SternaLock® Blu

MINIMALLY INVASIVE TECHNIQUES

BIOMET® MICROFIXATION

One Surgeon. One Patient.

One Surgeon. One Patient.®

Over 1 million times per year, Biomet helps one surgeon provide personalized care to one patient.

The science and art of medical care is to provide the right solution for each individual patient. This requires clinical mastery, a human connection between the surgeon and the patient and the right tools for each situation.

At Biomet, we strive to view our work through the eyes of one surgeon and one patient. We treat every solution we provide as if it's meant for a family member.

Our approach to innovation creates real solutions that assist each surgeon in the delivery of durable personalized care to each patient, whether that solution requires a minimally invasive surgical technique, advanced biomaterials or a custom, patient-matched implant.

When one surgeon connects with one patient to provide personalized care, the promise of medicine is fulfilled.

One Surgeon. One Patient.®

The New Alternative for Minimally Invasive Closure

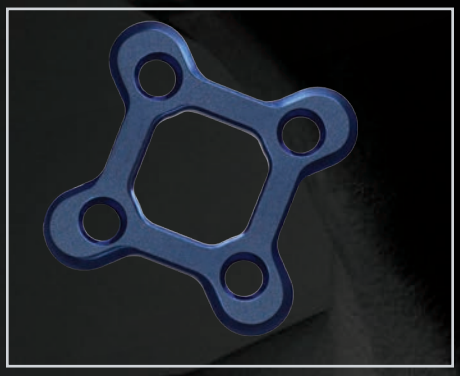
Minimally invasive techniques for cardiothoracic surgery offer several benefits compared to the traditional midline sternotomy. The most visual benefit is the reduced size of the scar. On average, the length of a mini-sternotomy or mini-thoracotomy incision is only 3 to 4 inches, compared to 6 to 8 inches for a midline sternotomy.[1] Additional benefits may include: shorter hospital stay, lower risk of bleeding and shorter recovery time.[2]

The SternaLock Blu system offers a rigid fixation solution for a variety of minimally invasive approaches including the mini-sternotomy and mini-thoracotomy. The SternaLock Blu plates were specifically developed to address the challenges associated with fixating a 90 degree sternal incision or rib osteotomy. The plates increase stability at the osteotomy site, while still allowing for minimally invasive access.

The following pages detail the surgical technique for using the SternaLock Blu system to rigidly fixate the bone after a mini-sternotomy or a mini-thoracotomy. This guide provides a detailed visual demonstration of the surgical technique and the standard SternaLock Blu plate and screw configuration used for these approaches.

1. Gundry SR, Shattuck OH, Razzouk AJ, del Rio MJ, Sardari FF, Bailey LL. Facile minimally invasive cardiac surgery via mini-sternotomy. Ann Thorac Surg. 1998 Apr;65(4):1100-4.

2. Douglas R. Johnston, MD, Fernando A. Atik, MD, Jeevanantham Rajeswaran, MSc, Eugene H. Blackstone, MD, Edward R. Nowicki, MD, MS, Joseph F. Sabik III, MD, Tomislav Mihaljevic, MD, A. Marc Gillinov, MD, BruceW. Lytle, MD and Lars G. Svensson, MD, PhDa. Outcomes of less invasive J-incision approach to aortic valve surgery. The Journal of Thoracic and Cardiovascular Surgery 2012.



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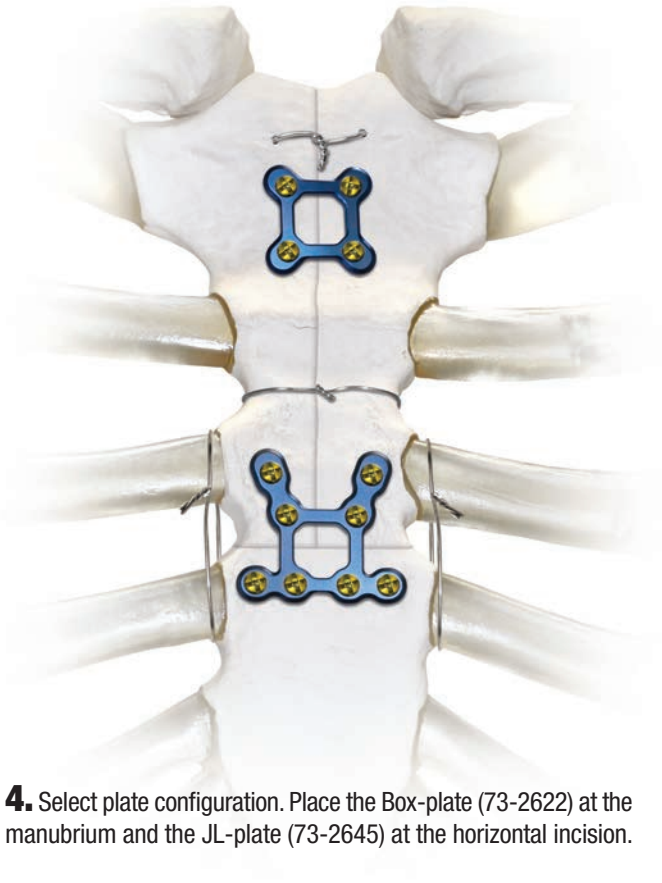
Mini-Sternotomy Surgical Technique[1]

Mini-sternotomy incisions were described and promoted by Dr. Steven R. Gundry in the 1990s, in adult and pediatric patients. Since then, many variations of the technique have been used and reported on. Mini-sternotomies allow for surgical access to the ascending aorta, aortic root, aortic arch, pulmonary artery, right atrium and roof of the left atrium.[2]

1. Perform your mini-sternotomy as usual. Above is an example of an upper T incision. The sternum is cut vertically from the supra-sternal notch along the midline of the sternum down to the horizontal limb of the inverted T, J, or L at the 3rd or 4th intercostal space.

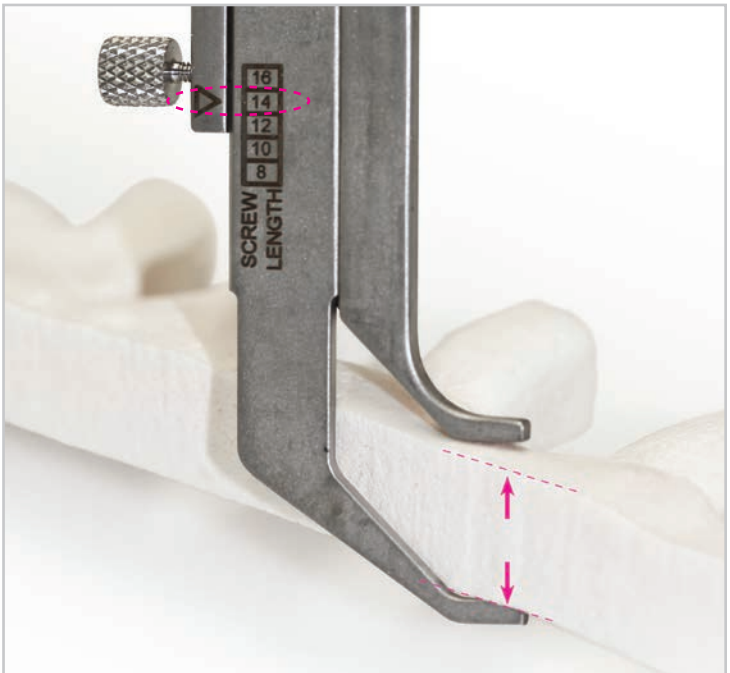


4. Select plate configuration. Place the Box-plate (73-2622) at the manubrium and the JL-plate (73-2645) at the horizontal incision.

1. The surgical technique presented is that of Brian J. deGuzman, MD.

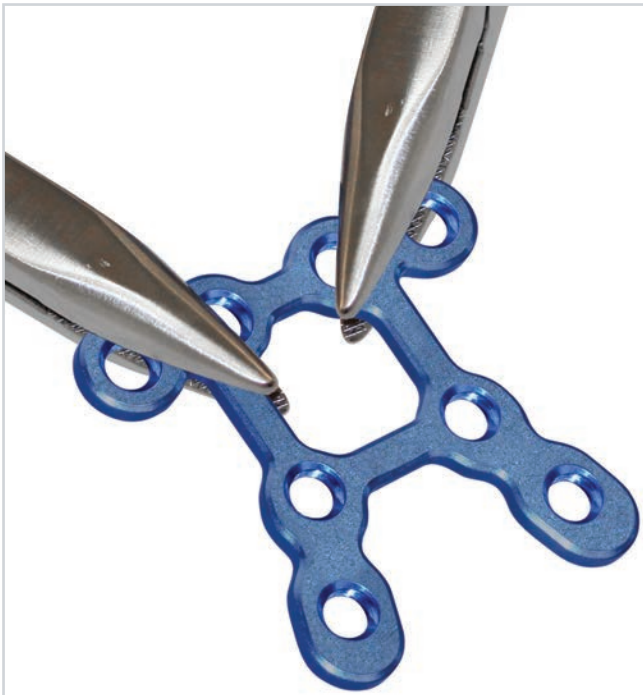
2. Jai Raman, MD, FRACS, PhD. Mini-Sternotomy with Plate Fixation.

*Caliper does not come standard in set.



2. Measure sternal depth where plate placement will occur. Measure 3 points (manubrium, the lateral incision, and body). The measuring device indicates that a 14mm screw length would be recommended for plate placement (indicated by the arrows). The measuring device accounts for the thickness of the plate, so a 14mm screw would be used in this example.

3. To reduce the sternum, wire the manubrium, body and vertically around the ribs above and below the lateral incision. An alternative approach is to use the reduction forceps to reduce the bony segments.



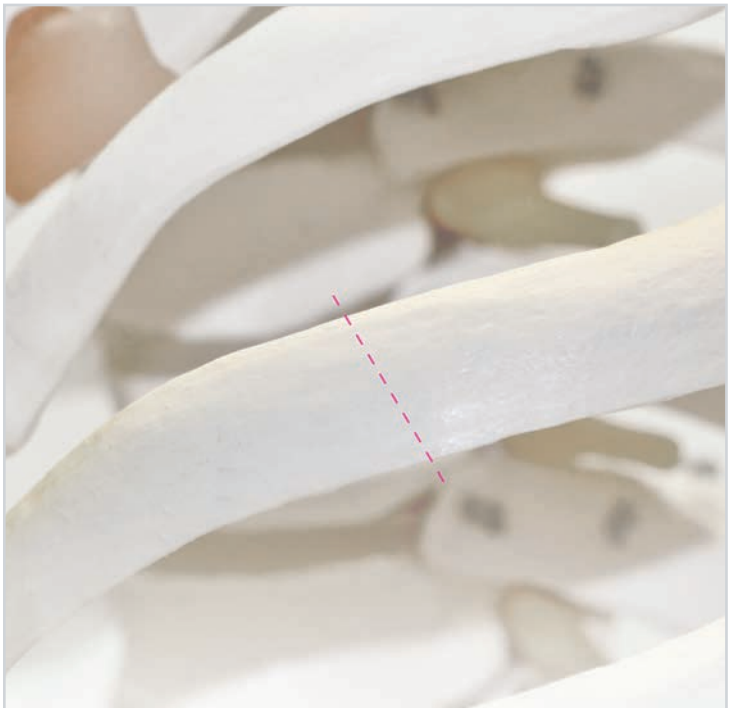
5. Plates are double-sided to facilitate placement. Contour plates as needed to ensure they lay flat on the sternum.

6. Select screws based on previous sternal measurements from step 2. Insert screws into plate. Do not lock initial screw to avoid plate rotation. Fully tighten once additional screws are in place.

Mini-Thoracotomy Surgical Technique[1]

Chronic post-thoracotomy pain (CPTP), is a common complication of a thoracotomy, occurring in approximately 50% of patients.[2] Severe and disabling pain affects 5% of patients post-thoracotomy.[2] CPTP is thought to result from intercostal nerve damage sustained during rib retraction or reduction.[2]

Here we describe a thoracotomy technique that minimizes intra-operative trauma to the intercostal neurovascular bundle, preserves chest wall integrity, permits adequate exposure of the surgical field and rigidly fixates the rib to reduce movement, which may reduce pain level.[2]

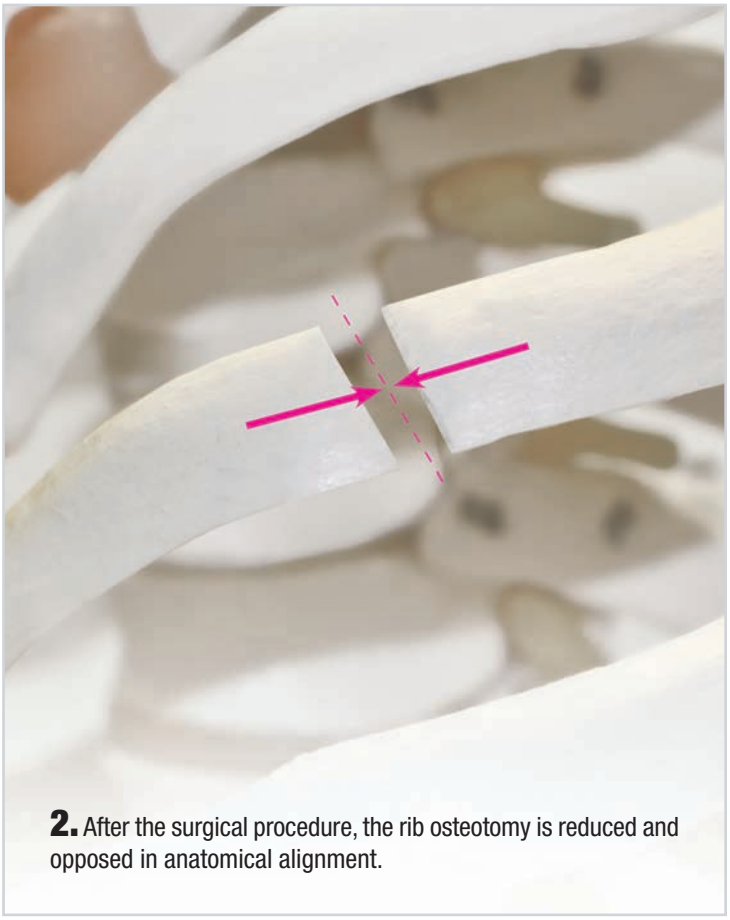


1. To gain access to the rib, make an incision through the epidermis along the inferior margin of the rib. Dissect the neurovascular bundle of the rib over about 3cm at the osteotomy site. Make an oblique osteotomy using a ring cutter, taking care to avoid the mobilized neurovascular bundle.

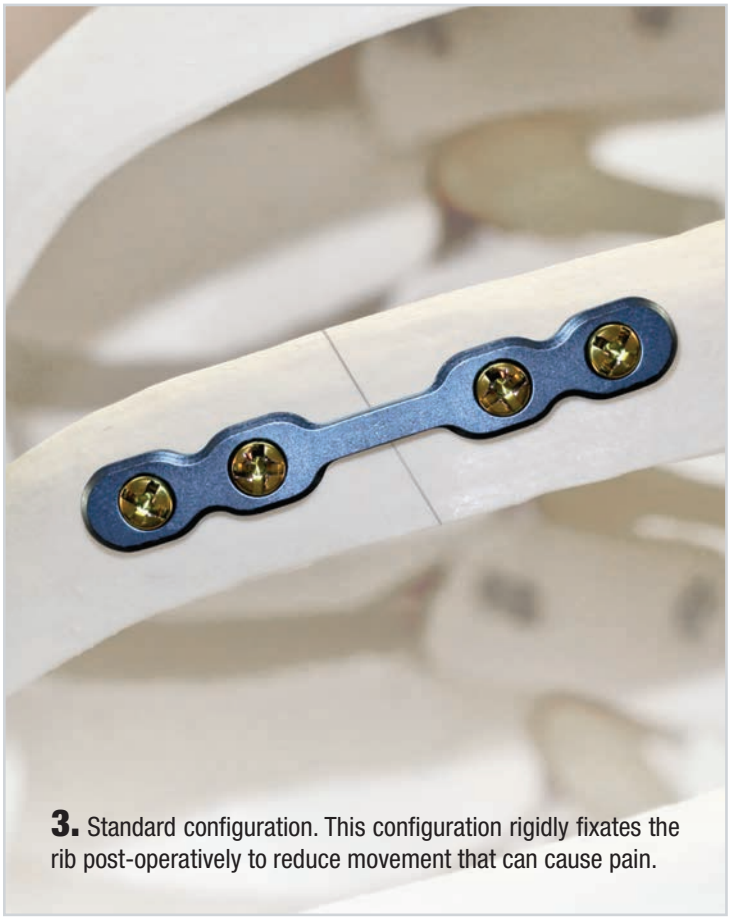
4. Plates are double-sided to facilitate placement. Contour plates as needed to ensure they lay flat on the rib.

1. The surgical technique presented is that of Jai Raman, MD, FRACS, PhD.

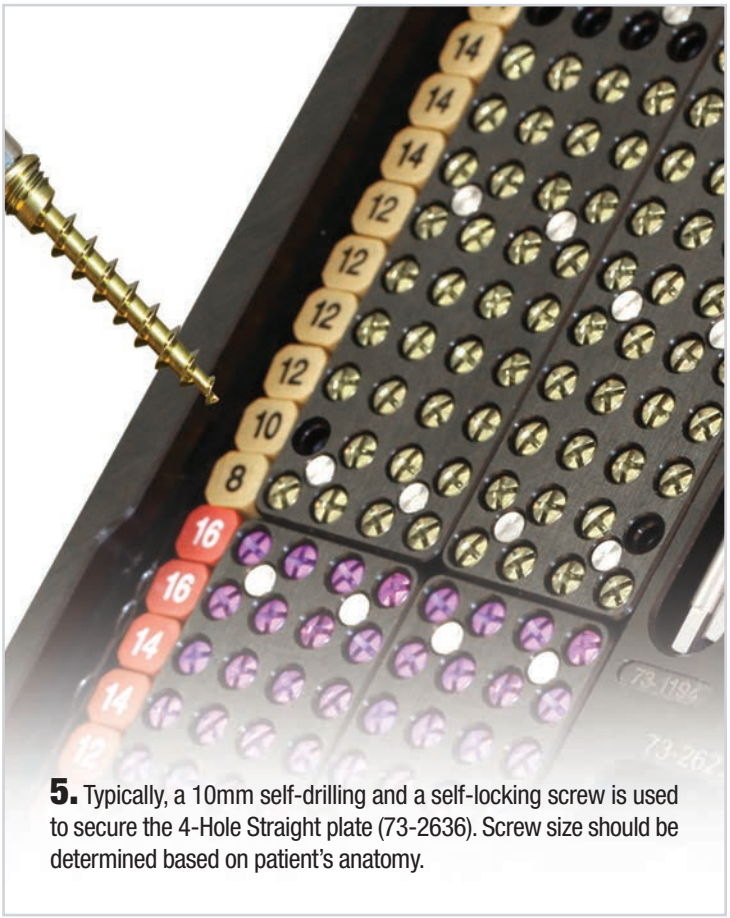
2. Jai Raman, MD, FRACS, PhD. Rib Osteotomy and Fixation: Enabling Technique for Better Mini-Thoracotomy Exposure in Cardiac and Thoracic Procedures.



2. After the surgical procedure, the rib osteotomy is reduced and opposed in anatomical alignment.



3. Standard configuration. This configuration rigidly fixates the rib post-operatively to reduce movement that can cause pain.



5. Typically, a 10mm self-drilling and a self-locking screw is used to secure the 4-Hole Straight plate (73-2636). Screw size should be determined based on patient's anatomy.

6. Insert screws into plate. Do not lock the initial screw to avoid plate rotation. Fully tighten once additional screws are in place.

What fascinates you about the body is also what drives us. That's why we're always pushing the boundaries of engineering to make products that help you keep the human form as glorious as it was intended. To learn more about our breadth of products, call 800.874.7711 or visit us online at biometmicrofixation.com.
We'd love to join you in a conversation about the future.

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For more information on SternaLock® Blu minimally invasive solutions, please contact us at:

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