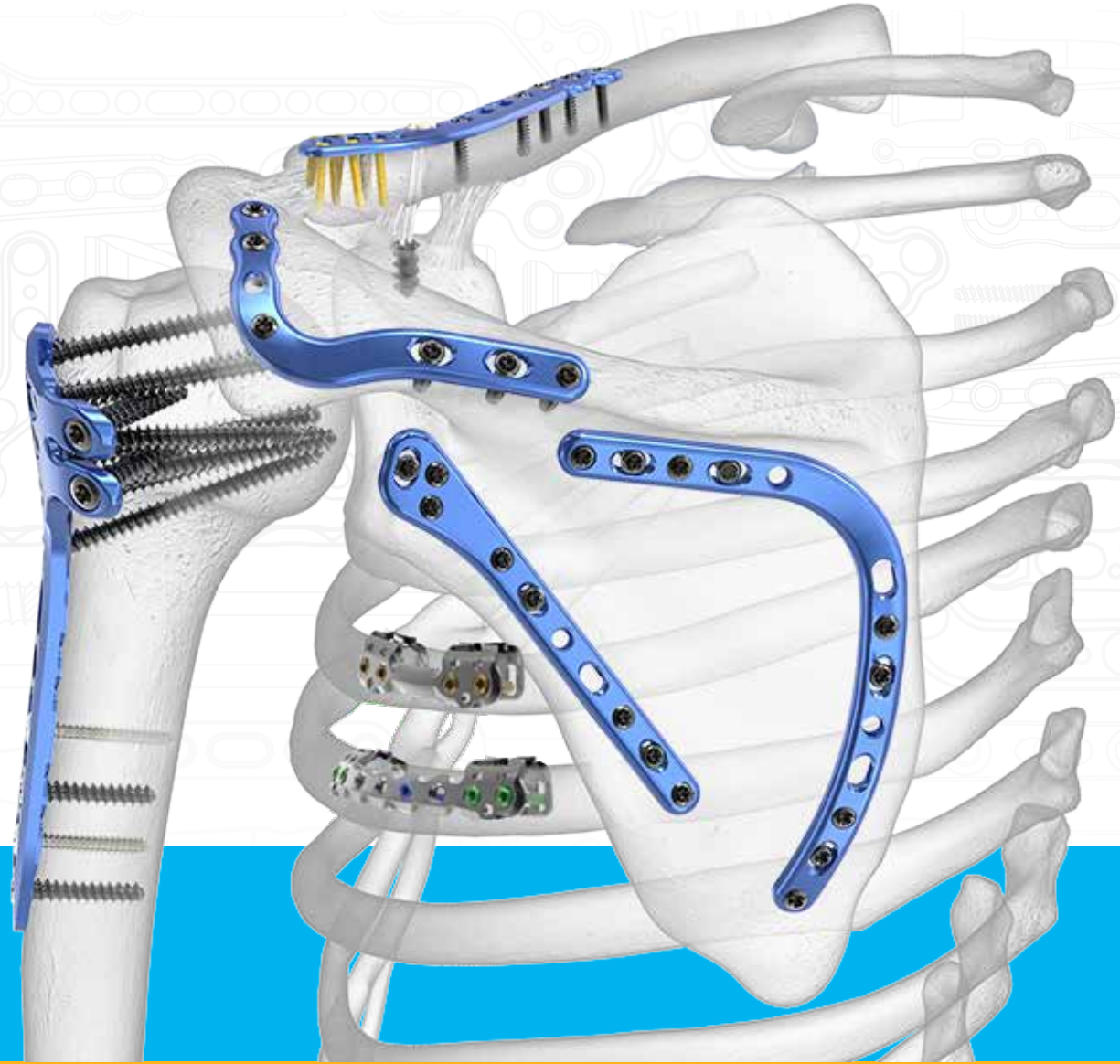
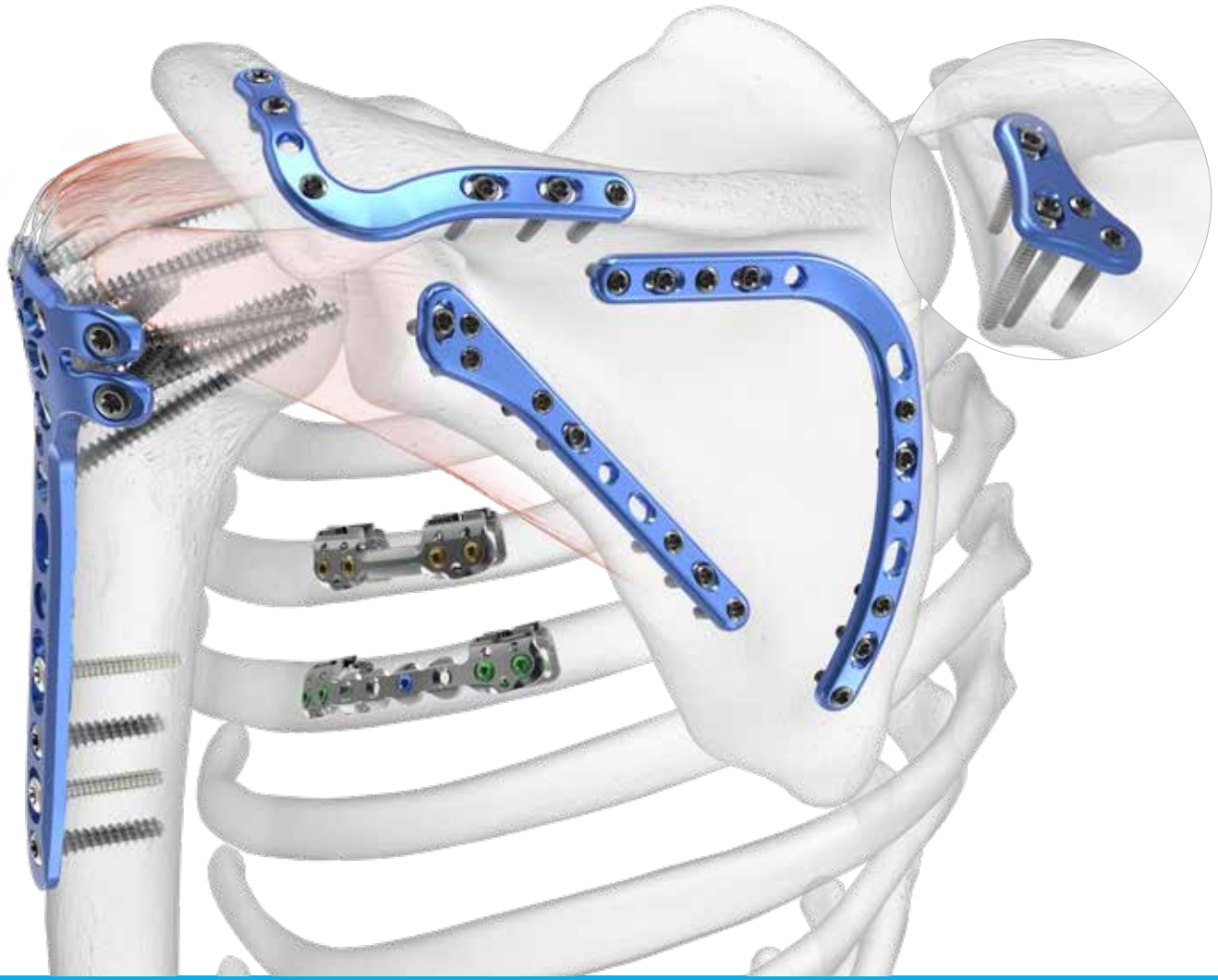
acumed®

Shoulder Girdle and Chest Wall Solutions





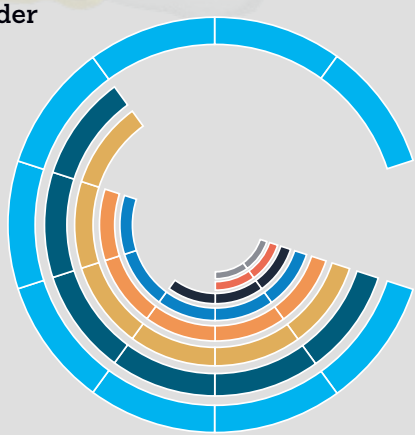
Solutions for Complex Shoulder Girdle and Rib Injuries

Acumed vs the Competition

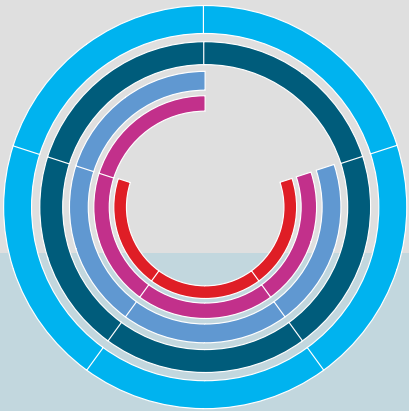
Acumed has the most complete selection of upper extremity fixation and specialty plates on the market.*

The outer rings in the charts represent Acumed's product portfolios, while the inner rings represent our competitors' offerings. Acumed has more shoulder and rib products than most of our competitors.

Shoulder



Rib



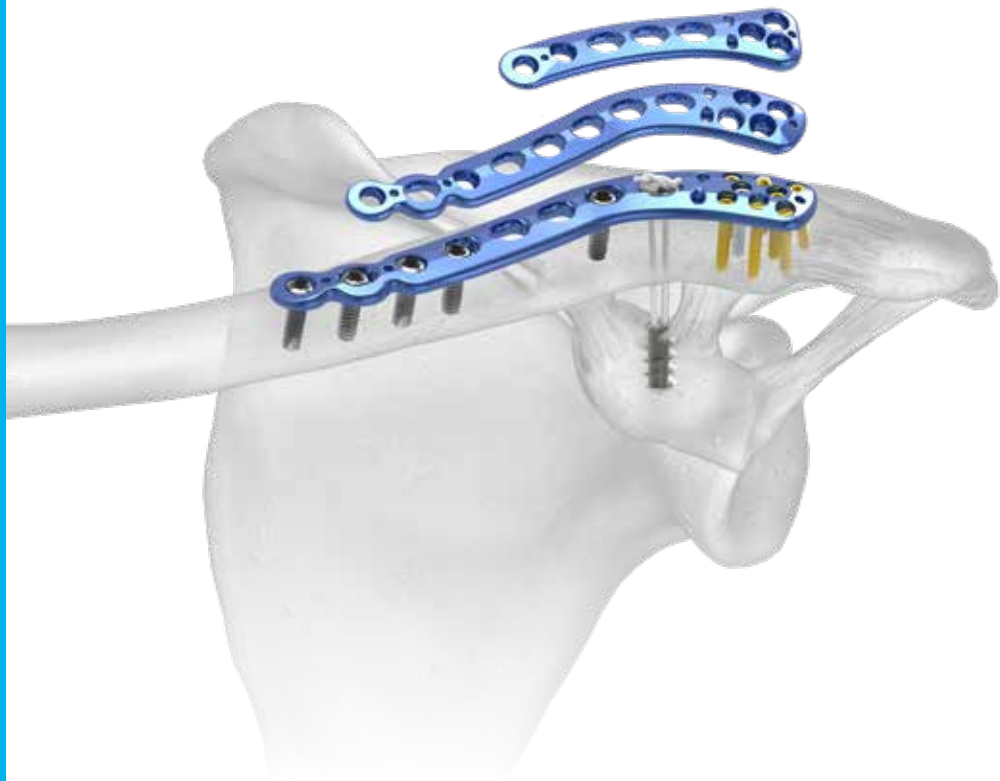
- Acumed
- DePuy Synthes
- Stryker
- Zimmer Biomet
- Wright Medical
- Smith & Nephew
- Arthrex
- Medartis
- Skeletal Dynamics
- KLS Martin
- MedXpert

For more information:
go.acumed.net/ShoulderGirdle
888.627.9957

Distal Clavicle Fractures, Acromioclavicular (AC) and Coracoclavicular (CC) Repair

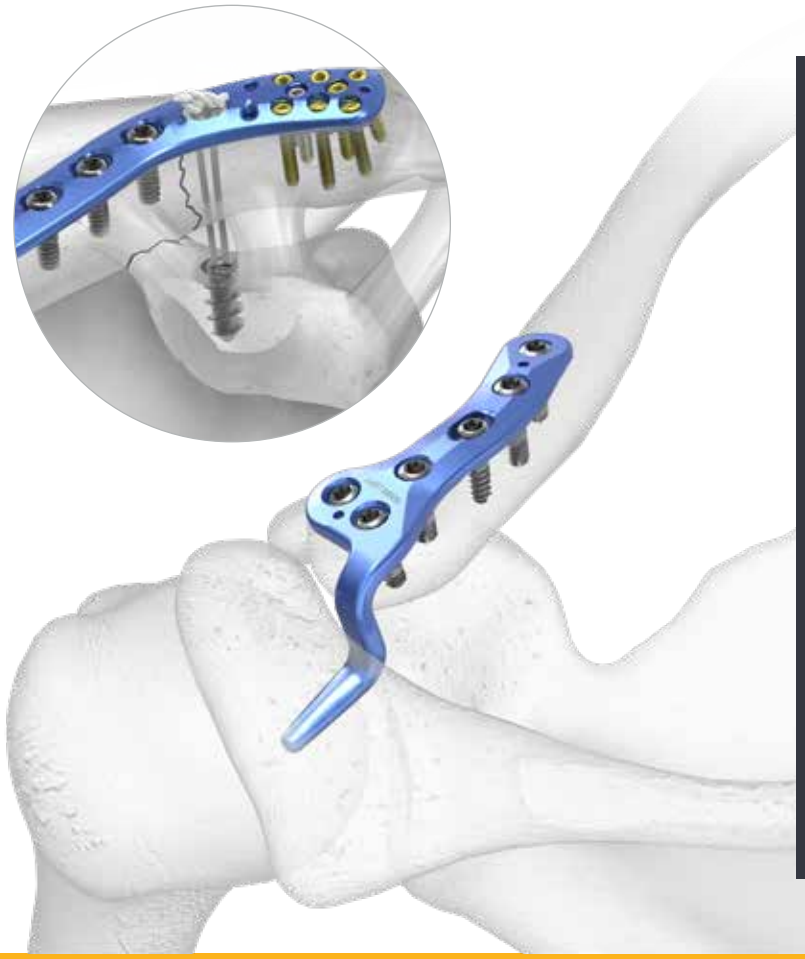
Distal Third Clavicle Injuries
These injuries account for 15% of all clavicle fractures.[1] Acumed offers plating options in a variety of lengths, contours, and screw diameters.

When a coracoclavicular injury is present, the Acu-Sinch® suture anchor may be used in conjunction with the clavicle plates to aid in repairing the joint.



An Industry First

Clavicle Plating System
Debuted in 2003, Acumed's was the first system to offer precontoured plates for the clavicle.



Distal Clavicle Fractures & AC & CC Solutions

- Clavicle Plating System
  - Superior Distal Plates
    - Range: 64–140 mm length
    - Distal screw options: four plates accept 3.5 mm / 3.0 mm screws, and two plates accept the smaller 2.3 mm option
  - Anterior Plates
    - Range: 75–115 mm length
    - Screw options: 3.0 mm & 3.5 mm locking and nonlocking screws
- Clavicle Hook Plating System
  - Range: 69–111 mm length 12–20 mm hook depth
  - Screw options: 3.5 mm locking and nonlocking screws
- Acu-Sinch® Repair System
  - Used in conjunction with Acumed Superior Midshaft or Distal Clavicle Plate to aid in the repair of clavicle fractures

Specialty Instrumentation

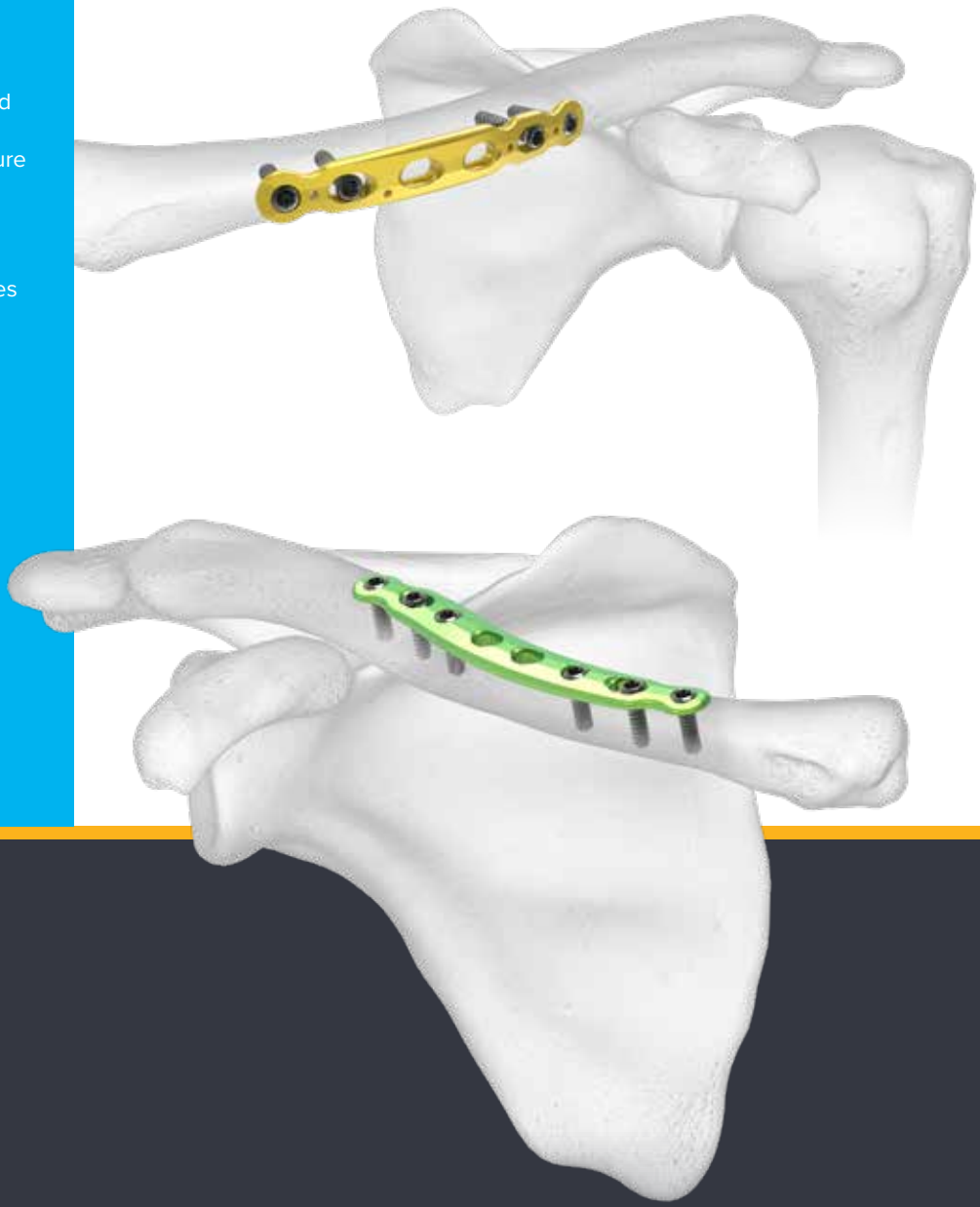
Innovative Plate Selection Instrumentation
Both hook depth and plate length can be accurately measured with the Plate Depth Sizer and Plate Length Sizer included in the system. The included locking drill guide may also act as a handle for in situ positioning.

Midshaft Clavicle Fractures

Middle Third Clavicle Fractures

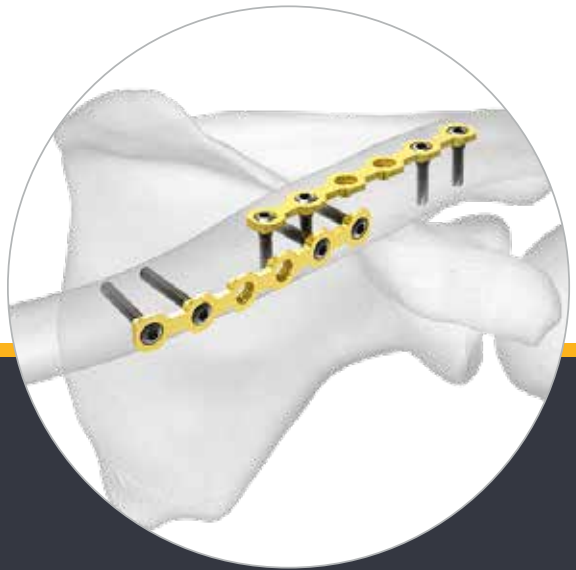
Because 80% of all clavicle fractures occur in the diaphyseal region[1] Acumed offers dozens of precontoured plating options to accommodate varying fracture patterns and anatomies.

Superior and anterior anatomic plates are offered in varying contours and lengths, as well as small fragment plates for single and dual-plating capabilities.



Dual-Trak Screw System

For use when an intramedullary device is needed, the Dual-Trak screw can achieve up to 3 mm of compression, and is available in several lengths and diameters.



Midshaft Clavicle Solutions

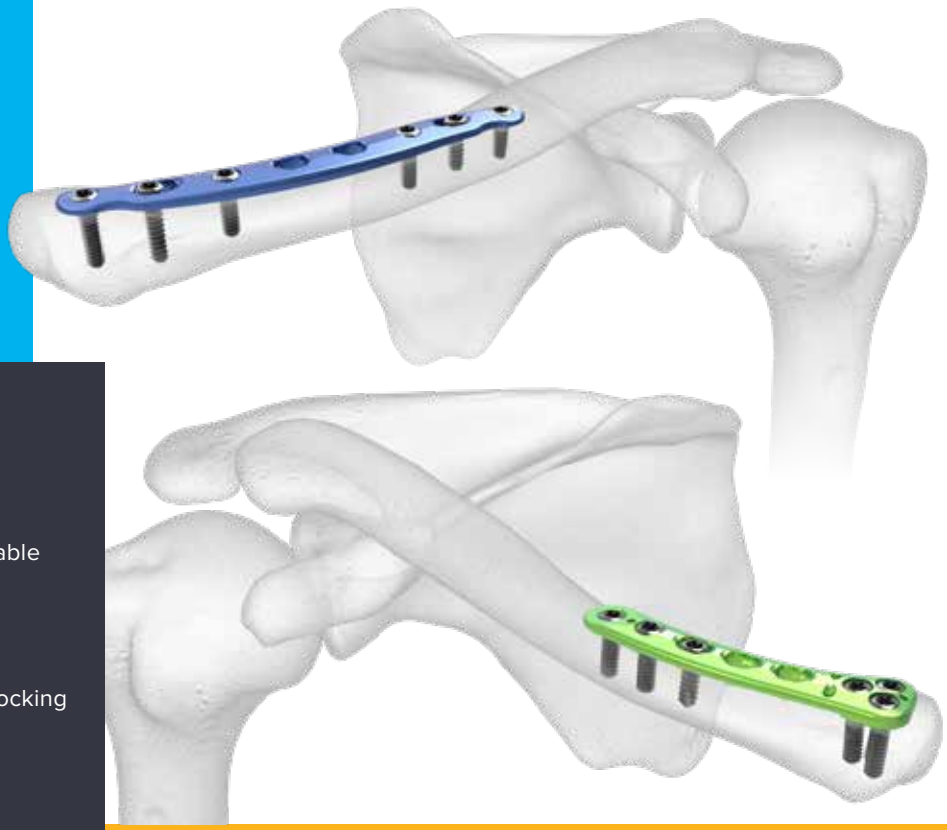
- Clavicle Plating System
  - Anterior Plates
    - Range: 75–115 mm length
    - Screw options: 3.0 mm & 3.5 mm locking and nonlocking screws
  - Superior Midshaft Plates
    Narrow and Low-profile options
    - Range: 74–121 mm length
    - Screw options: 3.0 mm & 3.5 mm locking and nonlocking screws
- Dual-Trak Screw System
  - Range: 80–120 mm length
  - Diameter 3.0 & 3.8 mm
- Small Fragment Base Set
  - 2.7 mm Fragment Plates
    - Range: 60 mm maximum, can be cut to desired length
    - Screw options: 2.7 mm locking and nonlocking screws
  - 1/3 Tubular Plates
    - Range: 37–145 mm length 3–12 holes
    - Screw options: 3.5 mm nonlocking screws

Medial Clavicle Fractures

Medial Third Clavicle Injuries

Accounting for only 5% of all clavicle fractures[1] medial clavicle injuries are often associated with dislocations and/or sternoclavicular disruptions.

In cases where conservative treatment is not an option, Acumed's diverse offering of plates and screw diameters may be a viable option for these often challenging injuries.



Medial Clavicle Plating Solutions

- Clavicle Plating System
  - Superior Plates: Low-profile J-Plates: 8-hole option available Narrow and Low-profile Midshaft Plates:
    - Range: 74–121 mm
    - Screw options: 3.0 mm & 3.5 mm locking and nonlocking screws
  - Anterior Plates
    - Range: 75–115 mm
    - Screw options: 3.0 mm & 3.5 mm locking and nonlocking screws
- Small Fragment Base Set
  - 2.7 mm Fragment Plates
    - Range: 60 mm maximum, can be cut to desired length
    - Screw options: 2.7 mm locking and nonlocking screws
  - 1/3 Tubular Plates
    - Range: 37–145 mm length 3–12 holes
    - Screw options: 3.5 mm nonlocking screws

Amniotic Membranes

- Used as a covering for reconstructive procedures
- Offer protection from surrounding environment

OsteoMed product

OSTEOMED

Scapula Fractures

Scapula Plating System

Scapular fractures are rare, but can be complex to treat. The Acumed Scapula Plating System includes precontoured plates intended to minimze the need for intraoperative plate bending, to help save operating time and allow the surgeon to focus on restoring scapular anatomy.

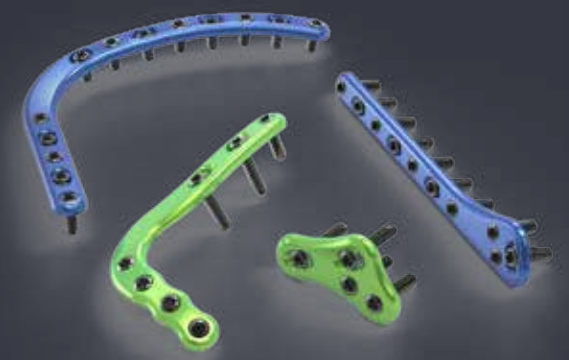
Scapula Solutions

- Scapula Plating System
  - Intra-articular Glenoid Plates
  - Lateral Border Plates
  - Acromion Plates
  - Medial Border Plates
  - Screw options: 3.0 mm, 2.7 mm, and 3.5 mm screws

An Industry First

INDUSTRY 1st

Scapula Plating System
Launched in 2007, Acumed's Scapula Plating System introduced the first precontoured plates designed specifically for treating scapula fractures.



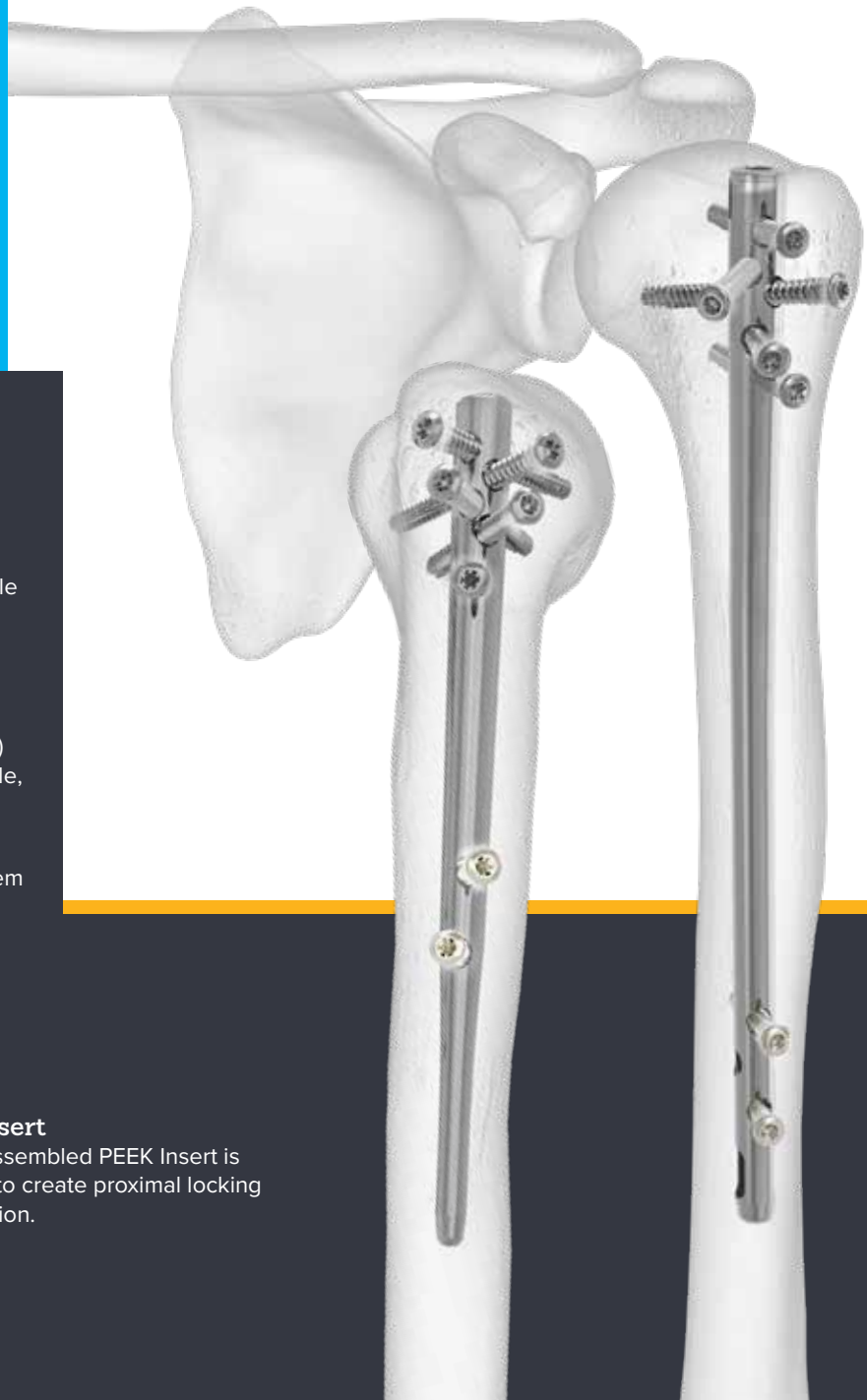
Proximal Humerus Fractures

Proximal Humeral Fractures

The Acumed Polarus® 3 Solution is a comprehensive system designed to treat proximal humerus fractures with an array of plate and nail options. The system introduces a number of improvements to both the implants and the instrumentation when compared to prior generations.

Proximal Humerus Fracture Solutions

- Polarus 3 Nails
  - Proximal and Long Nails 150–280 mm length
  - Screw options: 3.5 mm low-profile nonlocking, 4.3 mm low-profile screws
- Polarus 3 Plates
  - Standard and Posterior options
  - Range: 4–22 holes (94–275 mm)
  - Screw options: 4.3 mm low-profile, 3.5 mm nonlocking low-profile screws
- 6.5/7.3 mm Cannulated Screw System



Polarus 3 Nails

PEEK Insert
The pre-assembled PEEK Insert is designed to create proximal locking screw friction.

An Industry First

Polarus® 3 Solution
Offers plate and nail in the same system for shoulder fracture fixation.

Bone Void Fillers

OsteoMed product

OSTEOMED

Magnesium Phosphate Bone Void Filler

- Enhanced remodeling – 80% in 26 weeks
- Moldable or Injectable, delivery and mixing options

Distributed by Acumed

Vivorté Trabexus®

Osteoinductive Calcium Phosphate Bone Void Filler

- Induces recruitment of bone forming cells to the implant site**
- Can be placed manually or extruded through the cannula provided
- Isothermically sets at 15 minutes

Distributed by Acumed

Vivorté Fortera®

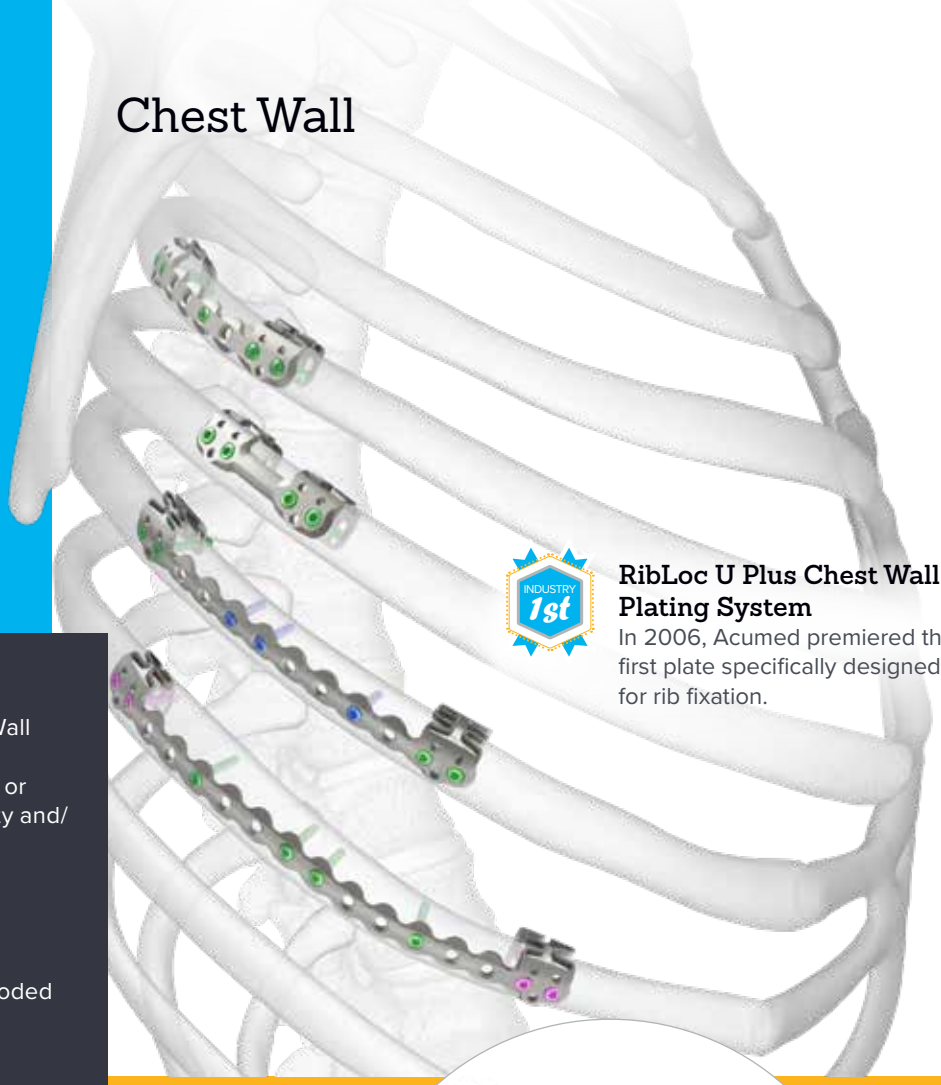
Osteoconductive Calcium Phosphate Bone Void Filler

- Injectable through a 16G cannula
- Six minutes of handling time after mixing
- Isothermically sets at 15 minutes

Chest Wall

RibLoc® U Plus Chest Wall Plating System

- Custom fit with compressible U-clips to match the rib thickness
- Most comprehensive system, offering patent U-plates and straight plates in one system
- Anterior and posterior screw locking fixation
- Offers low-profile and 90° instrumentation, allowing access under the scapula or minimally invasive procedures



INDUSTRY 1st

RibLoc U Plus Chest Wall Plating System
In 2006, Acumed premiered the first plate specifically designed for rib fixation.

Chest Wall Solutions

- BioBridge® Resorbable Chest Wall Stabilization Plate
  - Flexible and can be stacked or trimmed for increased rigidity and/or length
- RibLoc U Plus Plates
  - U-shaped plates
    - 50, 75, 115, 155, and 215 mm length
    - 2.7 mm bicortical color-coded screws, 6, 8, 10, 12, and 14 mm lengths

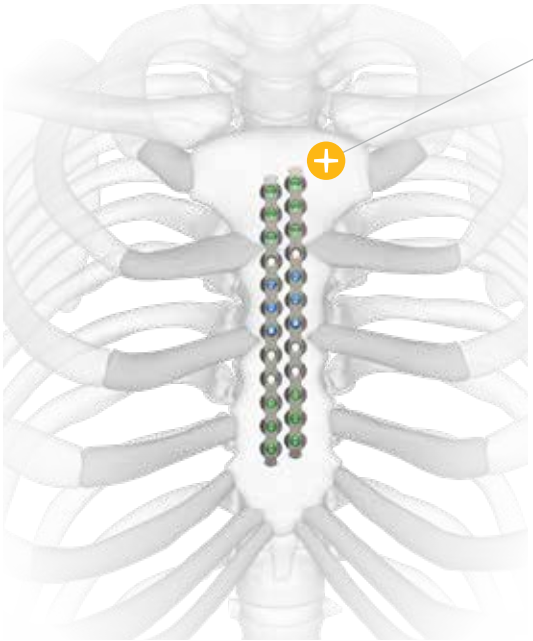
U-plate Technology

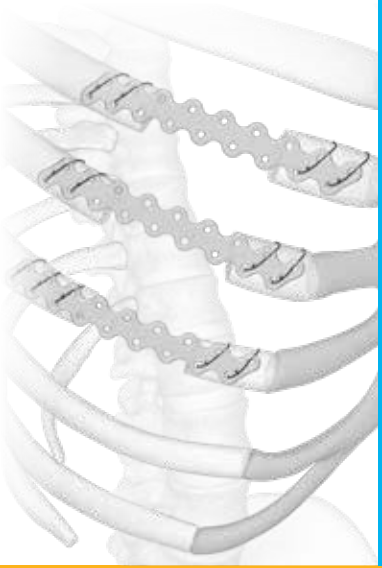
Plates are designed to sit on the superior aspect of the rib, avoiding the neurovascular bundle.[1]

Anterior and Posterior Locking

The U-clips are designed to minimize stress on the rib by distributing physiologic loads over a greater surface area. Once the screws are engaged and fixed to the cortices of the bone, the plate locks both anteriorly and posteriorly.

Sternum Fracture Fixation





Straight Plate Solutions

The straight plate offers fixation for transverse sternal fractures.

Chest Wall Reconstruction

The reconstruction technique[2] using BioBridge provides long-term chest wall stability through bone healing and/or soft tissue scarring.

BioBridge Solution

- Osteotomy stabilization
- Costochondral junction repair
- Chest wall reconstruction
- Pectus repair

BioBridge® Resorbable Chest Wall Stabilization Plate

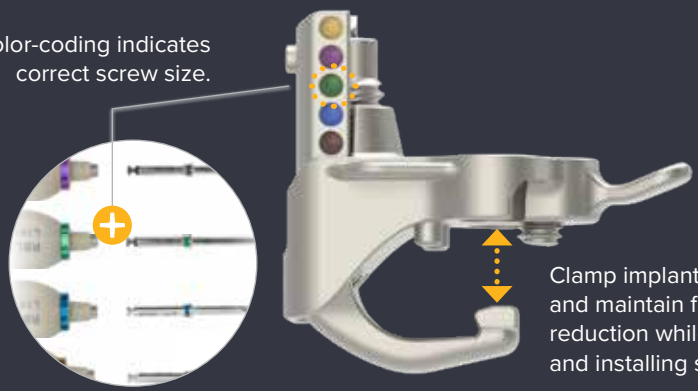
In 2008, Acumed was the first company to distribute a resorbable plate for rib fixation.

1. Data on file at Acumed
2. BioBridge Resorbable Chest Wall Stabilization Plate Chest Wall Reconstruction Surgical Technique (RRP7120)

Specialty Instrumentation

The U Plus 90 Instrumentation System

The system provides a comprehensive solution to plating ribs in limited-access locations. The low-profile and 90° instrumentation facilitates fixation of subscapular, posterior, and anterolateral fractures through minimally invasive approaches.



Clavicle Plating System

Comparative Analysis of Functional Outcome of Anatomical Precontoured Locking Plate Versus Reconstruction Plate in the Management of Displaced Midshaft Clavicular Fractures

View Original Article

Featuring

Publication Excerpt

"(S)urgical management of fresh middle third clavicle fractures with anatomical precontoured locking plate provided stable fixation, faster union, less number of plate-related complications, and better functional outcomes compared with the reconstruction plating."

Reference

Kingsly P, Sathish M, Ismail NDM. Comparative analysis of functional outcome of anatomical precontoured locking plate versus reconstruction plate in the management of displaced midshaft clavicular fractures. *J Orthop Surg (Hong Kong).* 2019 Jan-Apr;27(1):2309499018820351.

Nonoperative Treatment Compared With Plate Fixation of Displaced Midshaft Clavicular Fractures

View Original Article

Publication Excerpt

"Operative fixation of a displaced fracture of the clavicular shaft results in improved functional outcome and a lower rate of malunion and nonunion compared with nonoperative treatment at one year of follow-up. Hardware removal remains the most common reason for repeat intervention in the operative group. This study supports primary plate fixation of completely displaced midshaft clavicular fractures in active adult patients."

Reference

Altamimi S, McKee M, and the Canadian Orthopaedic Trauma Society. Nonoperative treatment compared with plate fixation of displaced midshaft clavicular fractures. *J Bone Joint Surg Am*. 2008;90:1-8.

Evaluation of Prominence of Straight Plates and Precontoured Clavicle Plates Using Automated Plate-to-Bone Alignment

View Original Article

Featuring

Publication Excerpt

"There are significant[ly] more bad fits with the straight plates compared to the precontoured plates in group A ($p < 0.001$), B ($p = 0.004$) and C ($p < 0.001$). There is no statistical difference between the number of bad fits between precontoured plates in group A ($p = 1.000$) and C ($p = 0.695$)."

Reference

Van Tongel A, Huysmans T, Amit B, Sijbers J, Vanglabbeek F, De Wilde L. Evaluation of prominence of straight plates and precontoured clavicle plates using automated plate-to-bone alignment. *Acta Ortho Belgica*. 2014;80:301-308.

Acu-Sinch® Repair System

Addition of a Suture Anchor for Coracoclavicular Fixation to a Superior Locking Plate Improves Stability of Type IIB Distal Clavicle Fractures

View Original Article

Publication Excerpt

"CC fixation adds stability to type IIB distal clavicle fractures fixed with plate and screws when loaded to failure."

Reference

Madsen W, Yaseen Z, LaFrance R, Chen T, Awad H, Maloney M, Voloshin I. Addition of a suture anchor for coracoclavicular fixation to a superior locking plate improves stability of Type IIB distal clavicle fractures. *Arthroscopy: J Arthro Relat Surg.* 2013;29(6):998-1004.

Comparison of Treatment of Acute Unstable Distal Clavicle Fractures Using Anatomical Locking Plates With Versus Without Additional Suture Anchor Fixation

View Original Article

Publication Excerpt

"...use of an anatomical locking plate with CC augmentation has better functional and radiographic outcomes than treatment without CC augmentation. Therefore, a combination of anatomical locking plate and CC ligament augmentation is a reliable treatment option for unstable distal clavicle fractures."

Reference

Fan J, Zhang Y, Huang Q, Jiang X, He L. Comparison of treatment of acute unstable distal clavicle fractures using anatomical locking plates with versus without additional suture anchor fixation. *Med Sci Monit.* 2017;23:5455-5461.

RibLoc® U Plus Chest Wall Plating System

Biomechanical Testing of a Novel, Minimally Invasive Rib Fracture Plating System

View Original Article

Publication Excerpt

"Even though the U-plate is less than half the length of the standard anterior plate and is secured to the rib with 4 as opposed to 6 locking screws, it was more durable than anterior plate in a simulation of repetitive deep breathing. This finding is relevant because the loss of stiffness correlates with motion at the screw and bone interface that could lead to screw pullout and fixation failure."

Reference

Sales JR, Ellis TJ, Gillard J, Liu Q. Chen JC, Ham B, Mayberry JC. Biomechanical testing of a novel, minimally invasive rib fracture plating system. *J Trauma.* 2008; 64:1270-1274.

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SHD10-11-B | Effective: 2021/08 |

*Competitive data on file with Acumed. GEN00-30-B; 2020.

1. Data on file at Acumed

GFS-00121-01 Data on file at Vivorte

** Allograft component demonstrated osteoinductivity in athymic mouse model submitted for 510(k). Refer to 510(k) summary K143547. Data on file at Vivorte, Inc.