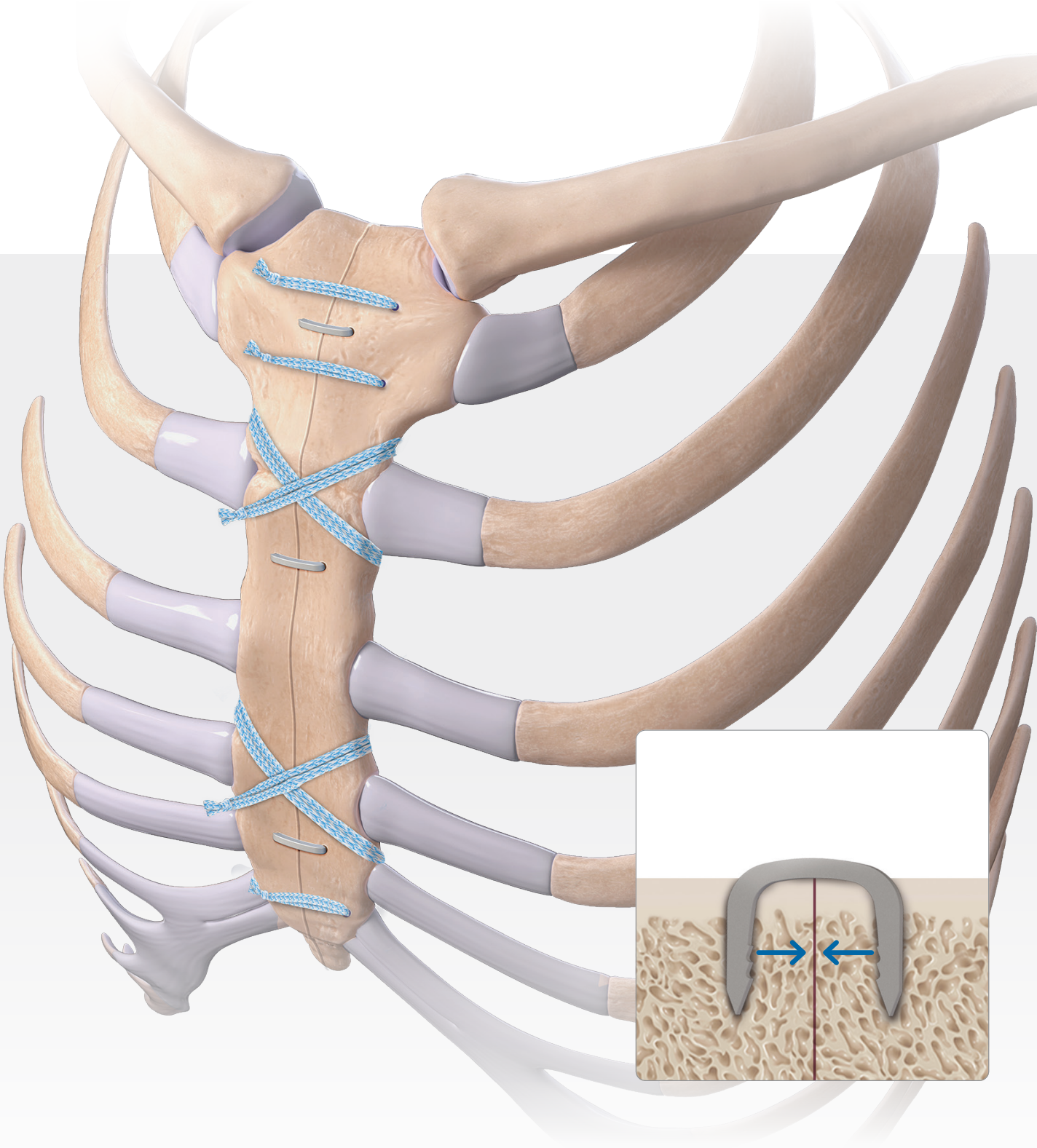
DynaNite® CT Nitinol Staples

Sternotomy Closure Surgical Technique



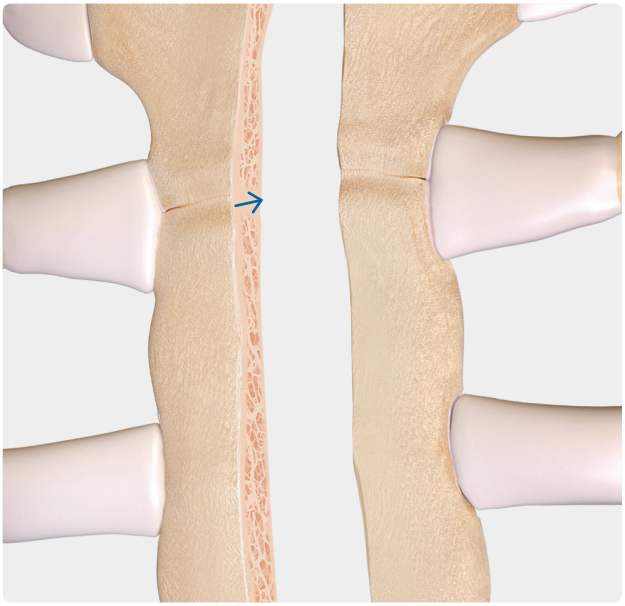
Arthrex®

Introduction

DynaNite® CT nitinol staples are used with FiberTape® sternal closure to augment sternotomy fixation. Nitinol is a shape-memory alloy that deforms when a force is applied and returns to its original shape when the force is removed. Taking advantage of these dynamic properties, DynaNite CT nitinol staples enhance sternal stability by generating and maintaining constant compression across the sternotomy. DynaNite CT nitinol staples provide a simple solution and technique to help minimize sternal movement.

- No temperature activation required
- Low-profile 1 mm staple bridge height
- Streamlined instrumentation packaged in single-use disposable kits to help increase OR efficiencies and eliminate postsurgical cleaning and sterilization

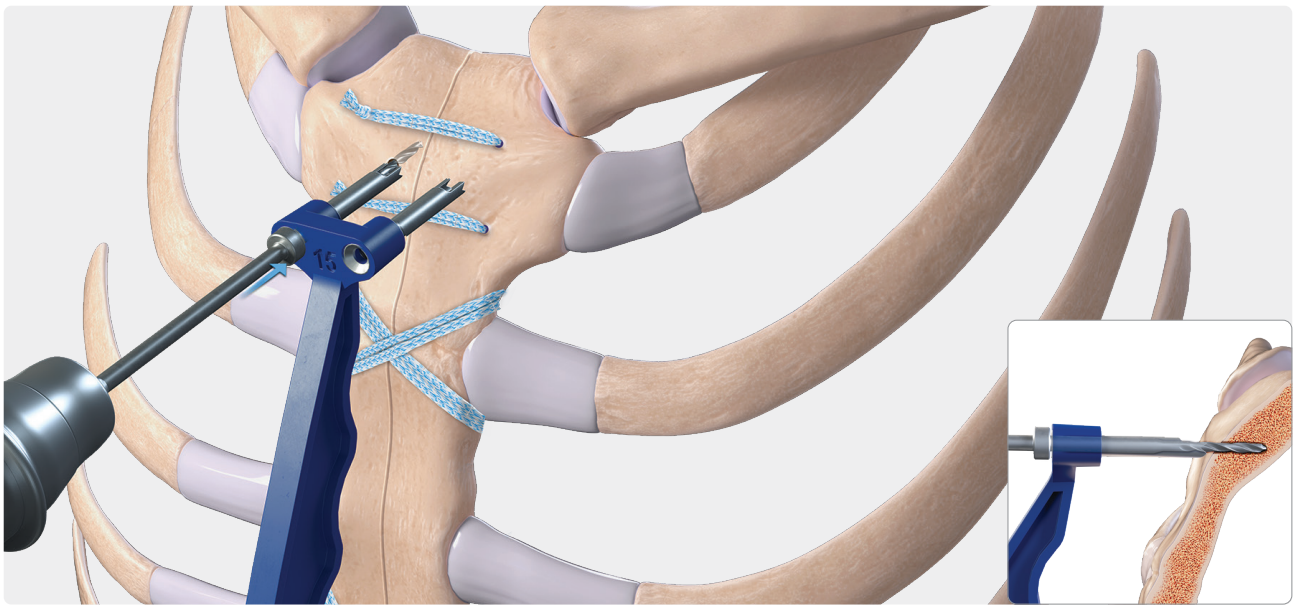
Surgical Technique



1

Evaluate and measure the thickness of both sternal halves prior to approximating the sternal edges to determine the appropriate staple length and location of implantation.

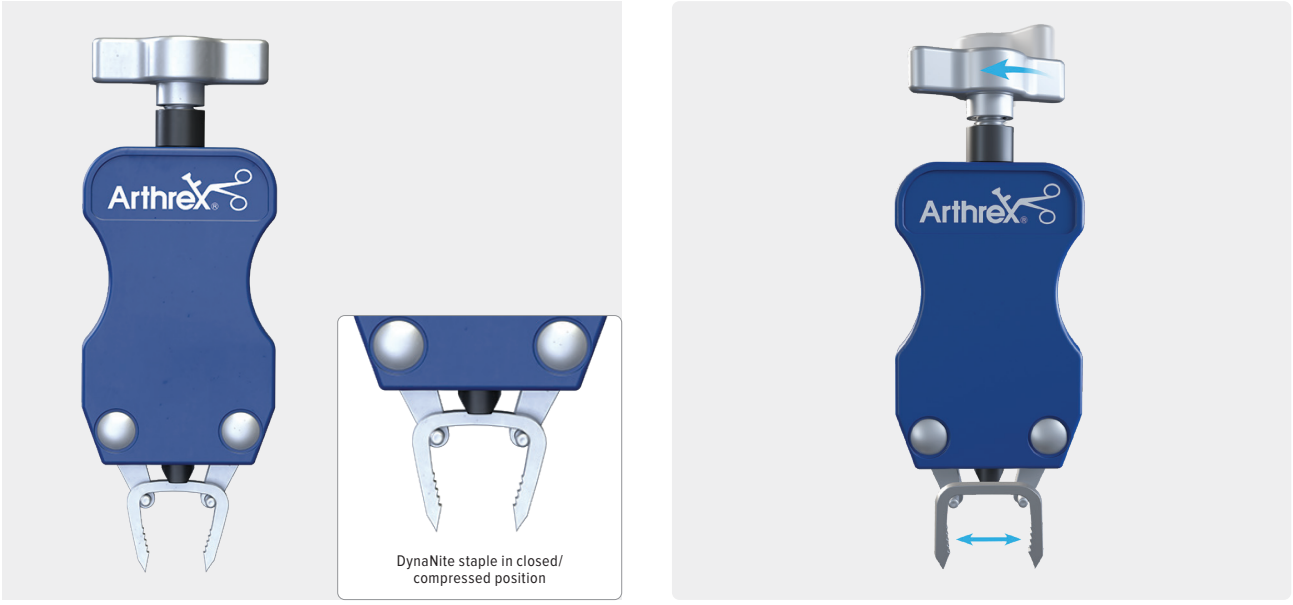
> **Note:** DynaNite CT nitinol staples for sternotomy closure are available in two sizes: 13 mm (W) x 10 mm (L) and 15 mm (W) x 12 mm (L). **To avoid drilling beyond the posterior cortex of the sternum, choose a staple length that is at least 2 mm less than the thickness of the sternum in the location where the staple will be implanted.**



2

With the sternal halves reduced per the FiberTape® sternal closure surgical technique, measure the width of the sternum to determine the appropriate DynaNite® CT nitinol staple width and location for implantation. Center the DynaNite drill guide across the sternal halves, perpendicular to the sternotomy.

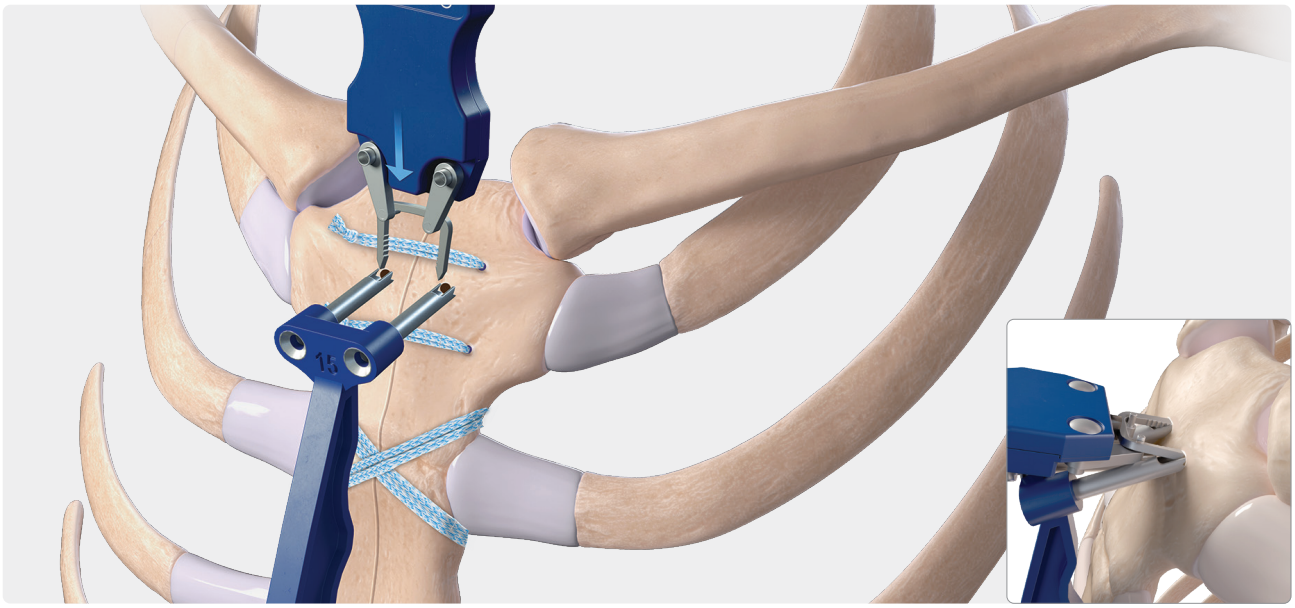
Avoid placing the DynaNite staple directly over the FiberTape suture. Using the provided 2.0 mm drill bit with positive stop, drill the staple holes in the desired location on the sternum. Maintain the drill guide in position throughout the process. **Arthrex-provided drill guides and drill bits must be used with the DynaNite CT staple to prevent overdrilling of the sternum.**



3

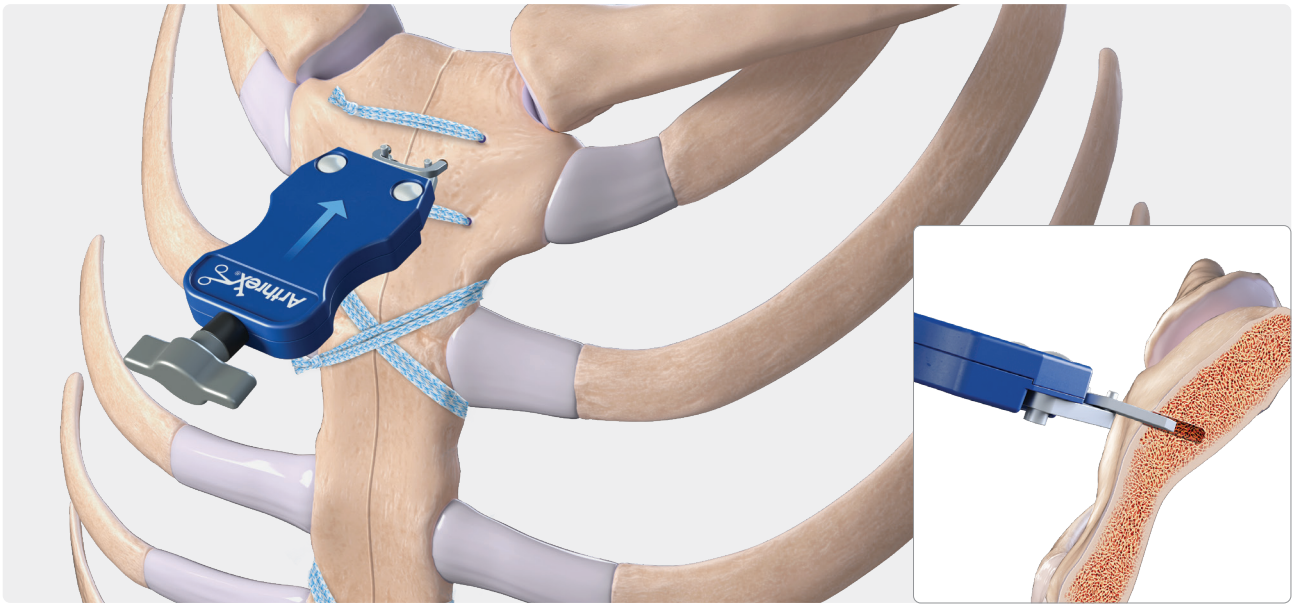
Turn the knob on the delivery device clockwise until the staple legs are open to a width equal to the predrilled holes.

Note: The staple legs should be in a parallel, or near-parallel, position prior to insertion to facilitate compression of the sternotomy once the staple is inserted. Avoid overextension of the staple on the delivery device, as this could lead to the staple dislodging from the applicator.



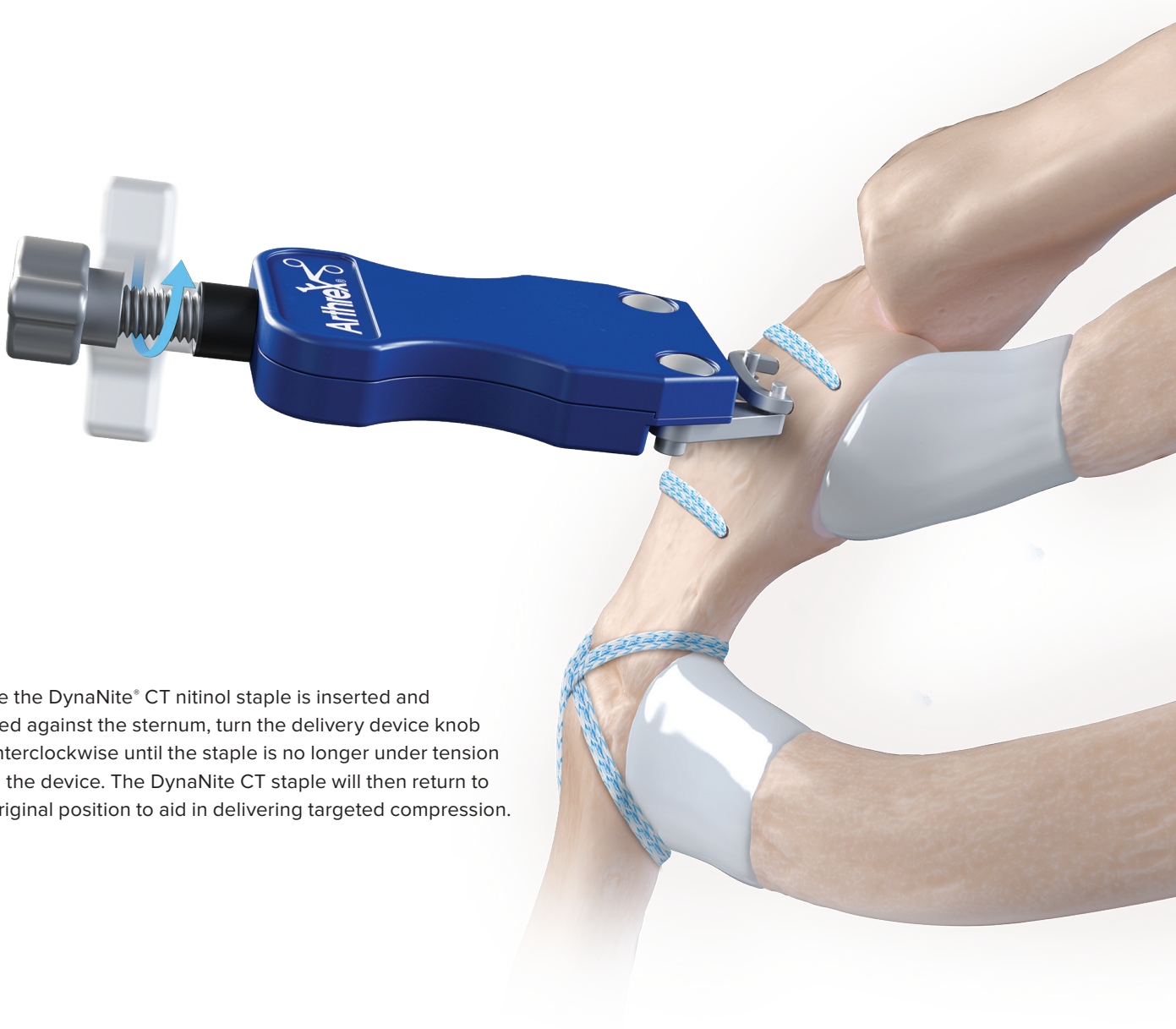
4

Use the windows in the drill guide to help position the tips of the staple legs into the drilled holes. Once satisfied with the position of the staple, remove the drill guide.



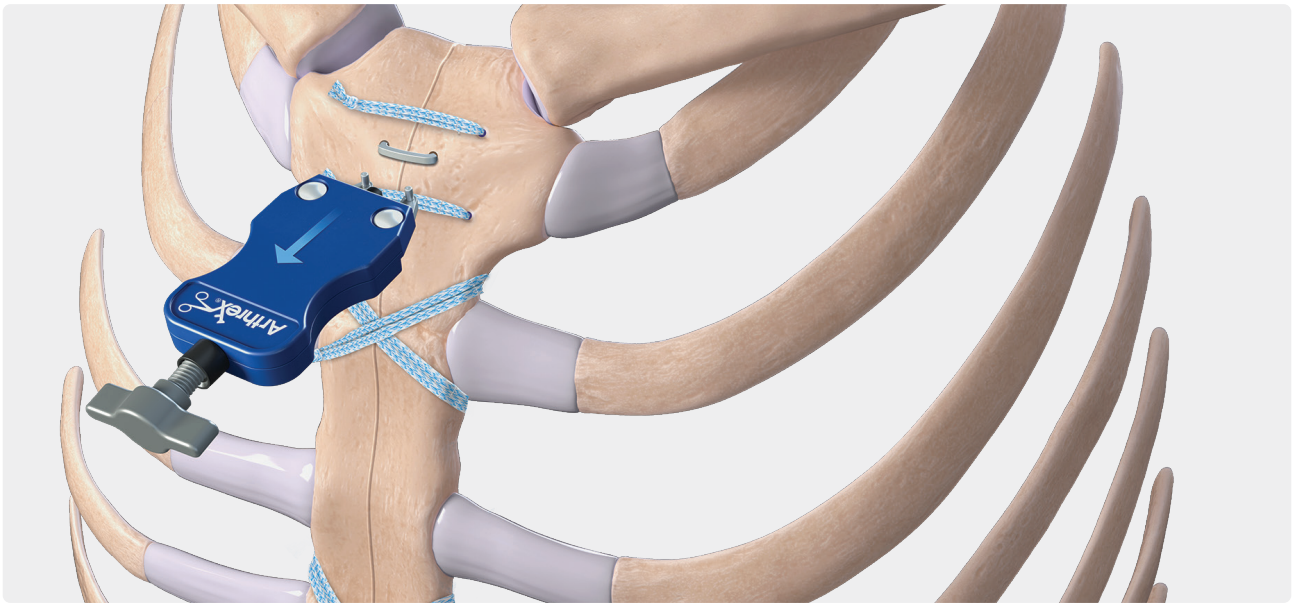
5

Using the delivery device, advance the staple legs into the drill holes until the device is seated against the sternum. If necessary, a mallet can be used to seat the staple against the sternum, by gently tapping on the knob of the delivery device.



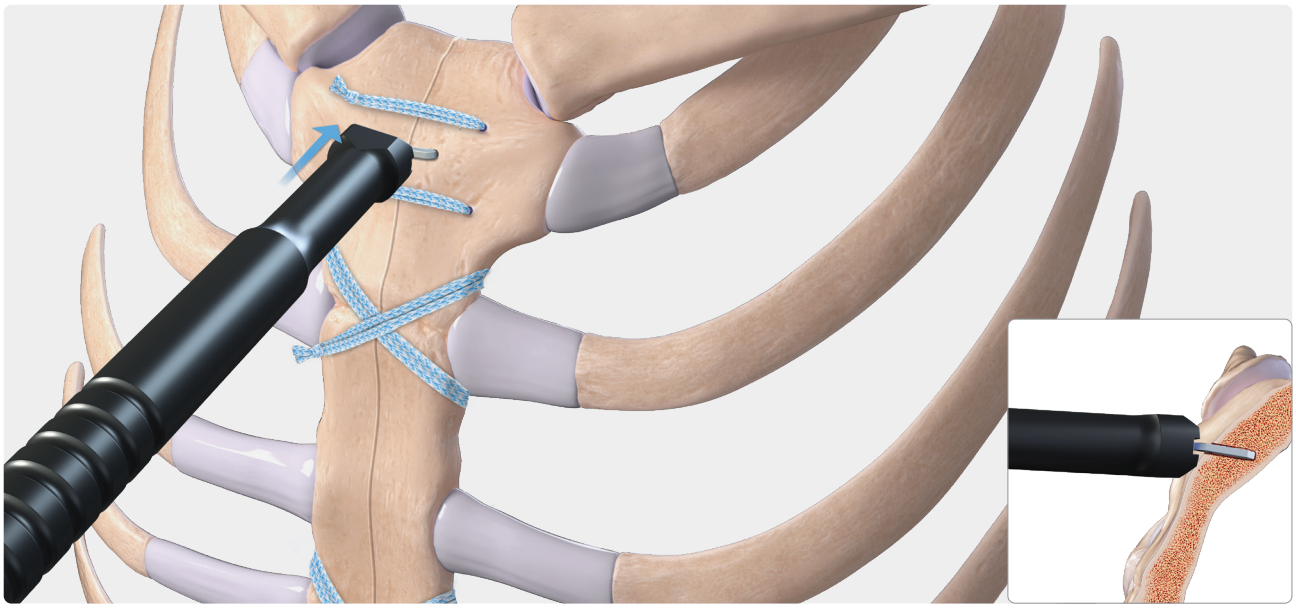
6

Once the DynaNite® CT nitinol staple is inserted and seated against the sternum, turn the delivery device knob counterclockwise until the staple is no longer under tension from the device. The DynaNite CT staple will then return to its original position to aid in delivering targeted compression.



7

Slide the delivery device away from the staple.

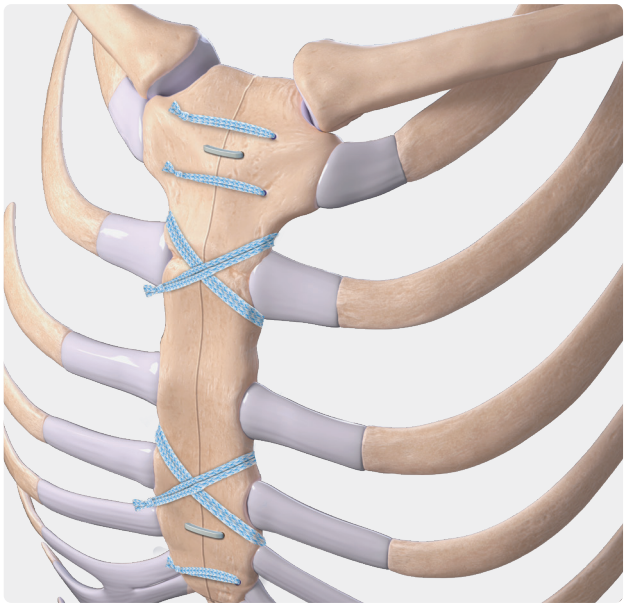


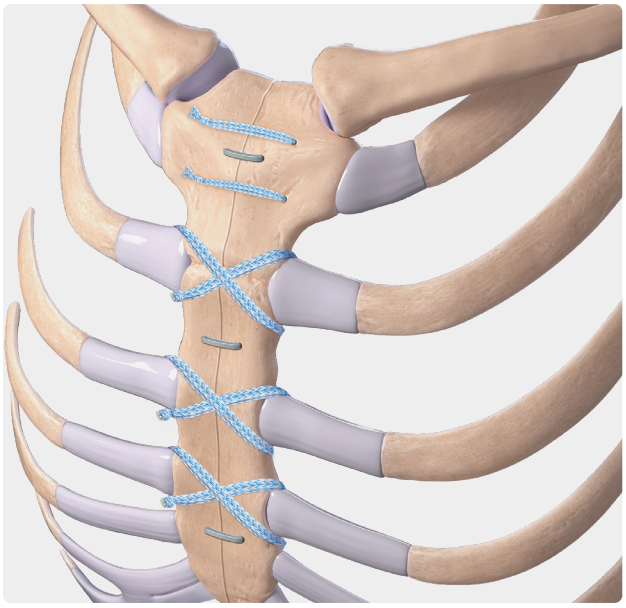
8

Use the DynaNite® tamp to ensure the staple is fully flush with the sternum. Repeat the above steps for placing additional DynaNite CT nitinol staples where more fixation is desired.

Note: As an adjunct to FiberTape® sternal closure, a minimum of two staples is recommended for the fixation of a median sternotomy.

In the case of emergent reentry and removal, a wire cutter may be used to cut the cross-section of the staple bridge. With a sternal wire driver, pull the staple halves from the bone.





FiberTape sternal closure along with DynaNite CT nitinol staples may be used in multiple configurations to reduce, fixate, and stabilize a sternotomy closure based on surgeon preference and the needs of the patient.

Ordering Information

DynaNite® CT Nitinol Staple	
DynaNite CT nitinol staple with instrumentation, 13 mm (W) × 10 mm (L)	AR-8718CTDS-1310
DynaNite CT nitinol staple with instrumentation, 15 mm (W) × 12 mm (L)	AR-8718CTDS-1512
DynaNite CT nitinol staple, 13 mm (W) × 10 mm (L)	AR-8718CT-1310
DynaNite CT nitinol staple, 15 mm (W) × 12 mm (L)	AR-8718CT-1512

FiberTape® Sternal Closure	
FiberTape sternal closure with tapered cutting needle	AR-7288
FiberTape sternal closure with blunt needle	AR-7289
TigerTape™ sternal closure with conventional cutting needle	AR-7288T
TigerTape sternal closure with blunt needle	AR-7289T
Radiopaque FiberTape sternal closure with tapered cutting needle	AR-7288R
Radiopaque FiberTape sternal closure with blunt needle	AR-7289R
FiberTape sternal closure kit X4	AR-7820SC-4
FiberTape sternal closure kit X5	AR-7820SC-5
FiberTape sternal closure kit X6	AR-7820SC-6
FiberTape Cerclage tensioner, single-use	AR-7820
FiberTape Cerclage tensioner	AR-7800
FiberTape Cerclage tensioner handle	AR-7801
FiberWire® scissors	AR-11796

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Arthrex manufacturer, authorized representative, and importer information (Arthrex eIFUs)

US patent information

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