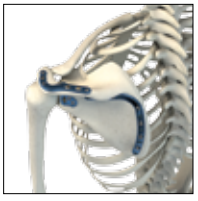
ACUMED®

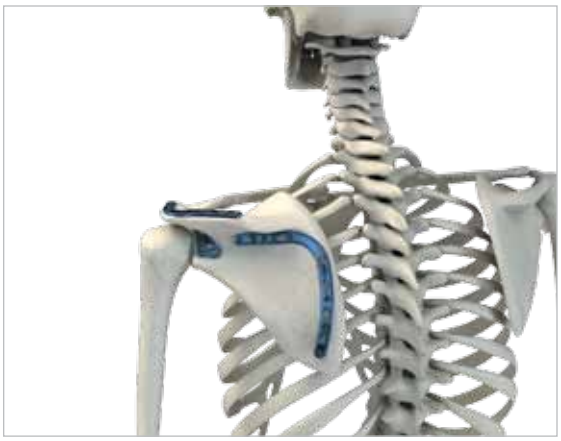


Scapula Plating System

Scapula Plating System

Acumed® is a global leader of innovative orthopaedic and medical solutions.

We are dedicated to developing products, service methods and approaches that improve patient care.



Scapular fractures are rare, but present significant challenges for fixation. The anatomically precontoured Acumed® Scapula Plates eliminate the time-intensive process of hand-contouring generic bone plates which can also reduce the strength of the plate. Additionally, fragment reduction and reconstruction is laborious without an anatomical guide and screw placement is difficult in the questionable osseous regions of the scapular bone.

Acumed® offers a better solution. While scapula fractures are often treated nonoperatively, there are a number of displaced fractures in which Open Reduction Internal Fixation with a low profile, anatomic locking plate can be a better solution.

Designed in conjunction with William B. Geissler M.D., the pre-contoured Scapula Plating System is designed to fit the specific anatomy of the scapula, allowing for better restoration of the functional angle of the shoulder joint. The anatomical plates typically don't require any bending and can act as a guide to reduce fragments and fractures by closely matching the geometry of the patient's anatomy. Because the plate system is designed to take advantage of the best available bone quality in the scapula, there is no guesswork on screw placement and a greatly reduced probability of additional surgery.

Contents

Scapula Plating System Features

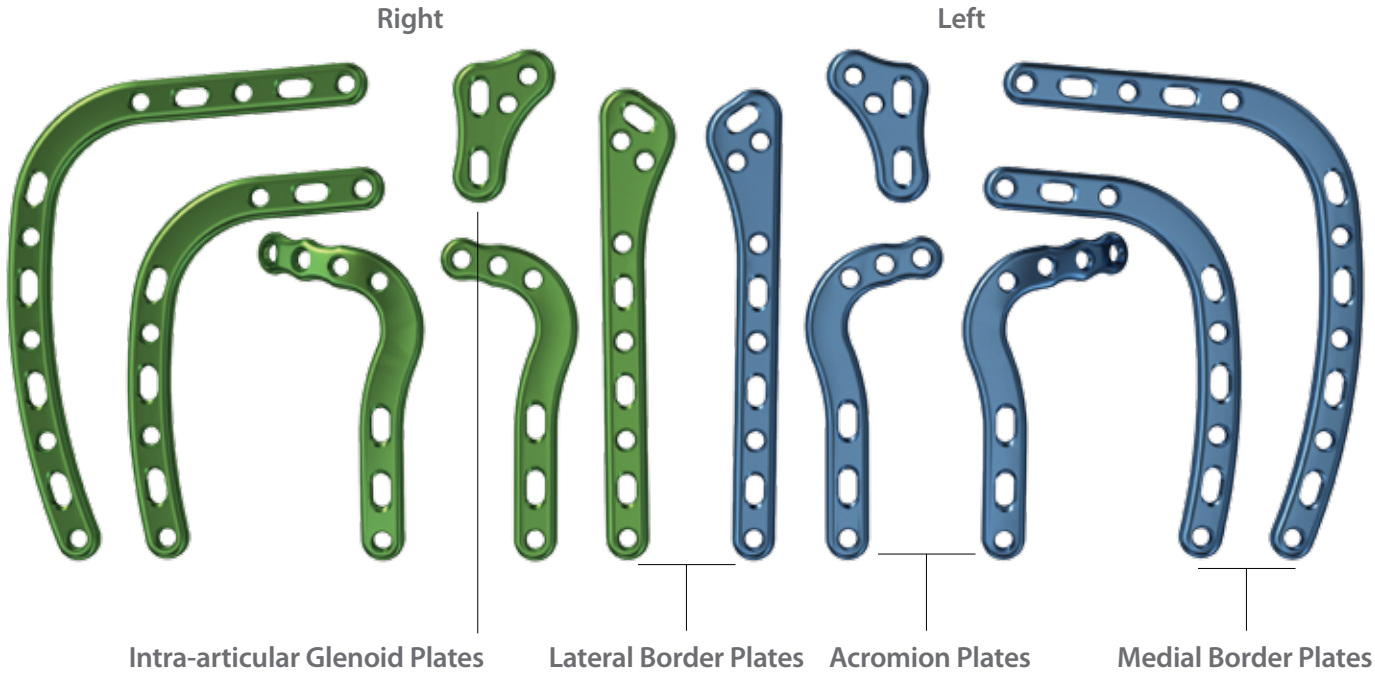
- Little to no bending is required due to the pre-contoured plate geometry that matches patient anatomy. The Scapula Plating System also acts as a template for restoring the patient's original anatomy when reconstructing a severely displaced fracture, a significant advantage over traditional straight plates.

- Multiple plate options are available to fit the anatomic variety of scapula curvatures. The Medial and Lateral Border Plates are frequently used for displaced scapula body and glenoid neck fractures. The Glenoid Plate may be selected for displaced intra-articular glenoid fractures. The Acromion Plates are utilized for fractures along the acromion of the scapula spine.

- Optimal implant placement and screw fixation to osseous regions of superior thickness. Regions of superior scapula thickness suitable for internal fixation are located near the glenoid fossa, the medial and lateral border, the acromion, and the scapula spine.

Indications

- Scapular Body Fractures
- Glenoid Neck Fractures
- Intra-articular Glenoid Fractures
- Scapula Spine Fractures
- Acromion Fractures
- Os Acromiale



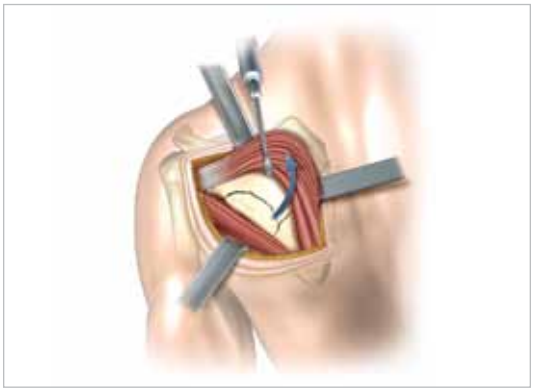
Medial | Lateral Surgical Border Technique

1 PATIENT POSITIONING

The patient may be positioned in either the lateral decubitus position or prone with the upper extremity draped free in the operative field. This allows for manipulation of the upper extremity to aid with fracture reduction.

2 INCISION

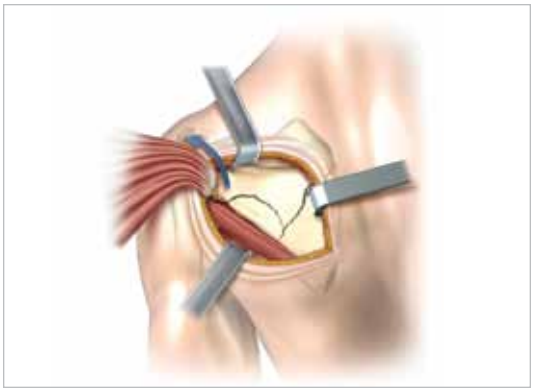
The skin incision is made from the base of the acromion along the inferior margin of the scapula spine to the medial scapula border, then curved inferiorly to the inferior angle of the scapula. The dorsal fascia is then released along the lower edge of the scapula spine and the base of the acromion to improve visualization of the lateral scapula margin and neck of the scapula.



3 DISSECTION

Start medially, the muscle-belly of the infraspinatus and teres minor may be elevated from the posterior aspect of the scapula, dissecting from medial to lateral with the periosteal elevator (MS-46212). As one elevates the infraspinatus working from medial to lateral, the neurovascular bundle will be seen undersurface of the infraspinatus. It lifts up easily within the muscle of the infraspinatus and is easily identified.

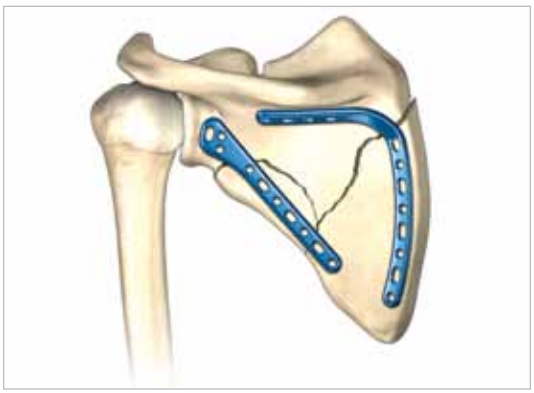
Note: Occasionally the neurovascular bundle may lay within the fracture line of the glenoid neck fracture. If this occurs it is easily seen and the neurovascular bundle is dissected from the fracture.



4 EXPOSURE

The inferior face of the scapula spine and body are then easily visualized. It is helpful to place a Hohmann retractor around the lateral border of the scapula to facilitate exposure. The medial scapula margins are approximately 10-14 mm thick, and provide very dense cortical bone which allows for good purchase with internal fixation. A retractor may be placed along the muscle-belly of the infraspinatus to help with exposure. The traction of this elevator should be periodically taken off to avoid a traction palsy to the neurovascular bundle.

5 PLATE SELECTION

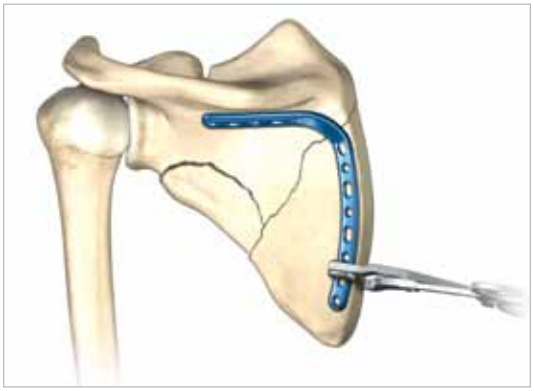


For fractures of the scapula body, both the Medial and Lateral Border Plates are used to stabilize the fracture. These plates may be used in conjunction with one another or independently.

The Medial Border Plate fits along the medial border of the scapula and under the surface of the spine. The plate can be utilized to help reduce the fracture back to the plate in cases where the scapular body fracture is displaced. The appropriately sized left or right plate(s) are selected from the two different lengths provided. Usually the larger 13-hole plates are ideal for most males and the 9-hole plates are best for smaller patients.

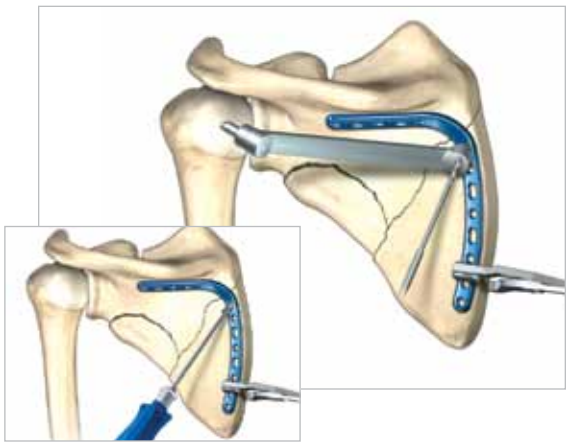
The Lateral Border Plate is useful for fractures involving the lateral border and glenoid neck. The plate is placed along the lateral border and extends proximally over the glenoid neck.

6 PLATE PLACEMENT: MEDIAL BORDER



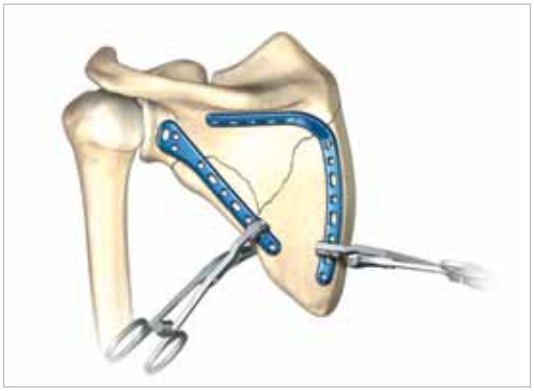
First, place the Medial Border Plate. The most lateral portion of the plate extends laterally to help stabilize glenoid neck fractures. The plate should fit along the base of the spine and down the medial border of the scapula. The plate may be utilized as a template to help facilitate reduction of the body of the scapula to the spine. Occasionally, the inferior portion of the plate needs to be bent slightly anteriorly to conform to the interior angle of the scapula. Fracture fragments may be manipulated directly by manipulation of the upper extremity which has been draped free or by removing small fracture fragments from within the scapula and dissection anterior to the scapula.

Once the plate's ideal position has been selected, it is provisionally fixed to the scapula with one of the three instruments provided: plate clamps [80-0223], plate tacks [PL-PTACK], and/or reduction forceps with serrated jaw [PL-CL04].



7 NONLOCKING SCREW INSERTION: MEDIAL BORDER

The nonlocking screws may be placed unicortically or bicortically. If bicortical screws are used, it is important to not over-penetrate the far cortex and potentially risk injury. Although 3.5 mm screws (CO-3XX0) are recommended, optional 2.7 mm (CO-27XX) and 4.0 mm (CA-4XX0) screws are available in the system. Using the appropriate drill size (MS-DC5020, MS-DC28, or MS-DC35) and the offset drill guide (PL-2095), drill, measure for depth with the depth gauge (MS-9022) and place the screws into the slots with the assembled driver. One screw should be placed along the base of the scapula spine and another along the medial border. Once the two screws are installed, the bone clamps and/or plate tacks may be removed.



8 PLATE PLACEMENT: LATERAL BORDER

With the medial border provisionally placed, the Lateral Border Plate is now selected. Similar to the Medial Border Plate, the most inferior portion of the plate may need to be bent slightly anteriorly to conform to the inferior angle of the scapula. Once the plate's ideal position has been selected it is provisionally fixed to the scapula with one of the three instruments provided: plate clamps [80-0223], plate tacks [PL-PTACK], and/or reduction forceps with serrated jaw [PL-CL04]. The fracture fragments may be manipulated by direct manipulation of the upper extremity which has been draped free or, again, by removing small fracture fragments from the center of the scapula and dissection anterior of the scapula.

9 NONLOCKING SCREW INSERTION: LATERAL BORDER

The nonlocking screws may be placed unicortically or bicortically. If bicortical screws are used, it is important to not over-penetrate the distal cortex and potentially risk injury. Although 3.5 mm screws (CO-3XX0) are recommended, optional 2.7 mm (CO-27XX) and 4.0 mm (CA-4XX0) screws are available in the system. One screw should be placed in a slot along the lateral border, while another is placed in the slot located over the glenoid. Once the two screws are installed, the bone clamps and/or plate tacks may be removed.

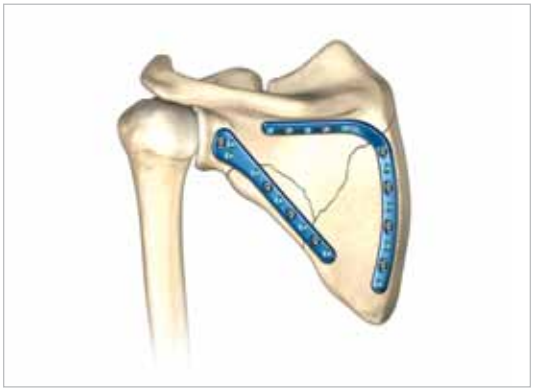
10 LOCKING SCREW INSERTION

Using the locking drill guide (MS-LDG35) and the 2.8 mm drill (MS-DC28), place the 3.5 mm locking screws (COL-3XX0) into the threaded holes so that there are at least three screws total (if possible) on each side of the fracture.

Note: When placing the locking screws in the glenoid portion of the Lateral Border Plate, tapping (MS-LTT35) is recommended for patients with dense bone. The drill guide (MS-LDG35) must be removed prior to tapping.

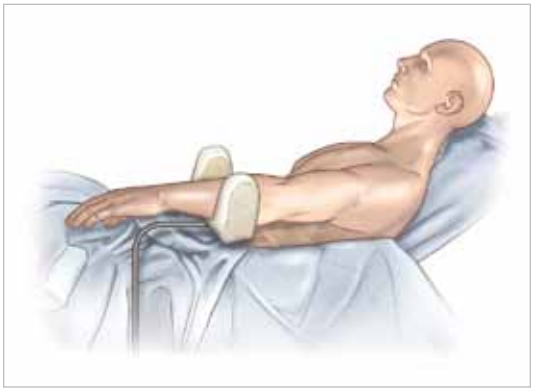
11 FINAL ASSESSMENT

An intraoperative radiograph is recommended to check the position of the screws and the final reduction of the fracture. The musculature is then re-approximated directly over the plate. The skin is then closed in layers with a subcuticular stitch for the remaining skin layer.



12 POST-OP PROTOCOL

The patient is placed in an arm sling and starts pendulum range of motion exercises. Passive motion exercises are initiated from the first four weeks, active assisted from four to six weeks, and active strengthening is initiated at six weeks post operatively once healing is seen radiographically.



1 PATIENT POSITIONING

The patient may be placed either in a beach chair position with a bump under the scapula or the lateral decubitus position to expose fractures of the scapula, spine and acromion. The involved upper extremity is prepped and draped free to help manipulate the fracture fragments for reduction.

2 EXPOSURE

A horizontal incision is made directly over the palpable spine and then curved anteriorly over the acromion. Dissection is sharply carried down to the fascia where the skin flaps are elevated. The origin of the trapezium and deltoid may then be subperiosteally dissected to expose the fracture of the base of the spine and/or acromion.

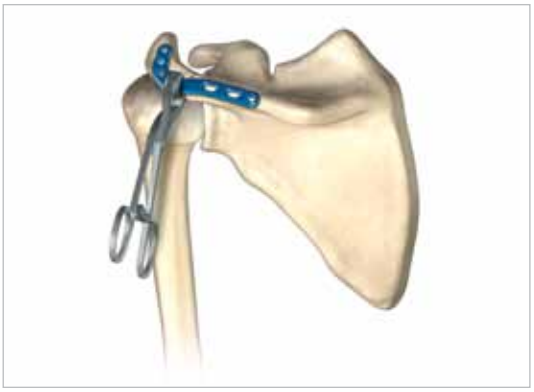
3 PLATE SELECTION

The appropriate left or right Acromion Plate is selected from the system. For traditional fractures where the fracture line is at the base of the acromion to the spine, the 6-hole plate is utilized. In instances where the fracture extends distally into the acromion, the longer 7-hole plate may be a better option. The plate is placed on the superior surface to stabilize the fractures of the acromion and/or scapula spine. In the case of a non-union or malunion the curve of the plate can assist in the anatomic reduction of the acromion.

4 PLATE PLACEMENT

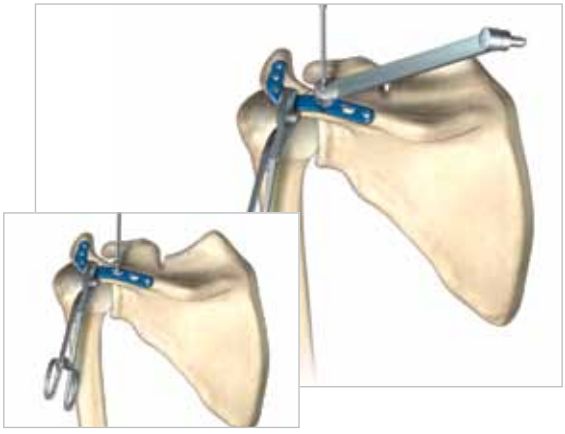
Once the plate's ideal positioning has been selected, it is provisionally stabilized to the acromion and/or scapula spine with one of the three instruments provided: plate clamps [80-0223], plate tacks [PL-PTACK], and/or reduction forceps with serrated jaw [PL-CL04].

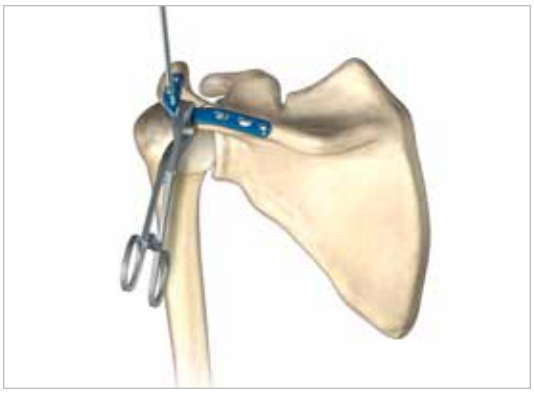
Note: The plate may be filled with locking or nonlocking screws depending on the surgeon's preference.



5 NONLOCKING SCREW INSERTION

The nonlocking screws may be placed unicortically or bicortically. If bicortical screws are used, it is important to not over-penetrate the distal cortex and potentially risk injury to the rotator cuff. Although 3.5 mm screws (CO-3XX0) are recommended, optional 2.7 mm (CO-27XX) and 4.0 mm (CA-4XX0) screws are available in the system. Using the appropriate drill size (MS-DC5020, MS-DC28, or MS-DC35) and the offset drill guide (PL-2095), drill, measure for depth with the depth gauge (MS-9022) and place the screws into the slots with the assembled driver. Once the two screws are installed, the bone clamp(s) may be removed.





6 LOCKING SCREW INSERTION

Using the locking drill guide (MS-LDG35) and the 2.8 mm drill (MS-DC28), place the 3.5 mm locking screws (COL-3XX0) into the threaded holes so that there are at least three screws total (if possible) on each side of the fracture.

7 FINAL ASSESSMENT

An intraoperative radiograph is recommended to check the position of the screws and the final reduction of the fracture. The musculature is then re-approximated directly over the plate. The skin is then closed in layers with a subcuticular stitch for the remaining skin layer.

8 POST-OP PROTOCOL

The patient is placed in an arm sling and starts pendulum range of motion exercises. Passive motion exercises are initiated from the first four weeks, active assisted from four to six weeks and active strengthening is initiated at six weeks post operatively once healing is seen radiographically.

1 PATIENT POSITIONING

The patient is placed in the lateral decubitus position and the involved upper extremity is draped out to help facilitate reduction of the fracture fragments.

2 INCISION

A vertical incision is made from the scapula spine over the glenohumeral joint. The deltoid origin is then teed off the scapula spine and split. Be careful not to extend the incision too distal and affect the axillary nerve. Alternatively, a horizontal incision is made over the spine and the deltoid is released.

3 DISSECTION

Blunt dissection is then continued between the infraspinatus and teres minor muscles. This plane may be difficult to define initially. The infraspinatus muscle is retracted superiorly and the teres minor muscle is retracted inferiorly to expose the posterior regions of the glenoid cavity in the neck of the scapula.

4 EXPOSURE

The posterior capsule is then opened in a "T" fashion. An incision is made vertically from the humeral head to the glenoid, and then the incision is carried proximally and distally along the glenoid neck to expose the intra-articular fracture.

5 PLATE SELECTION AND PLACEMENT

The appropriate left or right Glenoid Plate is selected from the system. The plate is placed on the superior surface to stabilize fractures of the posterior margin of the glenoid and any intra-articular fragments.

Once the plate's ideal position has been selected, it is provisionally stabilized to the glenoid with one of the three instruments provided: plate clamps [80-0223], plate tacks [PL-PTACK], and/or reduction forceps with serrated jaw [PL-CL04]. The plate may be filled with locking or nonlocking screws depending on the surgeon's preference.

6 NONLOCKING SCREW INSERTION

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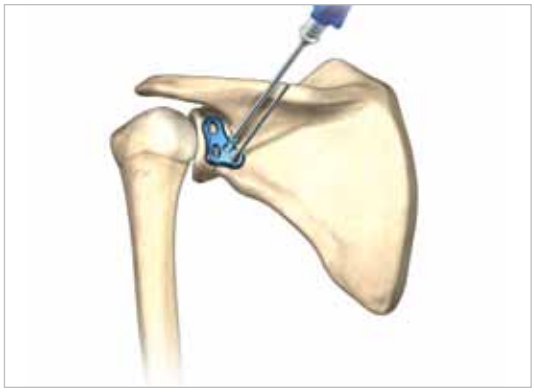
7 LOCKING SCREW INSERTION

Using the locking drill guide (MS-LDG35) and the 2.8 mm drill (MS-DC28), place the 3.5 mm locking screws (COL-3XX0) into the threaded holes.

Note: Tapping (MS-LTT35) is recommended for patients with dense bone. The drill guide (MS-LDG35) must be removed prior to tapping.



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9 POST-OP PROTOCOL

The patient is placed in an arm sling and starts pendulum range of motion exercises. Passive motion exercises are initiated from the first four weeks, active assisted from four to six weeks, and active strengthening is initiated at six weeks post operatively, once healing is seen radiographically.

Ordering Information

Scapula Plates

4-Hole Scapula Glenoid Plate, Left	PL-SG04L
4-Hole Scapula Glenoid Plate, Right	PL-SG04R
6-Hole Scapula Acromion Plate, Left	PL-SA06L
6-Hole Scapula Acromion Plate, Right	PL-SA06R
7-Hole Scapula Acromion Plate, Left	PL-SA07L
7-Hole Scapula Acromion Plate, Right	PL-SA07R
10-Hole Scapula Lateral Border Plate, Left	PL-SLB10L
10-Hole Scapula Lateral Border Plate, Right	PL-SLB10R
9-Hole Scapula Medial Border Plate, Left	PL-SMB09L
9-Hole Scapula Medial Border Plate, Right	PL-SMB09R
13-Hole Scapula Medial Border Plate, Left	PL-SMB13L
13-Hole Scapula Medial Border Plate, Right	PL-SMB13R

Scapula Plate Insert Assembly

Universal Tray Scapula Plate Tray Insert Assembly	80-0135
Universal Tray Scapula Plate Insert Base	80-0136
Universal Tray Scapula Plate Insert Lid	80-0137

2.7 mm Nonlocking Screws

2.7 mm x 8.0 mm Cortical Screw	CO-2708
2.7 mm x 10.0 mm Cortical Screw	CO-2710
2.7 mm x 12.0 mm Cortical Screw	CO-2712
2.7 mm x 14.0 mm Cortical Screw	CO-2714
2.7 mm x 16.0 mm Cortical Screw	CO-2716
2.7 mm x 18.0 mm Cortical Screw	CO-2718
2.7 mm x 20.0 mm Cortical Screw	CO-2720
2.7 mm x 22.0 mm Cortical Screw	CO-2722
2.7 mm x 24.0 mm Cortical Screw	CO-2724
2.7 mm x 26.0 mm Cortical Screw	CO-2726
2.7 mm x 28.0 mm Cortical Screw	CO-2728
2.7 mm x 30.0 mm Cortical Screw	CO-2730
2.7 mm x 32.0 mm Cortical Screw	CO-2732
2.7 mm x 34.0 mm Cortical Screw	CO-2734
2.7 mm x 36.0 mm Cortical Screw	CO-2736
2.7 mm x 38.0 mm Cortical Screw	CO-2738
2.7 mm x 40.0 mm Cortical Screw	CO-2740
2.7 mm x 45.0 mm Cortical Screw	CO-2745
2.7 mm x 50.0 mm Cortical Screw	CO-2750
2.7 mm x 55.0 mm Cortical Screw	CO-2755
2.7 mm x 60.0 mm Cortical Screw	CO-2760
2.7 mm x 65.0 mm Cortical Screw	CO-2765

2.7 mm Locking Screws

2.7 mm x 8.0 mm Locking Cortical Screw	COL-2080
2.7 mm x 10.0 mm Locking Cortical Screw	COL-2100
2.7 mm x 12.0 mm Locking Cortical Screw	COL-2120
2.7 mm x 14.0 mm Locking Cortical Screw	COL-2140
2.7 mm x 16.0 mm Locking Cortical Screw	COL-2160
2.7 mm x 18.0 mm Locking Cortical Screw	COL-2180
2.7 mm x 20.0 mm Locking Cortical Screw	COL-2200
2.7 mm x 22.0 mm Locking Cortical Screw	COL-2220
2.7 mm x 24.0 mm Locking Cortical Screw	COL-2240
2.7 mm x 26.0 mm Locking Cortical Screw	COL-2260
2.7 mm x 28.0 mm Locking Cortical Screw	COL-2280
2.7 mm x 30.0 mm Locking Cortical Screw	COL-2300
2.7 mm x 32.0 mm Locking Cortical Screw	COL-2320
2.7 mm x 34.0 mm Locking Cortical Screw	COL-2340
2.7 mm x 36.0 mm Locking Cortical Screw	COL-2360
2.7 mm x 38.0 mm Locking Cortical Screw	COL-2380
2.7 mm x 40.0 mm Locking Cortical Screw	COL-2400
2.7 mm x 45.0 mm Locking Cortical Screw	COL-2450
2.7 mm x 50.0 mm Locking Cortical Screw	COL-2500
2.7 mm x 55.0 mm Locking Cortical Screw	COL-2550
2.7 mm x 60.0 mm Locking Cortical Screw	COL-2600
2.7 mm x 65.0 mm Locking Cortical Screw	COL-2650

3.5 mm Nonlocking Screws

3.5 mm x 6.0 mm Cortical Screw	CO-3060
3.5 mm x 8.0 mm Cortical Screw	CO-3080
3.5 mm x 10.0 mm Cortical Screw	CO-3100
3.5 mm x 12.0 mm Cortical Screw	CO-3120
3.5 mm x 14.0 mm Cortical Screw	CO-3140
3.5 mm x 16.0 mm Cortical Screw	CO-3160
3.5 mm x 18.0 mm Cortical Screw	CO-3180
3.5 mm x 20.0 mm Cortical Screw	CO-3200
3.5 mm x 22.0 mm Cortical Screw	CO-3220
3.5 mm x 24.0 mm Cortical Screw	CO-3240
3.5 mm x 26.0 mm Cortical Screw	CO-3260
3.5 mm x 28.0 mm Cortical Screw	CO-3280
3.5 mm x 30.0 mm Cortical Screw	CO-3300
3.5 mm x 32.0 mm Cortical Screw	CO-3320
3.5 mm x 34.0 mm Cortical Screw	CO-3340
3.5 mm x 36.0 mm Cortical Screw	CO-3360
3.5 mm x 38.0 mm Cortical Screw	CO-3380
3.5 mm x 40.0 mm Cortical Screw	CO-3400
3.5 mm x 45.0 mm Cortical Screw	CO-3450
3.5 mm x 50.0 mm Cortical Screw	CO-3500
3.5 mm x 55.0 mm Cortical Screw	CO-3550
3.5 mm x 60.0 mm Cortical Screw	CO-3600
3.5 mm x 65.0 mm Cortical Screw	CO-3650

*Plates are also available sterile-packed. Add -S to product number for sterile-packed product.

To learn more about the full line of Acumed® innovative surgical solutions, including the Scapula Plating System, please contact your local Acumed® Sales Representative or call 888-627-9957.

3.5 mm Locking Screws

3.5 mm x 6.0 mm Locking Cortical Screw	COL-3060
3.5 mm x 8.0 mm Locking Cortical Screw	COL-3080
3.5 mm x 10.0 mm Locking Cortical Screw	COL-3100
3.5 mm x 12.0 mm Locking Cortical Screw	COL-3120
3.5 mm x 14.0 mm Locking Cortical Screw	COL-3140
3.5 mm x 16.0 mm Locking Cortical Screw	COL-3160
3.5 mm x 18.0 mm Locking Cortical Screw	COL-3180
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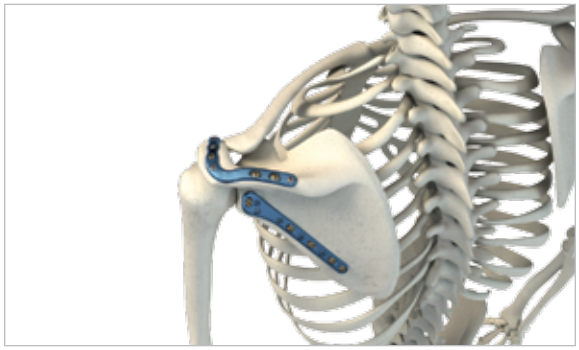
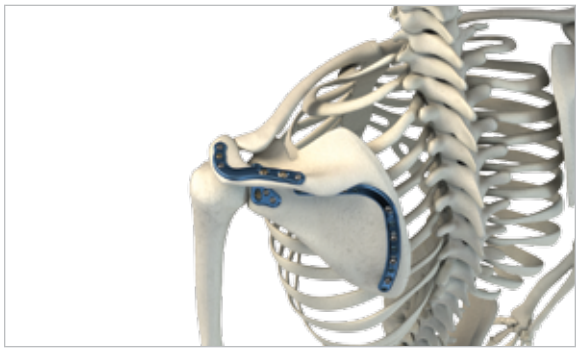
3.5 mm x 38.0 mm Locking Cortical Screw	COL-3380
3.5 mm x 40.0 mm Locking Cortical Screw	COL-3400
3.5 mm x 45.0 mm Locking Cortical Screw	COL-3450
3.5 mm x 50.0 mm Locking Cortical Screw	COL-3500
3.5 mm x 55.0 mm Locking Cortical Screw	COL-3550
3.5 mm x 60.0 mm Locking Cortical Screw	COL-3600
3.5 mm x 65.0 mm Locking Cortical Screw	COL-3650

4.0 mm Cancellous Screws

4.0 mm x 12.0 mm Cancellous Screw	CA-4120
4.0 mm x 14.0 mm Cancellous Screw	CA-4140
4.0 mm x 16.0 mm Cancellous Screw	CA-4160
4.0 mm x 18.0 mm Cancellous Screw	CA-4180
4.0 mm x 20.0 mm Cancellous Screw	CA-4200
4.0 mm x 22.0 mm Cancellous Screw	CA-4220
4.0 mm x 24.0 mm Cancellous Screw	CA-4240
4.0 mm x 26.0 mm Cancellous Screw	CA-4260
4.0 mm x 28.0 mm Cancellous Screw	CA-4280
4.0 mm x 30.0 mm Cancellous Screw	CA-4300
4.0 mm x 35.0 mm Cancellous Screw	CA-4350
4.0 mm x 40.0 mm Cancellous Screw	CA-4400
4.0 mm x 45.0 mm Cancellous Screw	CA-4450
4.0 mm x 50.0 mm Cancellous Screw	CA-4500
4.0 mm x 55.0 mm Cancellous Screw	CA-4550
4.0 mm x 60.0 mm Cancellous Screw	CA-4600





Ordering Information

Instruments

.045" x 6" ST Guide Wire	WS-1106ST
.059" x 5" ST Guide Wire	WS-1505ST
Plate Bender	PL-2040
Large Plate Bender	PL-2045
2.0/2.8 Thin Drill Guide	PL-2118
2.8/3.5 Thin Drill Guide	PL-2196
Offset Drill Guide	PL-2095
Reduction Foreceps with Serrated Jaw	PL-CL04
2.7 mm Cortical Screw Bone Tap	MS-LTT27
3.5 mm Cortical Screw Bone Tap	MS-LTT35
2.0 mm x 5" Quick Release Drill	MS-DC5020
2.8 mm x 5" Quick Release Drill	MS-DC28
3.5 mm x 5" Quick Release Drill	MS-DC35
6 mm - 70 mm Depth Gauge	MS-9022
Large Cannulated Quick Release Driver Handle	MS-3200
2.5 mm Quick Release Driver Tip	HPC-0025
3.5 mm Screw Driver Sleeve	MS-SS35
2.7 mm Locking Drill Guide	MS-LDG27
3.5 mm Locking Drill Guide	MS-LDG35
Plate Tack	PL-PTACK
Quick Release Driver Handle	MS-1210
Freer Elevator, 7.5	MS-57614
Small Pointed Reduction Forceps	OW-1200
15 mm Hohmann Retractor	MS-46827
Periosteal Elevator	MS-46212
Plate Clamp	80-0223

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5885 NW Cornelius Pass Road
Hillsboro, OR 97124
(888) 627-9957
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