





### Anterior Cervical Plate System

Surgical Technique









#### Product Features

- Simple, reliable system
- Plates are available in 1,2,3, and 4 levels
- 1.84mm thickness between levels, 2.04mm designed to reduce potential risk of dysphagia, 17mm wide
- Friction Locking tab prevents migration of screws, locking tabs and screws Below the surface of the plate
- Large graft windows for visual cage confirmation







### Screw Options

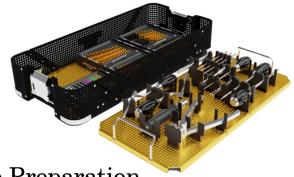
4.00 & 4.25 mm Fixed & Variable Self-Drilling and Self-Tapping pointed tips 14° conical rotation **20mm 18mm 16mm 14mm 12mm 10mm** 

Pointed drill tip - prevents slipping off bone Universal driver for screw & locking tabs - **T8/T10 tip** 











#### Step 1 : Plate Site Preparation

Expose the anterior cervical spine and perform a discectomy or corpectomy of the correct level. Place the graft so that it is flush or below the anterior margin of the vertebral body (Figure 1).

Anterior plating is applied only after adequate grafting.







Figure 1



Surgical Pearl: "Remove the anterior osteophytes to allow the plate to lie flush on the "true" anterior cortex of the vertebral body."

Implants are available in PEEK, Titanium or 3D Printed Titanium (Figure 2).









Figure 2





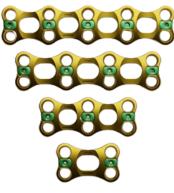


#### Step 2: Plate Selection and Placement

1, 2, 3 and 4 level plates are available (Figure 3).













Select the appropriate length of the anterior cervical plate (Figure 4).

Surgical Pearl: "The plate should be centrally positioned on the midline and should not overlie adjacent non-fused disc segments." The caudal and cephalad screw holes should be placed as close to the graft without compromising the vertebral endplate.







Figure 4





### Step 2 : Plate Selection and Placement - Temporary Plate Pins

Temporary plate pins are available prior to screw insertion (Figure 5).

Use the pin inserter to secure a pin located in the screw caddy. Select the appropriate hole and secure the pin over the plate, into the vertebral body (Figure 6). Remove the temporary pins after permanent screw insertion.

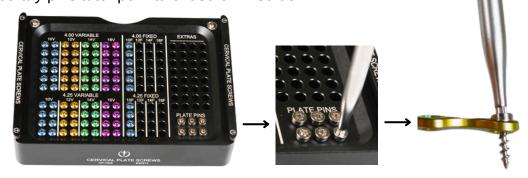


Figure 5

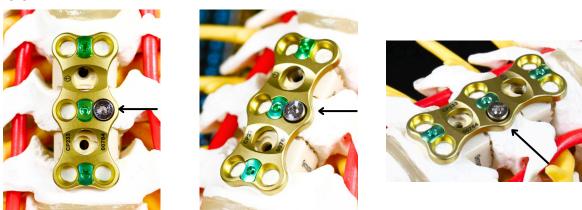
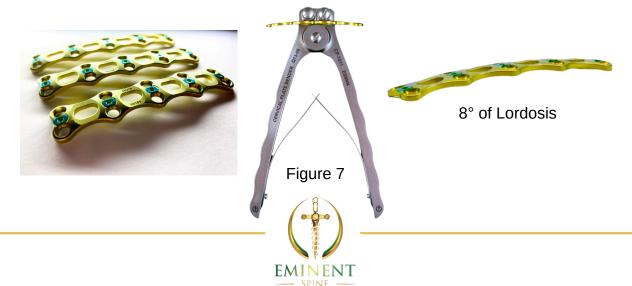


Figure 6

Bend the plate if needed to match the contour of the spine (Figure 7).





#### Step 3: Screw Hole Preparation

Options are available to make the screw entry hole (Figure 8).

10, 12, 14, 16mm Drills

12mm awl & spring loaded awl



Pointed drill tip - prevents slipping off bone.

The 12mm awl option is 1.70mm in diameter.

The 4 drill options are 1.75mm in diameter and correspond to the screw length.





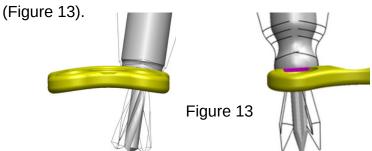
#### Step 3: Screw Hole Preparation

Firmly seat the tip of the drill guide into the cervical plate screw hole (Figure 11).

Apply light downward pressure on the drill guide and rotate the drill clockwise. Advance the drill into the bone until the STOP of the drill contacts the BACK of the selected drill guide (Figure 12). Remove the drill from the bone by turning the drill counterclockwise while pulling back on the drill.



Variable Guides allow the awl or drill to be inserted at the desired screw conical angle



If preferred, use a standard operating room burr to penetrate the anterior cortex of the vertebral body (Figure 14).



Figure 14

NOTE: The trajectory and depth of the drills should be determined by fluoroscopy to ensure appropriate sizing of the screw based on anatomy. Do NOT insert the drill into the spinal canal or a nerve root. The drill should be fully contained in the Bone .





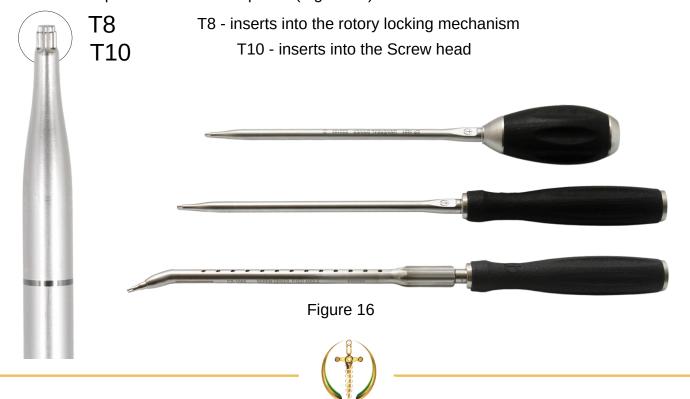
#### Step 4 : Screw Selection



Figure 15
Self-drilling and self-tapping with pointed tips
14° of conical rotation

#### Screw driver tip has 2 portions

Screw Driver - 2 screw tips in one driver. Better for surgeon and more efficient in the OR. Less steps. 3 screw driver options (Figure 16).



**EMINENT** 



#### Step 5 : Screw Insertion



Figure 16

Intraoperative radiographs or fluoroscopy should be used to check plate position before screw insertion. Tighten the screws so the plate is seated evenly and flush to the anterior cortex of the cervical spine. Since all screws are self-tapping, tapping is not required (Figure 17).



Figure 17

NOTE: The trajectory and depth of the screws should be determined by fluoroscopy to ensure appropriate sizing of the screw based on anatomy. Do NOT insert the screw into the spinal canal or a nerve root. The screws should be fully contained in the Bone.





#### Step 5: Locking Tab

Remove temporary pins if used.

Seat the T8 driver tip securely into the locking tab and rotate 90 degrees until it covers the screw heads to properly lock the construct (Figure 18). NOTE: Visually confirm the implant placement and the locking tab. The locking tab edges should cover the head of the cervical screw. Obtain AP & lateral fluoroscopy prior to closure.







Figure 18

Obtain AP and lateral radiographs for final plate and screw position.











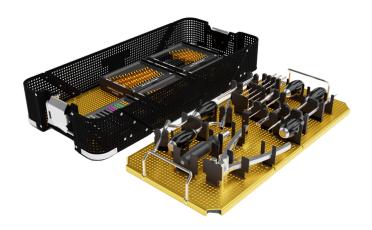
#### Step 6: Screw and Plate Removal

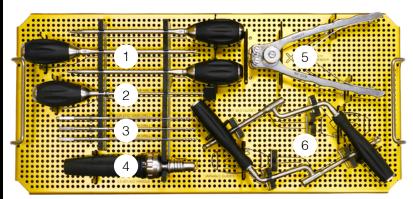
Attach the locking cap driver on the locking cap and rotate it counter-clockwise 90 degrees. Attach the cervical screwdriver into the cervical screw and remove the screw. After all cervical screws have been removed, then remove the cervical plate.



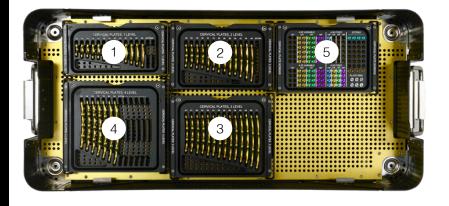


#### Cervical Plate Instrument Tray





- 1. Screw Drivers
- 2. Pointed Awl
- 3. Awl & Drills
- 4. AO Ratchet Driver
- 5. Plate Bender
- 6. Fixed & Variable Guides



- 1. Cervical plate, 1 Level Caddy
- 2. Cervical plate, 2 Level Caddy
- 3. Cervical plate, 3 Level Caddy
- 4. Cervical plate, 4 Level Caddy
- 5. Cervical plate Screw Caddy











| Part<br>Numbers | Cervical Plates 1 and 2 Levels |
|-----------------|--------------------------------|
| CP106           | Cervical Plate, 1 Level, 6mm   |
| CP108           | Cervical Plate, 1 Level, 8mm   |
| CP110           | Cervical Plate, 1 Level, 10mm  |
| CP112           | Cervical Plate, 1 Level, 12mm  |
| CP114           | Cervical Plate, 1 Level, 14mm  |
| CP116           | Cervical Plate, 1 Level, 16mm  |
| CP118           | Cervical Plate, 1 Level, 18mm  |
| CP120           | Cervical Plate, 1 Level, 20mm  |
| CP122           | Cervical Plate, 1 Level, 22mm  |
| CP124           | Cervical Plate, 1 Level, 24mm  |
| CP126           | Cervical Plate, 1 Level, 26mm  |
| CP128           | Cervical Plate, 1 Level, 28mm  |
| CP228           | Cervical Plate, 2 Level, 28mm  |
| CP230           | Cervical Plate, 2 Level, 30mm  |
| CP233           | Cervical Plate, 2 Level, 33mm  |
| CP236           | Cervical Plate, 2 Level, 36mm  |
| CP239           | Cervical Plate, 2 Level, 39mm  |
| CP242           | Cervical Plate, 2 Level, 42mm  |
| CP245           | Cervical Plate, 2 Level, 45mm  |
| CP248           | Cervical Plate, 2 Level, 48mm  |

| Part<br>Numbers | Cervical Plates 3 and 4 Levels |
|-----------------|--------------------------------|
| CP347           | Cervical Plate, 3 Level, 47mm  |
| CP350           | Cervical Plate, 3 Level, 50mm  |
| CP353           | Cervical Plate, 3 Level, 53mm  |
| CP356           | Cervical Plate, 3 Level, 56mm  |
| CP359           | Cervical Plate, 3 Level, 59mm  |
| CP362           | Cervical Plate, 3 Level, 62mm  |
| CP365           | Cervical Plate, 3 Level, 65mm  |
| CP368           | Cervical Plate, 3 Level, 68mm  |
| CP371           | Cervical Plate, 3 Level, 71mm  |
| CP460           | Cervical Plate, 4 Level, 60mm  |
| CP464           | Cervical Plate, 4 Level, 64mm  |
| CP468           | Cervical Plate, 4 Level, 68mm  |
| CP472           | Cervical Plate, 4 Level, 72mm  |
| CP476           | Cervical Plate, 4 Level, 76mm  |
| CP480           | Cervical Plate, 4 Level, 80mm  |
| CP484           | Cervical Plate, 4 Level, 84mm  |

#### DRILLS AND PINS



| Part<br>Numbers | Cervical Plate Drill and Pins    |
|-----------------|----------------------------------|
| CP-2010         | Cervical Drill, 10mm             |
| CP-2012         | Cervical Drill, 12mm             |
| CP-2014         | Cervical Drill, 14mm             |
| CP-2016         | Cervical Drill, 16mm             |
| CP-1013         | Cervical Fixation Pins, Threaded |







#### **SCREWS**

| Part<br>Number | Cervical Plate Fixed Screws<br>4.00mm & 4.25mm |
|----------------|--|
| CSF4010        | Cervical Screw, Fixed, 4.00mm OD x 10mm Long   |
| CSF4012        | Cervical Screw, Fixed, 4.00mm OD x 12mm Long   |
| CSF4014        | Cervical Screw, Fixed, 4.00mm OD x 14mm Long   |
| CSF4016        | Cervical Screw, Fixed, 4.00mm OD x 16mm Long   |
| CSF4018        | Cervical Screw, Fixed, 4.00mm OD x 18mm Long   |
| CSF4020        | Cervical Screw, Fixed, 4.00mm OD x 20mm Long   |
| CSF4210        | Cervical Screw, Fixed, 4.25mm OD x 10mm Long   |
| CSF4212        | Cervical Screw, Fixed, 4.25mm OD x 12mm Long   |
| CSF4214        | Cervical Screw, Fixed, 4.25mm OD x 14mm Long   |
| CSF4216        | Cervical Screw, Fixed, 4.25mm OD x 16mm Long   |
| CSF4218        | Cervical Screw, Fixed, 4.25mm OD x 18mm Long   |
| CSF4220        | Cervical Screw, Fixed, 4.25mm OD x 20mm Long   |

| Part<br>Number | Cervical Plate Variable Screws<br>4.00mm & 4.25mm |
|----------------|---|
| CS4010         | Cervical Screw, Variable, 4.00mm OD x 10mm Long   |
| CS4012         | Cervical Screw, Variable, 4.00mm OD x 12mm Long   |
| CS4014         | Cervical Screw, Variable, 4.00mm OD x 14mm Long   |
| CS4016         | Cervical Screw, Variable, 4.00mm OD x 16mm Long   |
| CS4018         | Cervical Screw, Variable, 4.00mm OD x 18mm Long   |
| CS4020         | Cervical Screw, Variable, 4.00mm OD x 20mm Long   |
| CS4210         | Cervical Screw, Variable, 4.25mm OD x 10mm Long   |
| CS4212         | Cervical Screw, Variable, 4.25mm OD x 12mm Long   |
| CS4214         | Cervical Screw, Variable, 4.25mm OD x 14mm Long   |
| CS4216         | Cervical Screw, Variable, 4.25mm OD x 16mm Long   |
| CS4218         | Cervical Screw, Variable, 4.25mm OD x 18mm Long   |
| CS4220         | Cervical Screw, Variable, 4.25mm OD x 20mm Long   |



| Part<br>Number | Cervical Plate Hyper Variable Screws<br>4.00mm        |
|----------------|---|
| CSH4010        | Cervical Screw, Hyper Variable, 4.00mm OD x 10mm Long |
| CSH4012        | Cervical Screw, Hyper Variable, 4.00mm OD x 12mm Long |
| CSH4014        | Cervical Screw, Hyper Variable, 4.00mm OD x 14mm Long |
| CSH4016        | Cervical Screw, Hyper Variable, 4.00mm OD x 16mm Long |
| CSH4018        | Cervical Screw, Hyper Variable, 4.00mm OD x 18mm Long |
| CSH4020        | Cervical Screw, Hyper Variable, 4.00mm OD x 20mm Long |

| Part<br>Number | Cervical Plate Hyper Variable Screws<br>4.25mm        |
|----------------|---|
| CSH4210        | Cervical Screw, Hyper Variable, 4.25mm OD x 10mm Long |
| CSH4212        | Cervical Screw, Hyper Variable, 4.25mm OD x 12mm Long |
| CSH4214        | Cervical Screw, Hyper Variable, 4.25mm OD x 14mm Long |
| CSH4216        | Cervical Screw, Hyper Variable, 4.25mm OD x 16mm Long |
| CSH4218        | Cervical Screw, Hyper Variable, 4.25mm OD x 18mm Long |
| CSH4220        | Cervical Screw, Hyper Variable, 4.25mm OD x 20mm Long |





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