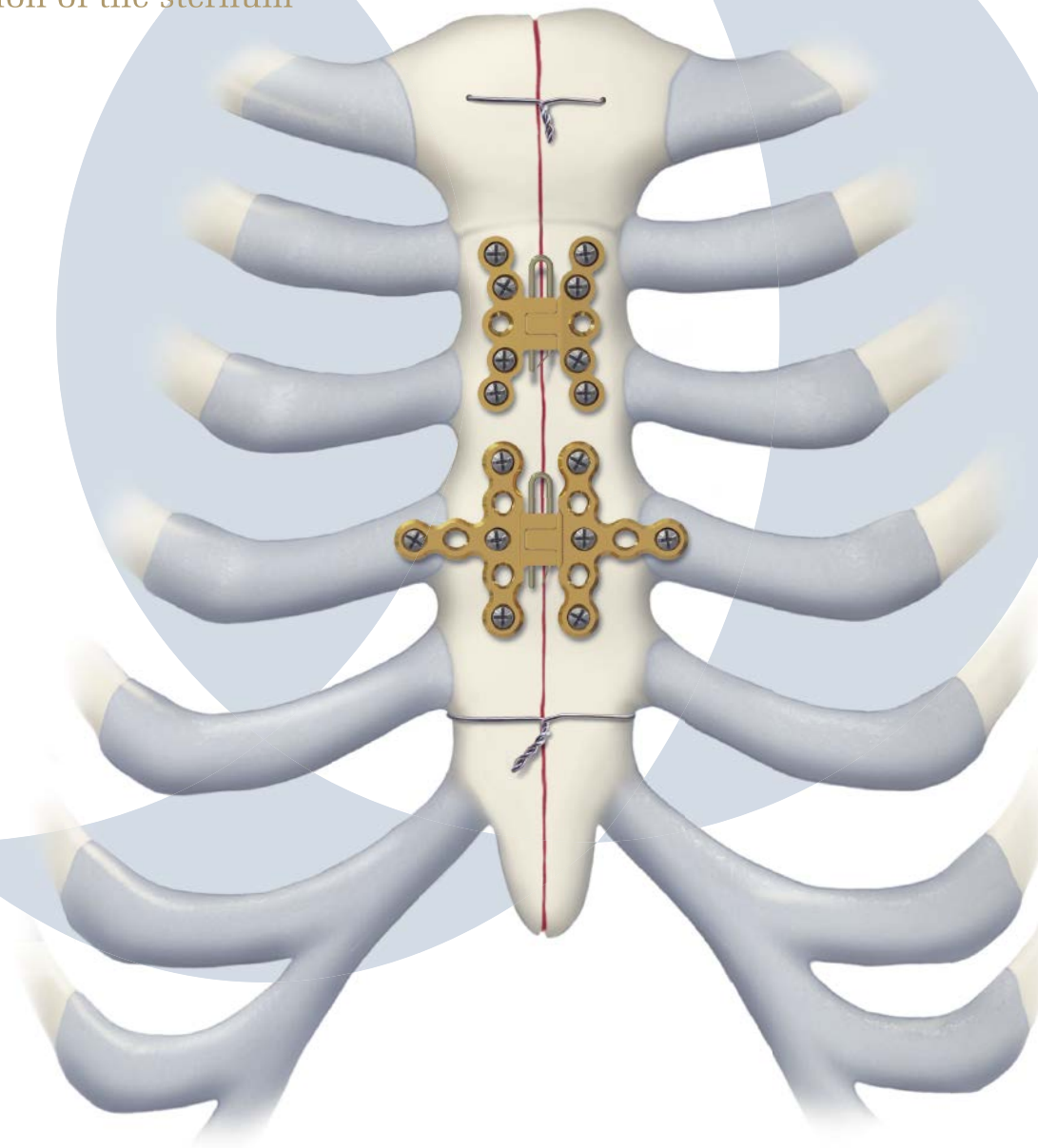


# TITANIUM STERNAL FIXATION SYSTEM

For stable internal fixation of the sternum



# TITANIUM STERNAL FIXATION SYSTEM.

For stable internal fixation of the sternum.

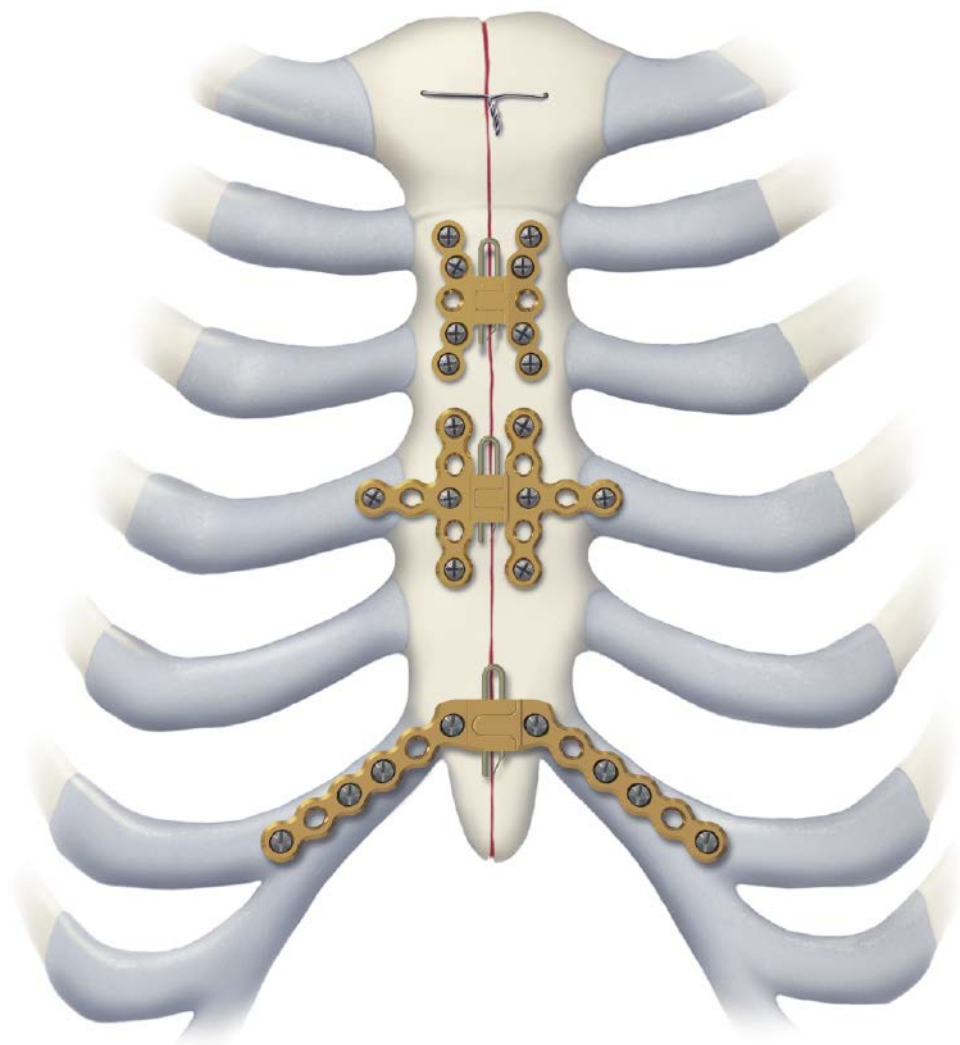
- Stable fixation
- For sternal body or rib-to-rib fixation
- Release pin for emergent reentry

The Synthes Titanium Sternal Fixation System is indicated for primary or secondary closure/repair of the sternum following a sternotomy or fracture of the sternum, to stabilize the sternum and promote fusion.

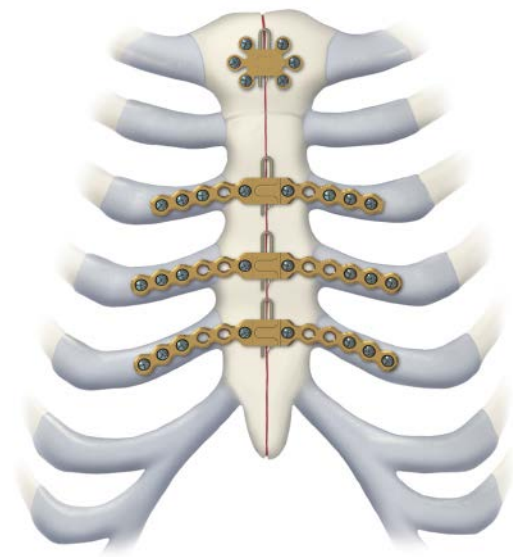
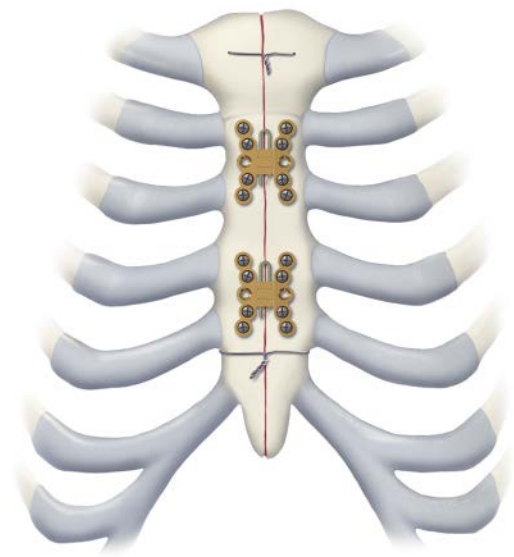
## **Broad variety of sternal plates**

Different titanium plates according to the anatomical structures and patient's need are available:

- Straight locking plates for a stable sternal rib-to-rib fixation
- Sternal body plates for minimal dissection
- Star-shaped and H-shaped locking plates for fixation of the manubrium
- Titanium sternal locking straight plate without pin for transverse fractures†

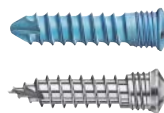


† Contraindicated for use in acute cardiac patients.



**Self-tapping and self-drilling locking screws**

Both self-tapping and self-drilling locking screws are available to accommodate surgeon preference.



**Secure and stable locking**

The plate functions like an external fixator, applied internally.

The screwhead of the sternal locking screws locks securely into the threaded plate hole to provide stable fixation (Figure 1).

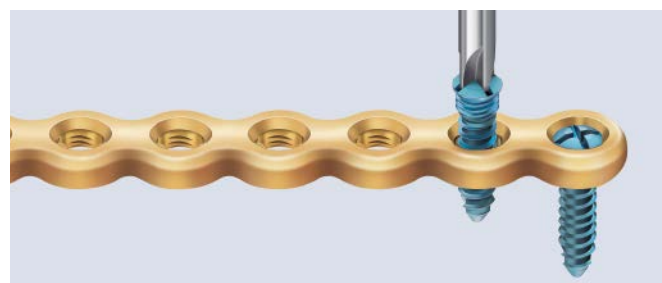


Figure 1

**Emergency release pin on all plates\***

All plates consist of two parts joined by a U-shaped release pin in the cross section. The release pin allows a quick and easy sternal reentry in cardiac emergency cases (Figure 2).

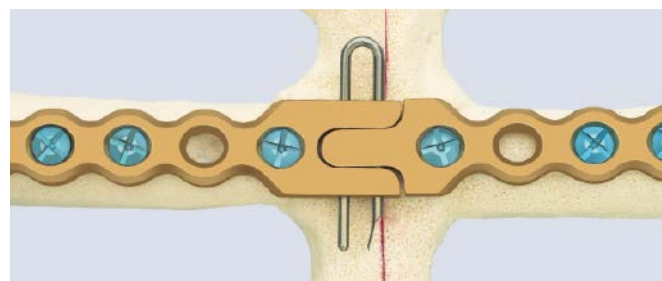
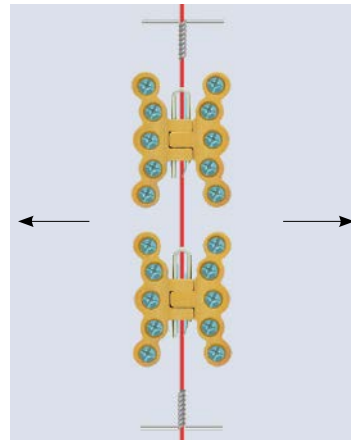


Figure 2

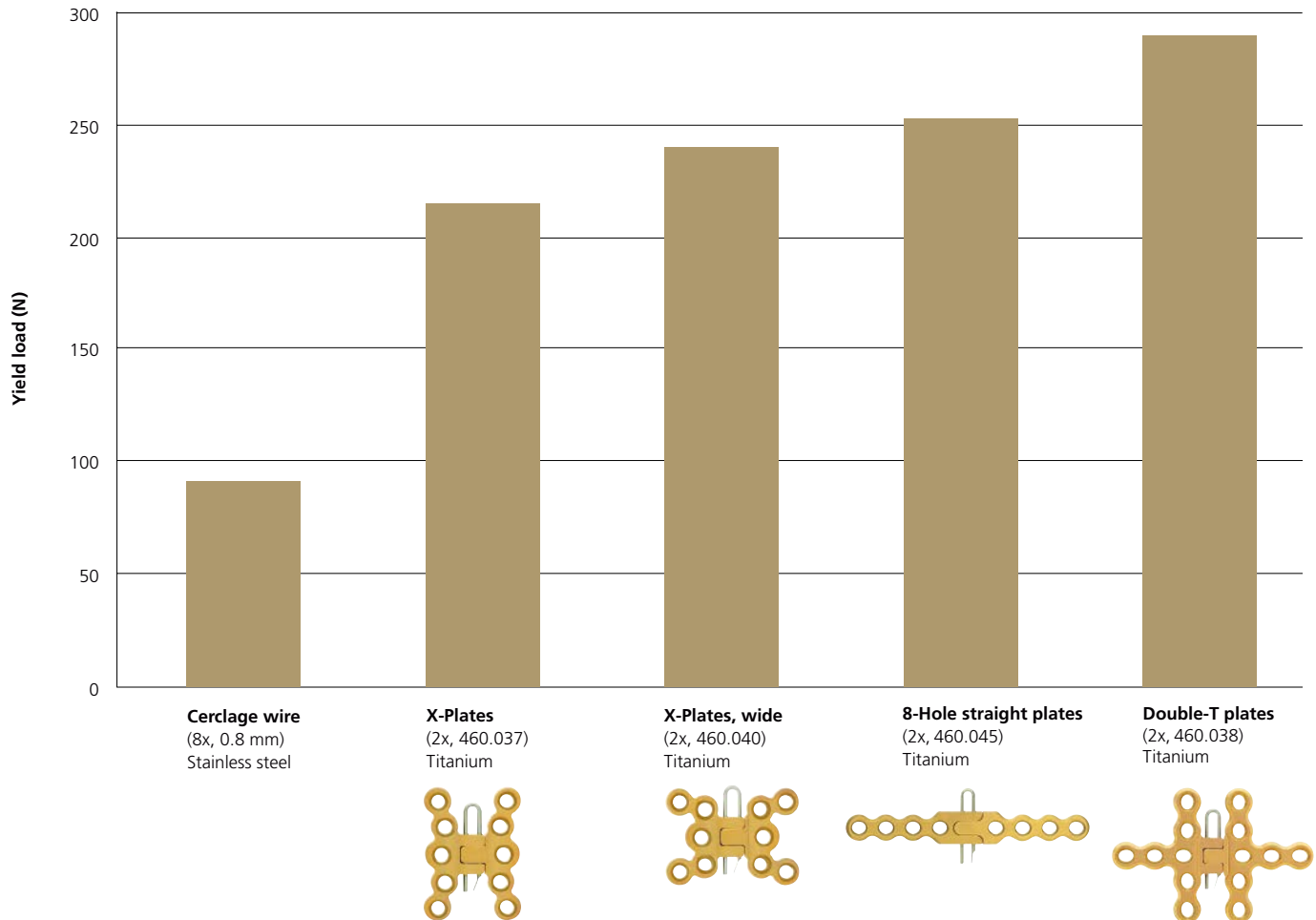
\* Except the Titanium Sternal Locking Straight Plate, 13 holes, without pin (460.046), which is contraindicated for use in acute cardiac patients.

**Construct strength comparison**

Constructs loaded in tension in lateral direction. All tests were performed on 10 mm thick composite polyurethane foam test blocks composed of an inner (cancellous) core of 5 lb/ft<sup>3</sup> polyurethane foam with a 1.25 mm thick (cortical) shell of 10 lb/ft<sup>3</sup> polyurethane foam laminated to the exterior.\*



Sample test construct (X-Plate setup shown)

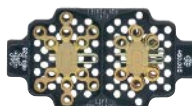
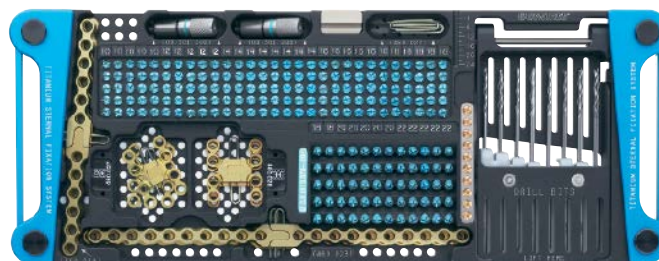
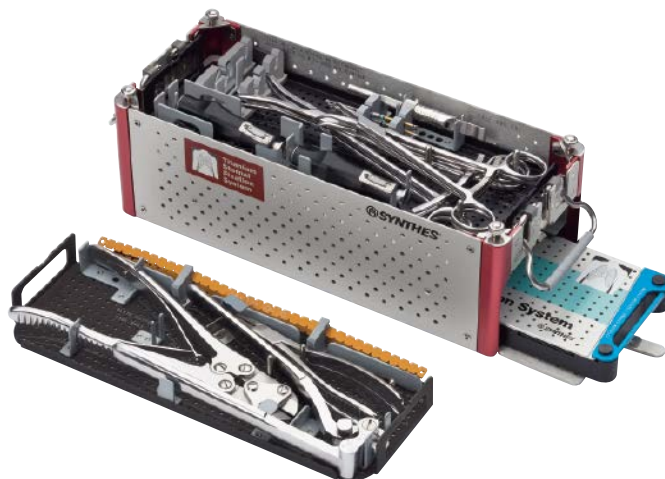


\*Mechanical test data on file at Synthes.  
Mechanical test results may not necessarily be indicative of clinical performance.

# TITANIUM STERNAL FIXATION SYSTEM SET (01.501.624)

## Graphic Case, Trays and Modules

- 305.694 Module for Longer Titanium Sternal Locking Screw with Plate/Drill Bit
- 305.695 Plate Bending Insert Block, for Titanium Sternal Modules
- 305.699 Label Sheet for Titanium Sternal Module (305.694)
- 690.691 Graphic Case, for Titanium Sternal Fixation System Set
- 690.692 Sternal Fixation Instrument Tray, for Screwdrivers, Forceps
- 690.693 Sternal Fixation Instrument Tray, for Plate Cutter, Bending Pliers
  
- Screw Length Markers (10/pkg.)
- 304.110 10 mm
- 304.112 12 mm
- 304.114 14 mm
- 304.116 16 mm
- 304.118 18 mm
- 304.120 20 mm
- 304.122 22 mm



## Instruments

- 1.5 mm Drill Bits, Stryker J-latch, 2 ea.
- 03.501.010 10 mm stop, 82 mm length
- 03.501.012 12 mm stop, 82 mm length
- 03.501.014 14 mm stop, 82 mm length
- 03.501.016 16 mm stop, 82 mm length
- 03.501.018 18 mm stop, 82 mm length
- 03.501.020 20 mm stop, 88 mm length
- 03.501.022 22 mm stop, 88 mm length
  
- 03.501.200 1.5 mm/1.8 mm Threaded Drill Guide, for Titanium Sternal Locking Plates, 2 ea.
- 03.501.212 1.8 mm Drill Bit with 12 mm stop, Stryker J-latch, 82 mm, 2 ea.
- 03.503.071 MatrixMANDIBLE/THORAX Self-Retaining Screwdriver Blade, medium, 2 ea.

For detailed cleaning and sterilization instructions, please refer to:  
[www.synthes.com/cleaning-sterilization](http://www.synthes.com/cleaning-sterilization)  
 In Canada, the cleaning and sterilization instructions will be provided with the Loaner shipments.

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Instruments continued

311.023	Ratcheting Screwdriver Handle, 2 ea.
319.11	Depth Gauge
329.142	Combination Bending Pliers, for 2.0 mm–2.4 mm plates
329.40.98	Bending Template, 37 holes, 2 ea.
391.963.96	Universal Bending Pliers, 2 ea.
391.990	Plate and Rod Cutter
398.903	Sternal Reduction Forceps, angled, with teeth, 2 ea.
398.985	Bone Reduction Forceps, large, 2 ea.
497.689	Bending Insert Screw, for Locking Reconstruction Plate, 2 pkgs. of 5

**Implants**

	3.0 mm Titanium Locking Screws, for Sternal Locking Plates (self-tapping, 5/pkg.)
413.580	10 mm, 5 pkgs.
413.582	12 mm, 6 pkgs.
413.584	14 mm, 6 pkgs.
413.586	16 mm, 6 pkgs.
413.588	18 mm, 6 pkgs.
413.590	20 mm, 6 pkgs.
413.592	22 mm, 6 pkgs.
460.019	Titanium Sternal Locking Straight Plate, 12 holes, 4 ea.
460.022*	Titanium Emergency Release Pin, 6 ea.
460.023	Titanium Sternal Locking Straight Plate, 20 holes, 4 ea.
460.027 <sup>◇</sup>	Small Titanium Sternal Locking H-Plate, 8 holes, 2 ea.
460.028 <sup>◇</sup>	Large Titanium Sternal Locking H-Plate, 8 holes, 2 ea.
460.035 <sup>◇</sup>	Titanium Sternal Locking Star Plate, 6 holes, 2 ea.
460.036 <sup>◇</sup>	Titanium Sternal Locking Star Plate, 12 holes, 2 ea.

\* Available sterile in 5-pack. Add .05S to product number.

◇ Available nonsterile or sterile-packed. Add S to product number for sterile product.

# TITANIUM STERNAL FIXATION SYSTEM PRIMARY CLOSURE SET (01.501.626)

## Graphic Case, Trays and Modules

- 305.690 Self-Drilling Screw Module, for the Titanium Sternal Fixation System
- 305.695 Plate Bending Insert Block, for Titanium Sternal Modules
- 690.691 Graphic Case, for Titanium Sternal Fixation System Set
- 690.693 Sternal Fixation Instrument Tray, for Plate Cutter, Bending Pliers
- 690.694 Sternal Fixation Instrument Tray, for Ratcheting Screwdriver, Forceps
- 60.501.607 Label Sheet for Self-Drilling Screw Module
- Screw Length Markers, for self-drilling screws
- 304.110W 10 mm, 2 ea.
- 304.112W 12 mm, 3 ea.
- 304.114W 14 mm, 3 ea.
- 304.116W 16 mm, 3 ea.
- 304.118W 18 mm, 2 ea.



## Instruments

- 03.501.065 Caliper
- 03.503.071 MatrixMANDIBLE/THORAX Self-Retaining Screwdriver Blade, medium, 2 ea.
- 311.023 Ratcheting Screwdriver Handle, 2 ea.
- 329.142 Combination Bending Pliers, for 2.0 mm–2.4 mm plates
- 329.40.98 Bending Template, 37 holes, 2 ea.
- 391.963.96 Universal Bending Pliers, 2 ea.
- 391.990 Plate and Rod Cutter
- 398.903 Sternal Reduction Forceps, angled, with teeth, 2 ea.
- 398.985 Bone Reduction Forceps, large, 2 ea.
- 497.689 Bending Insert Screw, for Locking Reconstruction Plate, 2 pkgs. of 5

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**Implants**

	3.0 mm Titanium Sternal Locking Screws, self-drilling (5/pkg.)
04.501.110.05	10 mm, 4 pkgs.
04.501.112.05	12 mm, 6 pkgs.
04.501.114.05	14 mm, 6 pkgs.
04.501.116.05	16 mm, 6 pkgs.
04.501.118.05	18 mm, 4 pkgs.
460.022*	Titanium Emergency Release Pin, for use with Sternal Fixation System, 6 ea.
460.036 <sup>◇</sup>	Titanium Sternal Locking Star Plate, 12 holes, 2 ea.
460.037 <sup>◇</sup>	Titanium Sternal Locking X-Plate, 10 holes, 2 ea.
460.038 <sup>◇</sup>	Titanium Sternal Locking Double-T Plate, 14 holes, 2 ea.
460.039 <sup>◇</sup>	Titanium Sternal Locking Angled Plate, 12 holes, 2 ea.
460.040 <sup>◇</sup>	Titanium Sternal Locking X-Plate, Wide 10 holes, 2 ea.
460.045 <sup>◇</sup>	Titanium Sternal Locking Straight Plate, 8 holes, 4 ea.
460.046 <sup>†◇</sup>	Titanium Sternal Locking Straight Plate, 13 holes, without pin, 2 ea.

\* Available sterile in 5-pack. Add .05S to product number.

◇ Available nonsterile or sterile-packed. Add S to product number for sterile product.

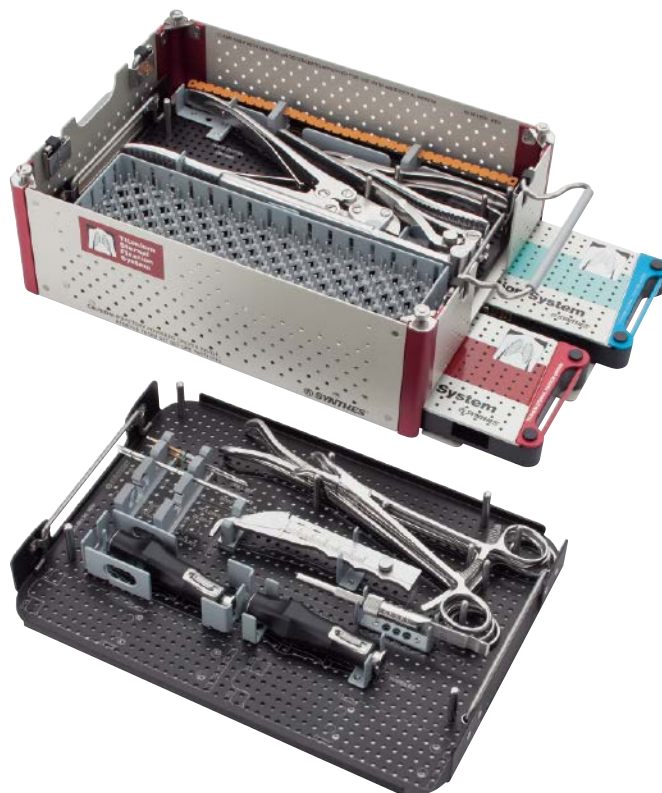
† Contraindicated for use in acute cardiac patients.



# TITANIUM STERNAL FIXATION SYSTEM COMBINATION SET (01.501.627)

## Graphic Case, Trays and Modules

- 305.690 Self-Drilling Screw Module, for the Titanium Sternal Fixation System
- 305.694 Module for Longer Titanium Sternal Locking Screw, with Plate/Drill Bit
- 305.699 Label Sheet for Titanium Sternal Module 305.694
- 60.501.601 Graphic Case, for Titanium Sternal Fixation System Combination Set
  
- 60.501.607 Label sheet for Self-Drilling Screw Module
  
- Screw Length Markers (10/pkg.)
- 304.110 10 mm
- 304.112 12 mm
- 304.114 14 mm
- 304.116 16 mm
- 304.118 18 mm
- 304.120 20 mm
- 304.122 22 mm
  
- Screw Length Markers, for self-drilling screws
- 304.110W 10 mm, 2 ea.
- 304.112W 12 mm, 3 ea.
- 304.114W 14 mm, 3 ea.
- 304.116W 16 mm, 3 ea.
- 304.118W 18 mm, 2 ea.



## Instruments

- 03.501.065 Caliper
- 03.501.200 1.5 mm/1.8 mm Threaded Drill Guide, for Titanium Sternal Locking Plates, 2 ea.
- 03.501.212 1.8 mm Drill Bit Stryker J-Latch, 12 mm stop, 82 mm, 2 ea.
- 03.503.071 MatrixMANDIBLE/THORAX Self-Retaining Screwdriver Blade, medium, 2 ea.
- 311.023 Ratcheting Screwdriver Handle, 2 ea.
- 319.11 Depth Gauge, for 1.5 mm and 2.0 mm Cortex Screws, measures up to 24 mm

## Instruments continued

329.142	Combination Bending Pliers, for 2.0 mm–2.4 mm plates
329.40.98	Bending Template, 37 holes, 2 ea.
391.963.96	Universal Bending Pliers, 2 ea.
391.990	Plate and Rod Cutter
398.903	Sternal Reduction Forceps, angled, with teeth, 2 ea.
398.985	Bone Reduction Forceps, large, 2 ea.

**In 305.690 Module**

305.695	Plate Bending Insert Block, for Titanium Sternal Modules
	3.0 mm Titanium Sternal Locking Screws, self-drilling (5/pkg.)
04.501.110.05	10 mm, 4 pkgs.
04.501.112.05	12 mm, 6 pkgs.
04.501.114.05	14 mm, 6 pkgs.
04.501.116.05	16 mm, 6 pkgs.
04.501.118.05	18 mm, 4 pkgs.

460.022*	Titanium Emergency Release Pin, for use with Sternal Fixation System, 6 ea.
460.036 <sup>◇</sup>	Titanium Sternal Locking Star Plate, 12 holes, 2 ea.
460.037 <sup>◇</sup>	Titanium Sternal Locking X-Plate, 10 holes, 2 ea.
460.038 <sup>◇</sup>	Titanium Sternal Locking Double-T Plate, 14 holes, 2 ea.
460.039 <sup>◇</sup>	Titanium Sternal Locking Angled Plate, 12 holes, 2 ea.
460.040 <sup>◇</sup>	Titanium Sternal Locking X-Plate, wide, 10 holes, 2 ea.
460.045 <sup>◇</sup>	Titanium Sternal Locking Straight Plate, 8 holes, 4 ea.
460.046 <sup>◇†</sup>	Titanium Sternal Locking Straight Plate, 13 holes, without pin, 2 ea.
497.689	Titanium Bending Insert Screw, for Locking Reconstruction Plate, 2 pkgs. of 5

**In 305.694 Module**

305.695	Plate Bending Insert Block for Titanium Sternal Modules
	1.5 mm Drill Bits, Stryker J-latch, 2 ea.
03.501.010	10 mm stop, 82 mm length
03.501.012	12 mm stop, 82 mm length
03.501.014	14 mm stop, 82 mm length
03.501.016	16 mm stop, 82 mm length
03.501.018	18 mm stop, 82 mm length
03.501.020	20 mm stop, 88 mm length
03.501.022	22 mm stop, 88 mm length
	3.0 mm Titanium Locking Screws, for Sternal Locking Plates, (self-tapping, 5/pkg.)
413.580	10 mm, 5 pkgs.
413.582	12 mm, 6 pkgs.
413.584	14 mm, 6 pkgs.
413.586	16 mm, 6 pkgs.
413.588	18 mm, 6 pkgs.
413.590	20 mm, 6 pkgs.
413.592	22 mm, 6 pkgs.

460.019	Titanium Sternal Locking Straight Plate, 12 holes, 4 ea.
460.022*	Titanium Emergency Release Pin, 6 ea.
460.023	Titanium Sternal Locking Straight Plate, 20 holes, 4 ea.
460.027 <sup>◇</sup>	Small Titanium Sternal Locking H-Plate, 8 holes, 2 ea.
460.028 <sup>◇</sup>	Large Titanium Sternal Locking H-Plate, 8 holes, 2 ea.
460.035 <sup>◇</sup>	Titanium Sternal Locking Star Plate, 6 holes, 2 ea.
460.036 <sup>◇</sup>	Titanium Sternal Locking Star Plate, 12 holes, 2 ea.
497.689	Titanium Bending Insert Screw, for Locking Reconstruction Plate, 2 pkgs. of 5

\* Available sterile in 5-pack. Add .05S to product number.

◇ Available nonsterile or sterile-packed. Add S to product number for sterile product.

† Contraindicated for use in acute cardiac patients.

# ALSO AVAILABLE

690.699	Sternal Fixation Instrument Tray, for Shortcuts, Bending Pliers		3.0 mm Titanium Sternal Locking Screws, self-drilling, single-pack
03.501.056	Lag Tool, For Titanium Sternal Fixation System	04.501.110.01	10 mm
03.501.076	MatrixRIB/Thorax self-retaining screwdriver blade with AO Quick Coupling	04.501.112.01	12 mm
03.501.210–	1.8 mm Drill Bits, Stryker J-latch,	04.501.114.01	14 mm
03.501.224	10 mm–18 mm stops, 82 mm	04.501.116.01	16 mm
	20 mm–24 mm stops, 88 mm	04.501.118.01	18 mm
03.501.410–	1.5 mm Drill Bits, hex coupling,	04.501.120.01	20 mm
03.501.424	10 mm–18 mm stops, 82 mm		3.0 mm Titanium Sternal Locking Screws, self-drilling, sterile, single-pack
	20 mm–24 mm stops, 88 mm	04.501.110S	10 mm
03.501.510–	1.8 mm Drill Bits, hex coupling,	04.501.112S	12 mm
03.501.524	10 mm–18 mm stops, 82 mm	04.501.114S	14 mm
	20 mm–24 mm stops, 88 mm	04.501.116S	16 mm
03.503.072	MatrixMANDIBLE/THORAX Self-Retaining Screwdriver Blade, long	04.501.118S	18 mm
04.501.120.05	3.0 mm Titanium Sternal Locking Screw, self-drilling, 20 mm	04.501.120S	20 mm
313.94	2.4 mm Screwdriver with Holding Sleeve	SD300.101	Locking Plate Spacer
313.96	Cruciform Screwdriver	SD314.007	MatrixMANDIBLE/THORAX Screwdriver Blade, self-retaining, quick coupling, 52 mm
391.967	Shortcut Plate Cutter (2 required)		
460.048S	Titanium Sternal Locking Double T-plate, Tall, 18 holes, sterile		
460.022.05S	Titanium Emergency Release Pin, sterile, (5/pkg.)		
460.024S	Titanium Sternal Locking Straight Plate, 30 holes, sterile		
460.171S	Titanium Sternal Fixation Kit, Large H plate with 12 mm self-drilling screws, sterile		
460.172S	Titanium Sternal Fixation Kit, Large H plate with 14 mm self-drilling screws, sterile		

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