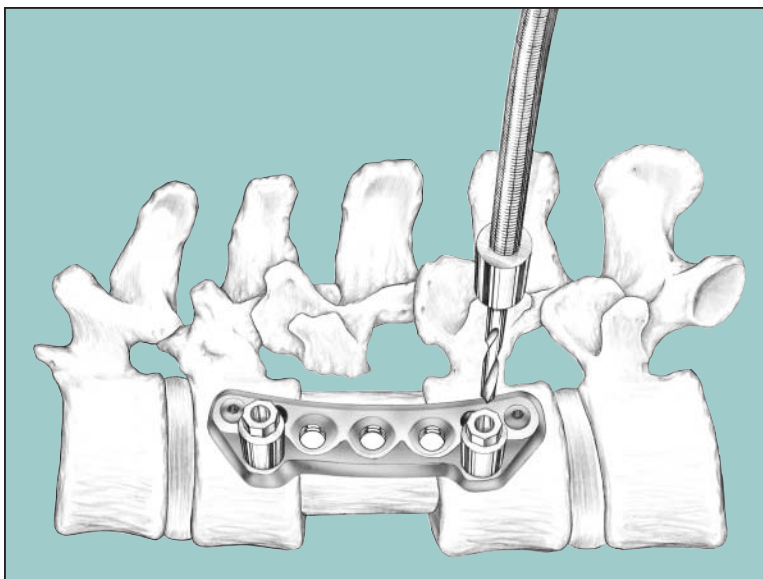
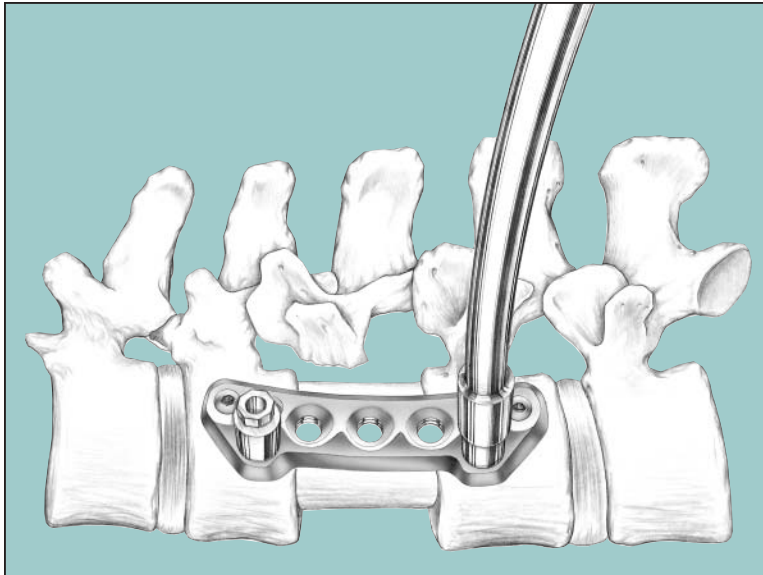
11

The 4.0 mm Titanium Cancellous Bone Screws which served as temporary fixation must now be removed. The compression of the graft site will be maintained by the permanent 7.5 mm locking screws. Failure to remove the temporary screws will inhibit the insertion of the anterior locking screws.



12

Insert the Threaded Drill Guides into the anterior holes using the Threaded Drill Guide Applicator. Drill the anterior holes through the preassembled Threaded Drill Guides using the 5.0 mm Flexible Drill Bit with Stop as before.

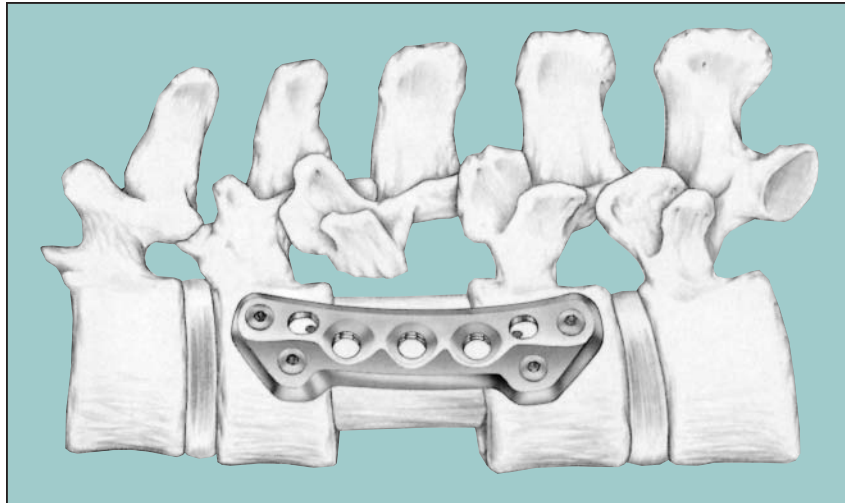


13

Remove the Threaded Drill Guides with the Threaded Drill Guide Applicator.

14

Insert the 7.5 mm locking screws with the Long Large Hexagonal Screwdriver and Holding Sleeve. Special care should be taken to properly retract the surrounding soft tissue so that there is no movement of the screw from its perpendicular position as it is inserted into the plate. Once again, the screws must seat completely into the plate to secure the locking mechanism of the screw.



# Titanium ATLP System Set

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## Titanium Anterior Thoracolumbar Locking Plate System Set [107.760]

304.880 Titanium Anterior Thoracolumbar Locking Plate Set  
Graphic Case

### Instruments

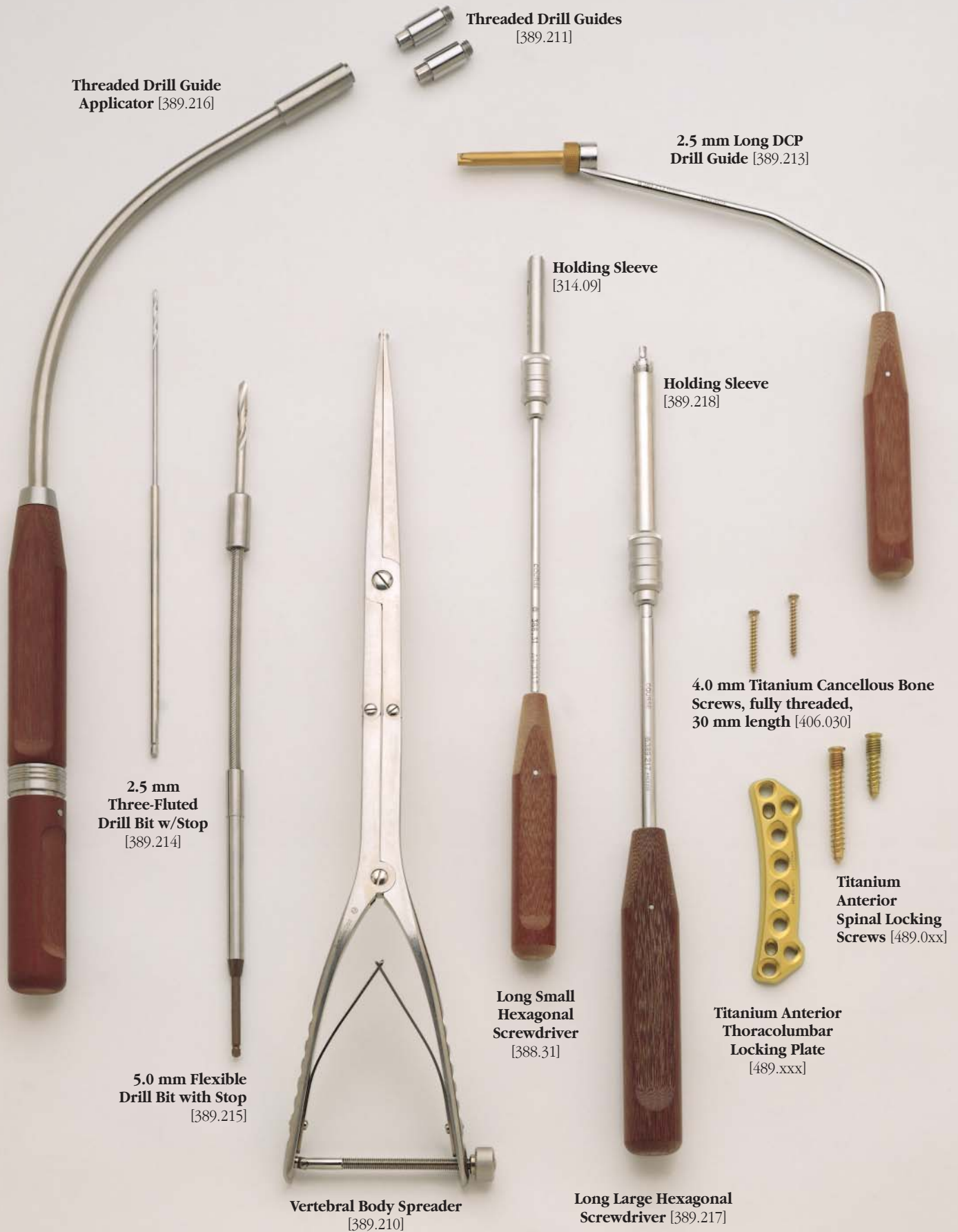
314.09 Holding Sleeve, for Long Small Hexagonal Screwdriver [388.31]  
388.31 Long Small Hexagonal Screwdriver  
389.208 Extended Vertebral Body Spreader\*  
389.209 Straight Threaded Drill Guide Applicator\*  
389.210 Vertebral Body Spreader  
389.211 Threaded Drill Guide, 2 ea.  
389.213 2.5 mm Long DCP Drill Guide  
389.214 2.5 mm Three-Fluted Drill Bit with Stop, 2 ea.  
389.215 5.0 mm Flexible Drill Bit with Stop, 2 ea.  
389.216 Threaded Drill Guide Applicator  
389.217 Long Large Hexagonal Screwdriver  
389.218 Holding Sleeve, for Long Large Hexagonal Screwdriver [389.217]

### Implants

406.030 4.0 mm Titanium Cancellous Bone Screw,  
fully threaded, 30 mm, 6 ea.  
489.030– 7.5 mm Titanium Anterior Spinal Locking Screws  
489.055 6 ea.: 30, 50 and 55 mm  
8 ea.: 35, 40 and 45 mm  
489.257– Titanium Anterior Thoracolumbar Locking Plates  
489.348 1 ea.: 57, 63, 67, 70, 76, 82, 87, 93, 99, 103, 108,  
113, 118, 123, 128, 138, and 148 mm

\* Not shown.

# Titanium Anterior Thoracolumbar Locking Plate System [107.760]



**Threaded Drill Guides**  
[389.211]

**Threaded Drill Guide  
Applicator** [389.216]

**2.5 mm Long DCP  
Drill Guide** [389.213]

**Holding Sleeve**  
[314.09]

**Holding Sleeve**  
[389.218]

**2.5 mm  
Three-Fluted  
Drill Bit w/Stop**  
[389.214]

**5.0 mm Flexible  
Drill Bit with Stop**  
[389.215]

**Vertebral Body Spreader**  
[389.210]

**Long Small  
Hexagonal  
Screwdriver**  
[388.31]

**Long Large Hexagonal  
Screwdriver** [389.217]

**4.0 mm Titanium Cancellous Bone  
Screws, fully threaded,  
30 mm length** [406.030]

**Titanium  
Anterior  
Spinal Locking  
Screws** [489.0xx]

**Titanium Anterior  
Thoracolumbar  
Locking Plate**  
[489.xxx]



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