



AMBASSADOR[®]

Cervical Plate System

Surgical Technique

AMBASSADOR®

Introduction

The Choice Spine Ambassador® Anterior Cervical Plate System is intended for anterior screw fixation to the cervical spine. The system consists of a variety of bone plates and screws. The components are made from titanium alloy such as described by ASTM F136. Plates and screws are provided non-sterile and must be steam sterilized by the user prior to use.

System Features

- ▶ Hybrid Anterior Cervical Plate allows for variable and fixed constructs
- ▶ Thin 1.9mm plate profile
- ▶ Plate curvature allows for a fit with the natural lordosis of the spine
- ▶ Large window for optimal visualization
- ▶ Optimized screw purchase
- ▶ Narrow plate profile—16mm at widest point
- ▶ Cam designed to control settling in sagittal plane and reduce motion in all other planes



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OPERATIVE TECHNIQUE OVERVIEW



Use Plate Holder to Place Plate



Place Temporary Plate Securing Pins



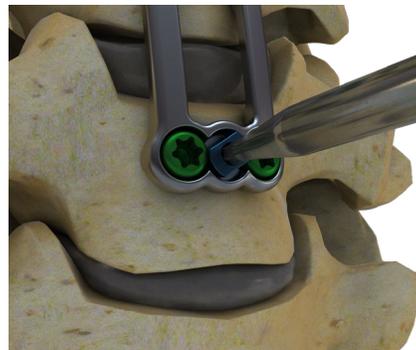
Drill



Attach a Screw to the Retaining Screwdriver



Insert the Screws



Cam Engagement

1 Plate Placement

The Ambassador Anterior Cervical Plates are available in lengths ranging from 10mm to 105mm, for one level through five level procedures. Determine the appropriate plate length based on the position and trajectory of each screw relative to its location to the endplates using the Caliper. After selecting a plate, place it onto the vertebral bodies by holding the plate with the Plate Holder (Figure 1).

If plate contouring is required, place the plate in the Plate Bender and squeeze the handles together to create more or less lordosis as required (Figure 2). The Plate Bender has two positions to create either a lordotic or kyphotic curvature (Figure 3).

Note: Repeated bending of the plate may reduce its fatigue life. The plate bender should be placed in the graft window area of the plate and not directly over the cam to avoid damage to the cam. Temporary plate fixation may be achieved with the Temporary Plate Securing Pins. Attach the Temporary Plate Securing Pins to the Retaining Screwdriver and insert into the screw holes in the plate temporarily securing the plate to the vertebral body (Figure 4).



Figure 1
Use Plate Holder to Place Plate



Figure 2
Plate Bender

Figure 4
Place Temporary Plate Securing Pins



Figure 3
Contouring the Plate



Lordotic



Kyphotic

Figure 5

Selecting a Dual DTS Guide



Double Barrel Variable DTS Guide



Double Barrel Fixed DTS Guide - Caudal/Cephalad



Double Barrel Fixed DTS Guide - Center



Single Barrel Plate Holder/DTS Guide

2 Screw Insertion

The Ambassador Anterior Cervical Plate system includes DTS guides which hold the plate and provide a guide for the Drill, Tap, and Screw insertion. There is also a Single Plate Holder/DTS Guide available to provide additional visibility.



3 Screw Insertion Using Dual DTS Guide

First, determine whether a Fixed or Variable Dual DTS Guide is preferred. If a Fixed DTS Guide is preferred, use the appropriate Cephalad/Caudal or Interior Guide depending on the screw location. The differences in these guides are depicted by the DTS Guide endcap colors (Figure 5).

Attach the appropriate DTS Guide to the plate by placing the guide over the plate and engaging the tabs on the side of the guide to secure the plate. Insert the Awl into the desired bone-screw hole and engage the Awl tip to penetrate into the vertebral body. The Awl will penetrate 5mm beyond the plate thickness.

Self Drilling screws are provided, but if pre-drilling is preferred, attach the AO Handle to the appropriate depth Drill Bit, and insert through the DTS Guide to drill to the desired depth (Figure 6).

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Screw Insertion Using Single Plate Holder/DTS Guide

After the screw hole is drilled, use the Retaining Screwdriver (Figure 7) to insert the screw through the DTS Guide and into the plate (Figure 8). Repeat the steps above for all remaining screws.

The Single Plate Holder/DTS Guide is used to secure the plate while drilling and inserting screws through the single barrel. To attach this guide to the plate, engage the tabs on the side of the guide to secure the plate. Insert the Awl into the desired bone-screw hole and engage the Awl tip to penetrate into the vertebral body.

Note: The Single Plate Holder/DTS Guide is only for use in the Cephalad or Caudal positions.

Self Drilling screws are provided, but if pre-drilling is preferred, attach the AO Handle to the appropriate depth Drill Bit, and insert through the DTS Guide to drill to the desired depth (Figure 9).

After the screw hole is drilled, use the Retaining Screwdriver to insert the screw through the DTS Guide and into the plate (Figure 10). Repeat the steps above for all remaining screws.

Figure 8



Figure 7





Figure 9
Drill



Figure 10
Insert the Screws

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Screw Insertion Using Single DTS Guide

The Single DTS Guide is placed over the screw hole to provide a guide while drilling and inserting screws. Insert the Awl into the desired bone-screw hole and engage the Awl tip to penetrate into the vertebral body. Self Drilling screws are provided, but if pre-drilling is preferred, attach the AO Handle to the appropriate depth Drill Bit, and insert through the DTS Guide to drill to the desired depth (Figure 11).

After the screw hole is drilled, use the Retaining Screwdriver to insert the screw through the DTS Guide and into the plate (Figure 12). Repeat the steps above for all remaining screws.



Figure 11
Drill

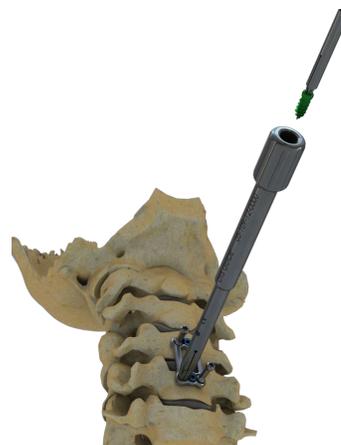


Figure 12
Insert the Screws

Figure 13
Torque Handle Connection



6 Cam Engagement

Once all of the screws have been inserted, the cams should be rotated clockwise to secure the screws in place. Insert the Cam Driver attached to the Torque Limiting Handle (Figure 13) into the gold cam on the plate and rotate the cam clockwise until the Torque Limiting Handle breaks over (Figure 14).

To ensure that the cams are properly engaged, they should fall into the cam engagement range (Figure 15).

Figure 15
Confirm Cam Position

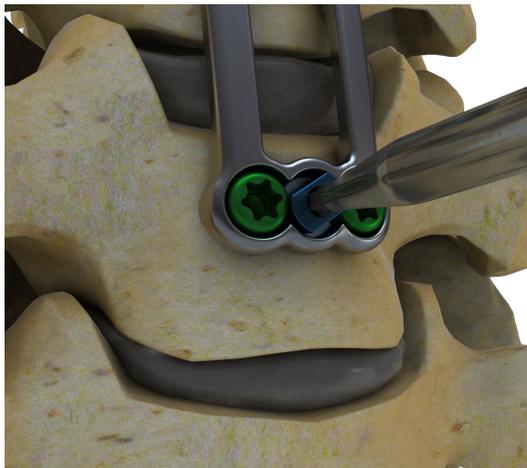
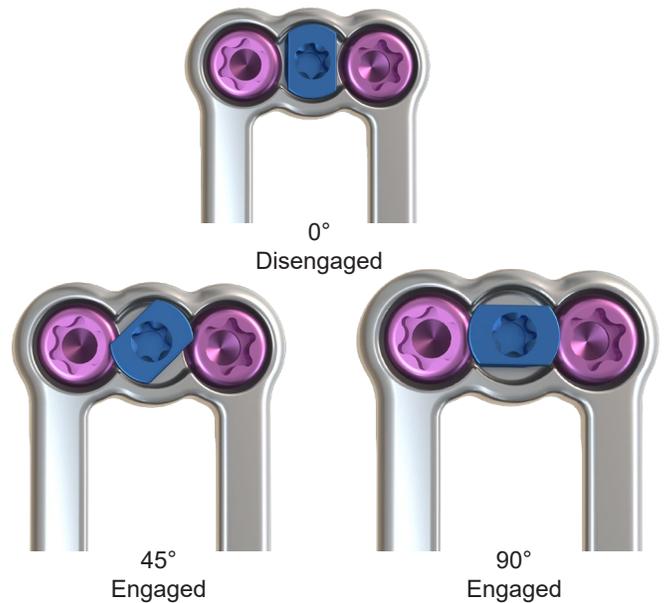


Figure 14
Cam Engagement



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Implant Removal

To remove the cervical plate, expose the surgical site and clear away all soft tissue and/or bone from the edges of the plate so the screw heads are clearly visualized. Use the Retaining Screwdriver attached to the AO Handle to remove the screws from the plate (Figure 16). The plate can then be lifted off of the bone using the Plate Holder.

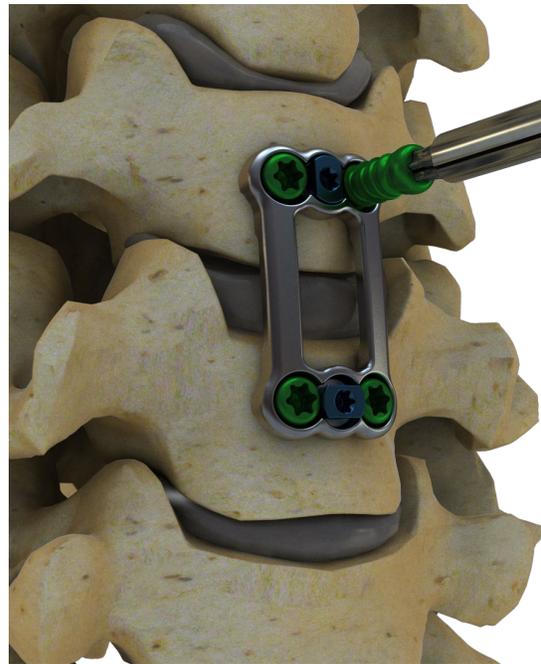
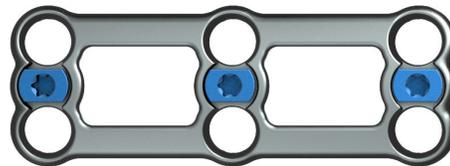
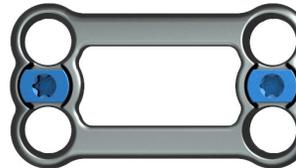


Figure 16
Plate Removal

IMPLANT LISTING

Catalog Number	Part Description
05-100-01-0010	One-level Plate - 10mm
05-100-01-0012	One-level Plate - 12mm
05-100-01-0014	One-level Plate - 14mm
05-100-01-0016	One-level Plate - 16mm
05-100-01-0018	One-level Plate - 18mm
05-100-01-0020	One-level Plate - 20mm
05-100-01-0022	One-level Plate - 22mm
05-100-01-0024	One-level Plate - 24mm
05-100-01-0026	One-level Plate - 26mm
05-100-01-0028	One-level Plate - 28mm
05-100-01-0030	One-level Plate - 30mm
05-100-02-0028	Two-level plate - 28mm
05-100-02-0030	Two-level plate - 30mm
05-100-02-0032	Two-level plate - 32mm
05-100-02-0034	Two-level plate - 34mm
05-100-02-0036	Two-level plate - 36mm
05-100-02-0038	Two-level plate - 38mm
05-100-02-0040	Two-level plate - 40mm
05-100-02-0042	Two-level plate - 42mm
05-100-02-0044	Two-level plate - 44mm
05-100-03-0042	Three-level plate - 42mm
05-100-03-0045	Three-level plate - 45mm
05-100-03-0048	Three-level plate - 48mm
05-100-03-0051	Three-level plate - 51mm
05-100-03-0054	Three-level plate - 54mm
05-100-03-0057	Three-level plate - 57mm
05-100-03-0060	Three-level plate - 60mm
05-100-03-0063	Three-level plate - 63mm
05-100-03-0066	Three-level plate - 66mm
05-100-04-0056	Four-level plate - 56mm
05-100-04-0060	Four-level plate - 60mm
05-100-04-0064	Four-level plate - 64mm
05-100-04-0068	Four-level plate - 68mm
05-100-04-0072	Four-level plate - 72mm
05-100-04-0076	Four-level plate - 76mm
05-100-04-0080	Four-level plate - 80mm
05-100-04-0084	Four-level plate - 84mm
05-100-04-0088	Four-level plate - 88mm
05-100-04-0075	Five-level plate - 75mm
05-100-04-0080	Five-level plate - 80mm
05-100-04-0085	Five-level plate - 85mm
05-100-04-0090	Five-level plate - 90mm
05-100-04-0095	Five-level plate - 95mm
05-100-04-0100	Five-level plate - 100mm
05-100-04-0105	Five-level plate - 105mm



IMPLANT LISTING

Catalog Number	Part Description
05-100-07-4010	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 10mm
05-100-07-4011	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 11mm
05-100-07-4012	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 12mm
05-100-07-4013	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 13mm
05-100-07-4014	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 14mm
05-100-07-4015	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 15mm
05-100-07-4016	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 16mm
05-100-07-4017	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 17mm
05-100-07-4018	Variable Self-Drilling/Self-Tapping Screw, 4.0mm x 18mm
05-100-07-4510	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 10mm
05-100-07-4511	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 11mm
05-100-07-4512	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 12mm
05-100-07-4513	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 13mm
05-100-07-4514	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 14mm
05-100-07-4515	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 15mm
05-100-07-4516	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 16mm
05-100-07-4517	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 17mm
05-100-07-4518	Variable Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 18mm
05-100-08-4010	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 10mm
05-100-08-4011	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 11mm
05-100-08-4012	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 12mm
05-100-08-4013	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 13mm
05-100-08-4014	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 14mm
05-100-08-4015	fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 15mm
05-100-08-4016	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 16mm
05-100-08-4017	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 17mm
05-100-08-4018	Fixed-Self Drilling/Self-Tapping Screw, 4.0mm x 18mm
05-100-08-4510	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 10mm
05-100-08-4511	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 11mm
05-100-08-4512	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 12mm
05-100-08-4513	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 13mm
05-100-08-4514	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 14mm
05-100-08-4515	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 15mm
05-100-08-4516	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 16mm
05-100-08-4517	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 17mm
05-100-08-4518	Fixed Self-Drilling/Self-Tapping Rescue Screw, 4.5mm x 18mm



IMPLANT LISTING

Catalog Number	Part Description
05-100-09-4010	Variable Self-Tapping Screw, 4.0mm x 10mm
05-100-09-4011	Variable Self-Tapping Screw, 4.0mm x 11mm
05-100-09-4012	Variable Self-Tapping Screw, 4.0mm x 12mm
05-100-09-4013	Variable Self-Tapping Screw, 4.0mm x 13mm
05-100-09-4014	Variable Self-Tapping Screw, 4.0mm x 14mm
05-100-09-4015	Variable Self-Tapping Screw, 4.0mm x 15mm
05-100-09-4016	Variable Self-Tapping Screw, 4.0mm x 16mm
05-100-09-4017	Variable Self-Tapping Screw, 4.0mm x 17mm
05-100-09-4018	Variable Self-Tapping Screw, 4.0mm x 18mm
05-100-09-4510	Variable Self-Tapping Rescue Screw, 4.5mm x 10mm
05-100-09-4511	Variable Self-Tapping Rescue Screw, 4.5mm x 11mm
05-100-09-4512	Variable Self-Tapping Rescue Screw, 4.5mm x 12mm
05-100-09-4513	Variable Self-Tapping Rescue Screw, 4.5mm x 13mm
05-100-09-4514	Variable Self-Tapping Rescue Screw, 4.5mm x 14mm
05-100-09-4515	Variable Self-Tapping Rescue Screw, 4.5mm x 15mm
05-100-09-4516	Variable Self-Tapping Rescue Screw, 4.5mm x 16mm
05-100-09-4517	Variable Self-Tapping Rescue Screw, 4.5mm x 17mm
05-100-09-4518	Variable Self-Tapping Rescue Screw, 4.5mm x 18mm
05-100-10-4010	Fixed Self-Tapping Screw, 4.0mm x 10mm
05-100-10-4011	Fixed Self-Tapping Screw, 4.0mm x 11mm
05-100-10-4012	Fixed Self-Tapping Screw, 4.0mm x 12mm
05-100-10-4013	Fixed Self-Tapping Screw, 4.0mm x 13mm
05-100-10-4014	Fixed Self-Tapping Screw, 4.0mm x 14mm
05-100-10-4015	Fixed Self-Tapping Screw, 4.0mm x 15mm
05-100-10-4016	Fixed Self-Tapping Screw, 4.0mm x 16mm
05-100-10-4017	Fixed Self-Tapping Screw, 4.0mm x 17mm
05-100-10-4018	Fixed Self-Tapping Screw, 4.0mm x 18mm
05-100-10-4510	Fixed Self-Tapping Rescue Screw, 4.5mm x 10mm
05-100-10-4511	Fixed Self-Tapping Rescue Screw, 4.5mm x 11mm
05-100-10-4512	Fixed Self-Tapping Rescue Screw, 4.5mm x 12mm
05-100-10-4513	Fixed Self-Tapping Rescue Screw, 4.5mm x 13mm
05-100-10-4514	Fixed Self-Tapping Rescue Screw, 4.5mm x 14mm
05-100-10-4515	Fixed Self-Tapping Rescue Screw, 4.5mm x 15mm
05-100-10-4516	Fixed Self-Tapping Rescue Screw, 4.5mm x 16mm
05-100-10-4517	Fixed Self-Tapping Rescue Screw, 4.5mm x 17mm
05-100-10-4518	Fixed Self-Tapping Rescue Screw, 4.5mm x 18mm



INSTRUMENT LISTING

Catalog Number

Part Description

05-109-07-0000

Caliper (up to 100mm)



05-109-14-0000

Single Barrel Drill Guide



05-109-15-0000

Double Barrel Drill Guide



05-109-13-0000

Single Barrel Plate Holder/DTS Guide



05-109-12-0000

DTS Guide - Single



05-109-25-0000

Double Barrel Variable DTS Guide



05-109-26-0000

Double Barrel Fixed DTS Guide - Center



05-109-27-0000 Double Barrel Fixed DTS Guide - Caudal/Cephalad



05-109-08-0000 Plate Holder (Outside)



05-109-18-0023 Temporary Plate Securing Pins



05-109-10-0000 Awl



05-109-02-0000 Self-Retaining Screw Driver T15



05-109-01-0001 Self-Retaining Screw Driver T15, A/O



05-069-11-0000 Small A/O Handle



05-109-06-0000 Cam Driver T8



05-109-09-0000 Plate Bender



05-109-06-0001 Cam Torque Limiting Handle 14 in-lbs



05-109-22-2410 2.4 x 10mm Drill Bit

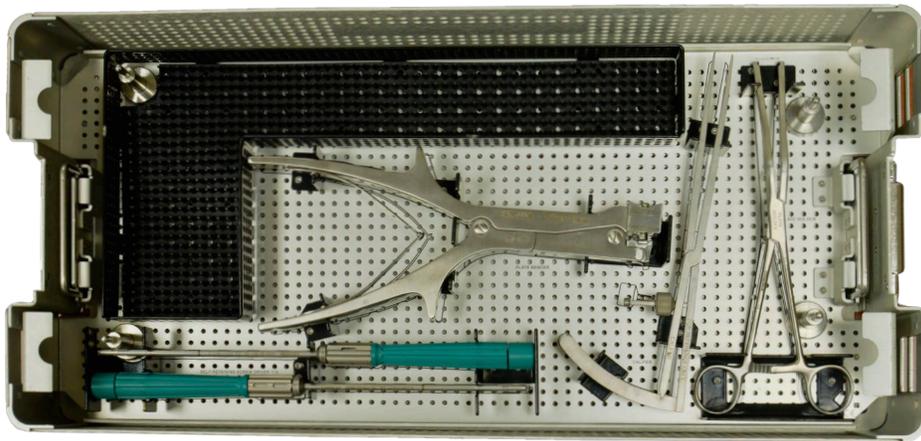
05-109-22-2412 2.4 x 12mm Drill Bit

05-109-22-2414 2.4 x 14mm Drill Bit

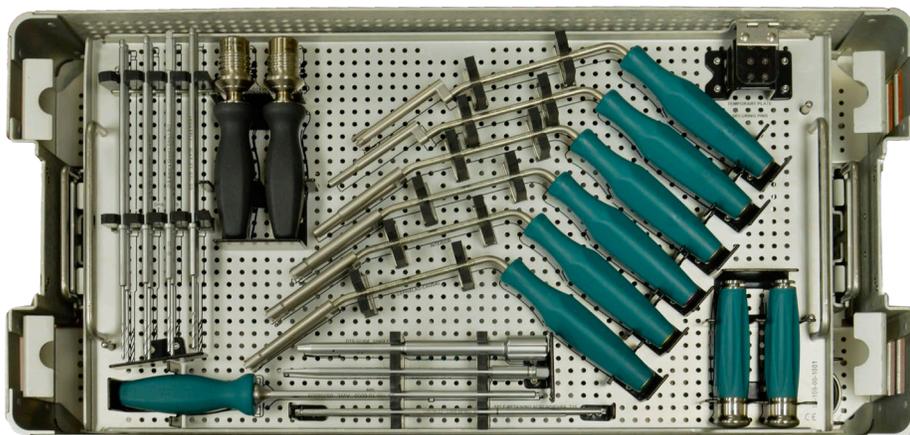
05-109-22-2416 2.4 x 16mm Drill Bit



Instrument Tray

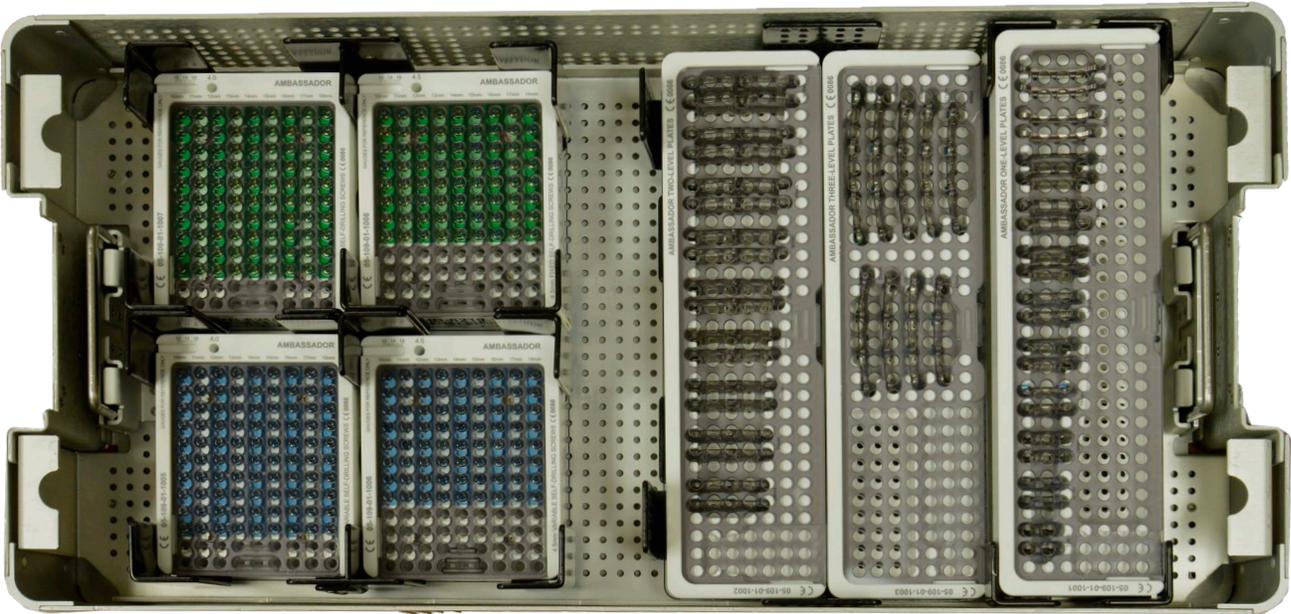


Bottom



Top

Implant Tray





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