Clavicle Plating System
Surgical Technique

LOQTEQ®

Locking Compression Technology by aap

Clavicle Plating System
Surgical Technique

LOQTEQ®

Disclaimer

This surgical technique is exclusively intended for medical professionals, especially physicians, and therefore may not be regarded as a source of information for non-medical persons. The description of this surgical technique does not constitute medical advice or medical recommendations nor does it convey any diagnostic or therapeutic information on individual cases. Therefore, the attending physician is fully responsible for providing medical advice to the patient and obtaining the informed consent of the patient which this surgical technique does not supersede.
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Contents

• Introduction

The LOQTEQ® Clavicle Plating System 2.7/3.5 is part of the LOQTEQ® Plate System and unifies angular stability with modern plate design. The anatomically preformed plates are available in different versions for clavicular shaft fractures, lateral clavicle fractures, and dislocations of the acromioclavicular joint.

The LOQTEQ® Clavicle Plating System includes the following plates:

- LOQTEQ® Clavicle Shaft Plate 3.5
- LOQTEQ® Superior Lateral Clavicle Plate 2.7/3.5
- LOQTEQ® AcroPlate 3.5

Material

The LOQTEQ® implants and instruments are manufactured using high-quality materials, which have been proven to be successful in medical technology for decades. The anatomical plates and bone screws are made of titanium alloy.

All materials employed comply with national and international standards. They are characterized by good biocompatibility, a high degree of safety against allergic reactions and good mechanical properties. LOQTEQ® implants show an excellent highly polished surface.

Description

LOQTEQ® Clavicle Shaft Plate 3.5

- The anatomical plate design minimizes the need for intraoperative plate contouring
- K-wire holes for temporary fixation of bone fragments or of the plate to the bone
- The flattened end of the plate is designed for tissue-conserving, submuscular insertion
- Benable segments allow additional contouring
- Minor Contact undercuts may help to preserve the blood supply to the periosteum
- Left and right anatomical plates available in 6, 7, 8 and 10 hole designs

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LOQTEQ® Superior Lateral Clavicle Plate 2.7 / 3.5

- The anatomical plate design minimizes the need for intraoperative plate contouring
- 2.7 mm locking screws are positioned in a diverging manner to ensure secure and stable fixation
- K-wire holes for temporary fixation of bone fragments or of the plate to the bone
- The flattened end of the plate is designed for tissue-conserving, submuscular insertion
- Bendable segments allow additional contouring
- Minor Contact undercuts may help to preserve the blood supply to the periosteum
- Left and right anatomical plates available in 4 and 7 hole designs

LOQTEQ® AcroPlate 3.5

- Wide plate body with slightly concave underside is optimally adapted to the lateral clavicle anatomy
- Hook placement dorsal to the joint to protect ligaments
- Flat, wide hook shape (15° angle) - adapted to the acromioclavicular angle
- Shallow hook depth and anatomical hook shape to reduce the risk of subacromial impingement
- K-wire holes for temporary fixation of bone fragments or of the plate to the bone
- Minor Contact undercuts may help to preserve the blood supply to the periosteum
- Left and right anatomical plates available in 5 and 7 hole designs

• Introduction

Indications / Contraindications

Indications

LOQTEQ® Clavicle Shaft Plate 3.5 and LOQTEQ® Superior Lateral Clavicle Plate 2.7/3.5

- Fixation of fractures, mal-unions, and non-unions of the clavicle and
- Osteotomies of the clavicle

LOQTEQ® AcroPlate 3.5

- Fixation of lateral clavicle fractures and dislocations oft he acromioclavicular joint

Contraindications

- Infection or inflammation (localized or systemic)
- Allergies against the implant material
- High risk patients for anesthesia
- Severe soft tissue swelling impacting normal wound healing
- Insufficient soft tissue coverage
- Fractures in children and adolescents with epiphyseal plates not yet ossified

Processing (Sterilization & Cleaning)

The implants are supplied sterile and non-sterile.

Implants and instruments that are supplied in non-sterile condition must be sterilized before use.
For this purpose, please refer to the Instructions for Use that are enclosed with the plates, instruments, and trays.

Do not use (sterile) implants from damaged or open inner packaging.

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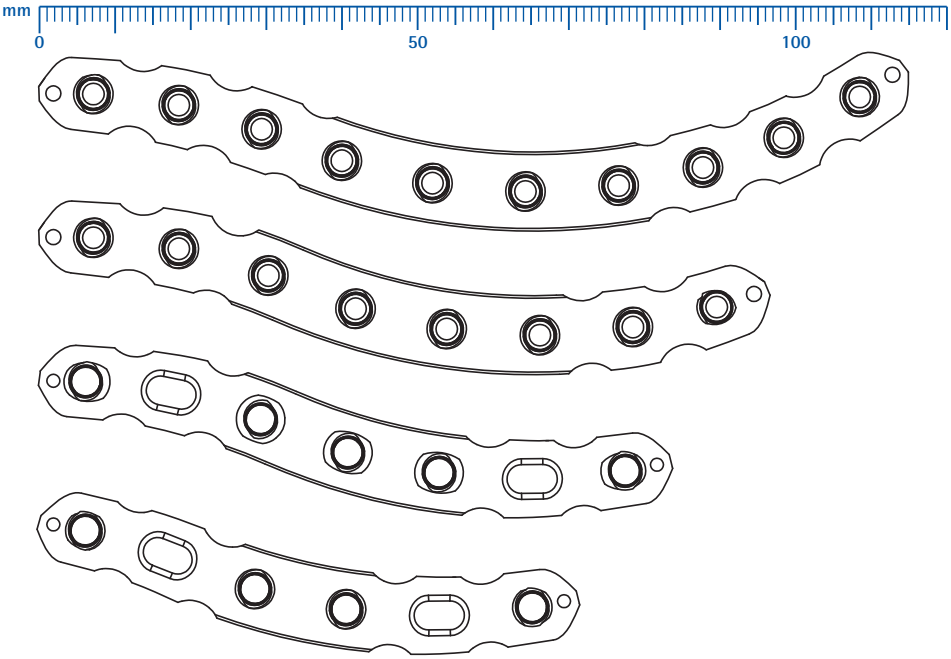
LOQTEQ® Clavicle Shaft Plate 3.5
LOQTEQ® Superior Lateral Clavicle 2.7/3.5

Preoperative Planning

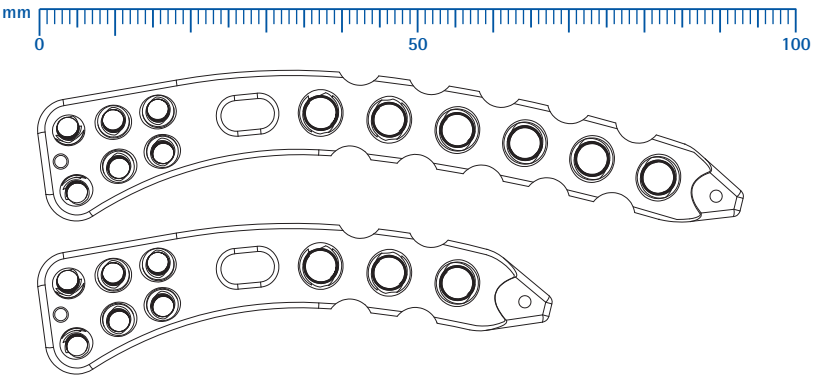
- Evaluation of the fracture situation on the basis of an X-ray and selection of the appropriate plate length. Also plan the insertion of lag screws, if necessary.

- In certain cases, preoperatively assess the fracture situation using 3D CT imaging.

LOQTEQ® Clavicle Shaft Plate 3.5



LOQTEQ® Superior Lateral Clavicle Plate 2.7/3.5



• Surgical Technique

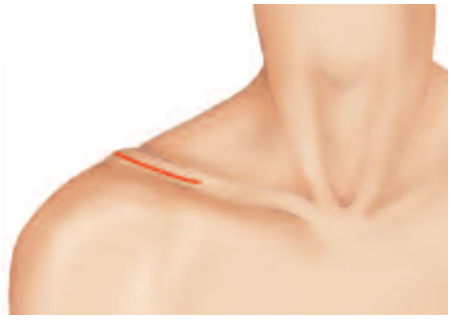
Positioning

- The patient is positioned in the supine or in the beach chair position on a radiolucent operating table.
  A bolster may be placed between the shoulder blades and the head to facilitate repositioning.
  Ensure that the arm can be manipulated intraoperatively to facilitate access or repositioning.

Access

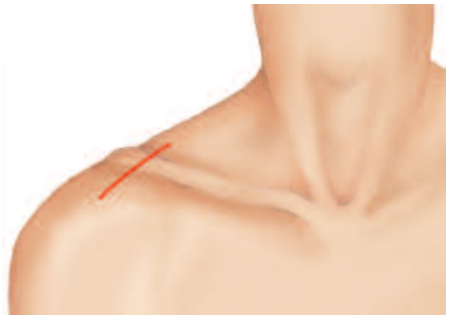
The following options may be chosen:

- Medial to lateral transverse incision, parallel to the axis of the clavicle
- Vertical incision along Langer's line



Expose the fracture to the clavicle.

◆ IMPORTANT:
Preserve the periosteum to maintain good vascularity and promote fracture healing. Restore the surrounding soft tissue and close the lateral fascia for better anatomical reintegration.



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Repositioning

INSTRUMENTS	ART.-NO.
K-wire with trocar point, ø1.6, L 150	NK 0016-15

- Reposition the fracture and ensure the proper length, axial alignment, and rotation of the clavicle.
- Temporarily stabilize the fracture using K-wires, reduction forceps, suture materials or lag screws. K-wires can be guided through the plate to ensure correct repositioning. Reduction aids should be placed so as not to interfere with the definitive position of the implant.
- Insert lag screws, if necessary.

◆ NOTE:

The shape of the LOQTEQ® Clavicle Shaft Plates and Superior Lateral Clavicle Plates can act as reduction aid for anatomic reconstruction of complex fractures.

LOQTEQ® Clavicle Shaft Plate 3.5

Inserting the plate

INSTRUMENTS	ART.-NO.
Bending iron 1 for small fragment plates, closed	IP 8405-00
Bending iron 2 for small fragment plates, closed	IP 8405-50

- Select the plate that best fits the patient's anatomy and fracture situation.
- The plate is placed on the superior aspect of the clavicle and spans the length of the bone.

◆ NOTE:

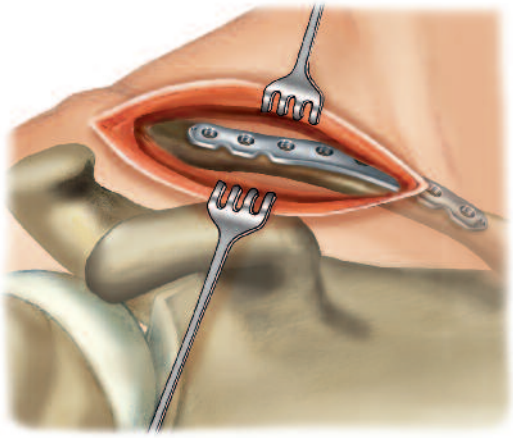
LOQTEQ® Clavicle Plates are anatomically preformed. The plates may be contoured to adapt to individual patient anatomy, if clinically necessary. Use bending irons to adapt the plates.

◆ CAUTION:

When bending the plates, please note the following:

When contouring implants to the given shape of the bones, the implants should not be bent back and forth as this may result in implant failure. Do not bend across the locking holes and avoid any sharp-edged damage by instruments.
Do not bend the plate by more than 10°.

• Surgical Technique

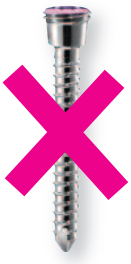


- Position the plate on the superior aspect of the clavicle shaft.

Inserting screws

- Determine the combination of screws to be used for fixation.
  If a combination of locking and non-locking screws will be used, non-locking screws must be inserted first to pull the bone to the plate.

INSTRUMENTS	ART.-NO.
Drill guide for round hole LOQTEQ® 3.5, l-ø 2.8, blue	IU 8166-20
Twist drill ø2.7, L 150, coil 50, quick coupling	IU 7427-15
Depth gauge for screws, ø2.5 - 3.5	IS 7903-00
Screwdriver Duo, T15, quick coupling	IU 7825-56
Handle with quick coupling, with torque limiter, 2.0Nm	IU 7707-20
Large handle, cannulated, quick coupling	IU 7706-00



◆ **CAUTION:**

The LOQTEQ® Clavicle Plates must be used only in combination with standard screws and locking screws (blue) for round hole. Do not use LOQTEQ® locking screws for gliding locking hole (red)!

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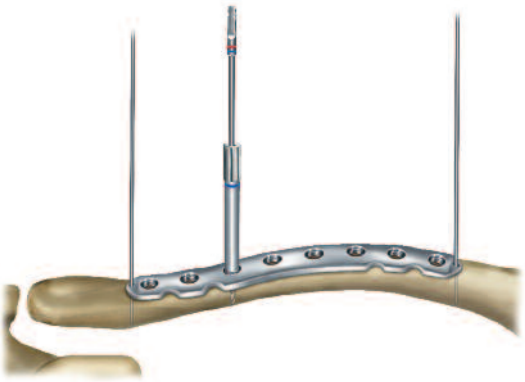
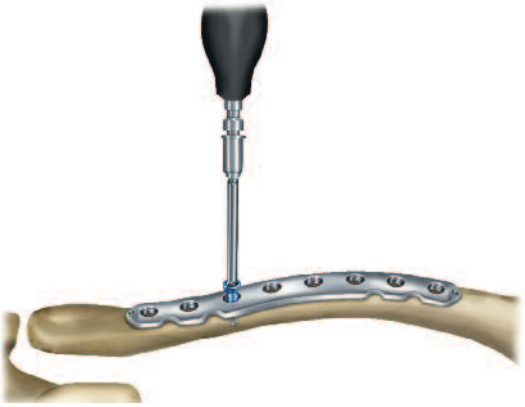


3.5 mm LOQTEQ® cortical screw, small head (blue)

- Temporarily plate fixation with K-wires.
- Insert the drill guide for round hole (blue) in the appropriate hole in the shaft area of the plate.



- Use a drill bit ø2.7 (blue / red) to drill to the desired depth. Then remove the drill guide and determine the length of the screw using the depth gauge for screws ø2.5-3.5.
- Insert the appropriate length LOQTEQ® locking cortical screw 3.5 mm, small head, using the screwdriver T15 and the torque limiter 2.0 Nm.
  With an audible and sensible click of the torque limiter the optimal locking is achieved. In addition, it is recommended to ensure correct fit of the screws, i.e. visually or using fluoroscopy.

- Secure all round locking holes in this way.

◆ **Note:**

As soon as the head of the screw reaches the plate hole, it is compulsory to switch to the torque limiter. In cases of very hard bone in the diaphysis it is necessary to make sure that the screw head is flush to the plate. With such conditions, it is permissible to finish the screw without the torque limiter.

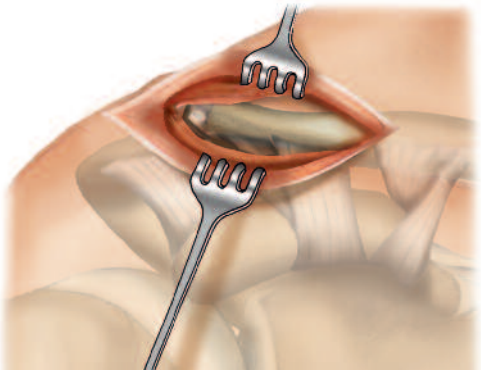
◆ **Caution:**

Avoid over-penetration of the clavicle´s far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

- Alternatively, 3.5 mm cortical screws, small head, can be used, see page 14, Inserting standard screws.

LOQTEQ® Superior Lateral Clavicle Plate 2.7/3.5

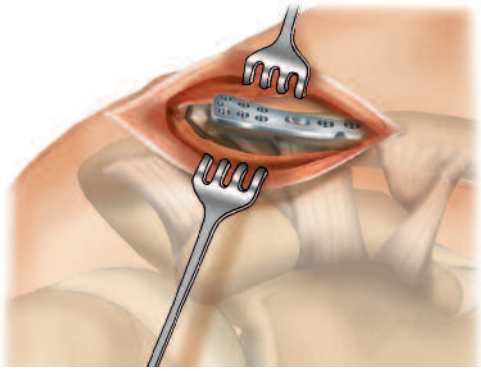
Inserting the plate



- The plate is placed on the superior aspect of the clavicle with the broad plate section covering the lateral part.

◆ NOTE:

LOQTEQ® Clavicle Plates are anatomically preformed. The plates may be contoured to adapt to individual patient anatomy, if clinically necessary. Use bending irons to adapt the plates.



◆ CAUTION:

When bending the plates, please note the following:

When contouring implants to the given shape of the bones, the implants should not be bent back and forth as this may result in implant failure. Do not bend across the locking holes and avoid any sharp-edged damage by instruments.
Do not bend the plate by more than 10°.

Inserting screws

- Determine the combination of screws to be used for fixation.
If a combination of locking and non-locking screws will be used, non-locking screws must be inserted first to pull the bone to the plate.

Inserting standard screws

INSTRUMENTS	ART.-NO.
Double drill guide, ø2.5/3.5, with spring aided centering	IU 8116-50
Twist drill ø2.5, L 110, coil 50, quick coupling	IU 7425-00
Depth gauge for screws, ø2.5 - 3.5	IS 7903-00
Screw forceps, self-holding	IU 8004-00
Screwdriver hexagonal, ø2.5, quick coupling	IU 7825-00
Large handle, cannulated, quick coupling	IU 7706-00

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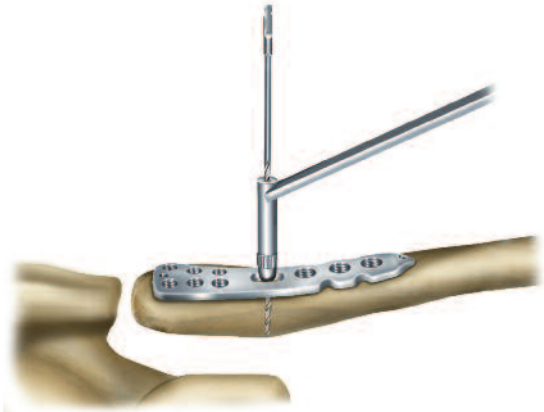
3.5 mm cortical screw, small head, in oblong hole of the plate.



- Insert the double drill guide 2.5 / 3.5 into the oblong hole of the plate and drill using drill bit ø2.5.

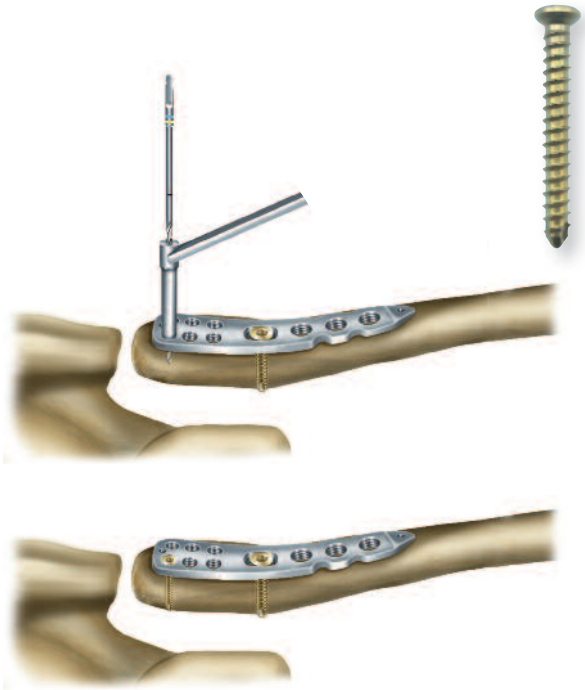
- Remove the drill guide and determine the length of the screw with the depth gauge for screws ø2.5-3.5.

- Insert the appropriate length cortical screw 3.5 mm, small head, using screwdriver, hex. 2.5.

◆ **CAUTION:**

Avoid over-penetration of the clavicle's far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

• Surgical Technique



INSTRUMENTS	ART.-NO.
Double drill guide ø2.0/2.5	IU 8125-00
Twist drill ø2.0, L 110, coil 25, quick-coupling	IU 7420-10
Depth gauge for screws, ø2.5 - 3.5	IS 7903-00
Screwdriver T8, short, quick coupling	IU 7810-08
Screwdriver Duo, T8, quick coupling	IU 7815-56
Large handle, cannulated, quick coupling	IU 7706-00

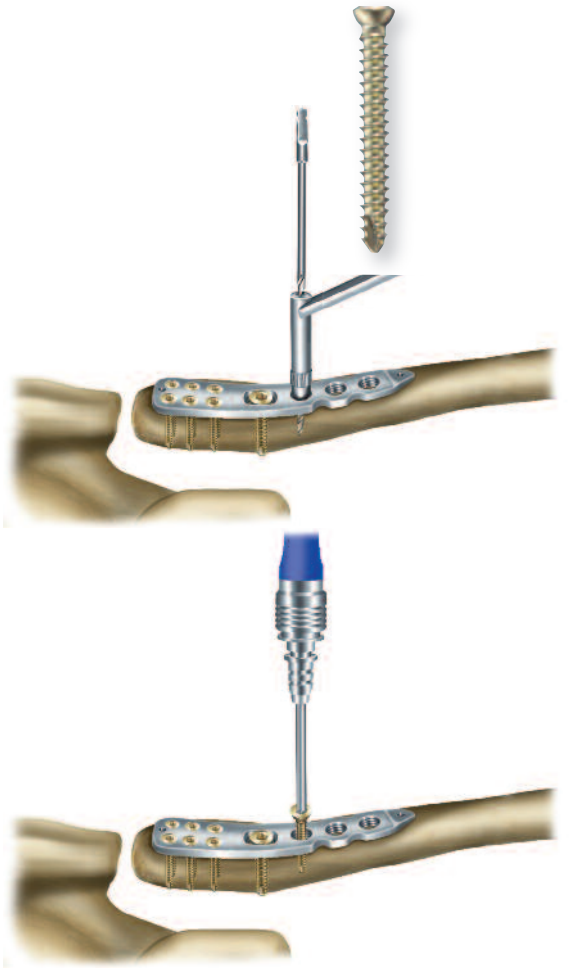
2.5 mm cortical screw in the lateral plate section

◆ NOTE:

Due to its anatomy and bone quality, the lateral end of the clavicle often offers little support for screws; therefore, we recommend using 2.7 mm angle stable screws. However, in exceptional cases, it may be necessary to use non-locking standard screws.

- Insert the double drill guide 2.0/2.5 into the corresponding hole in the lateral part of the plate, and drill using drill bit ø2.0.

- Remove the drill guide and determine the length of the screw with the depth gauge for screws ø2.5-3.5.



- Insert the appropriate length cortical screw 2.5 mm using screwdriver T8.

◆ CAUTION:

Avoid over-penetration of the clavicle's far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

3.5 mm cortical screw, small head, in the shaft area of the plate

- Insert the double drill guide 2.5/3.5 into the appropriate hole in the shaft area of the plate, and drill using drill bit ø2.5.

- Remove the drill guide and determine the length of the screw using the depth gauge for screws ø2.5-3.5.

- Insert the appropriate length cortical screw 3.5 mm, small head, using screwdriver, hex. 2.5.

◆ CAUTION:

Avoid over-penetration of the clavicle's far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

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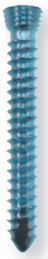
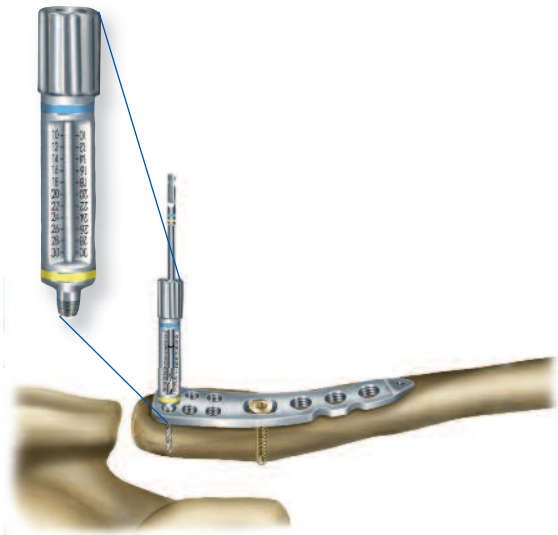
Inserting locking screws



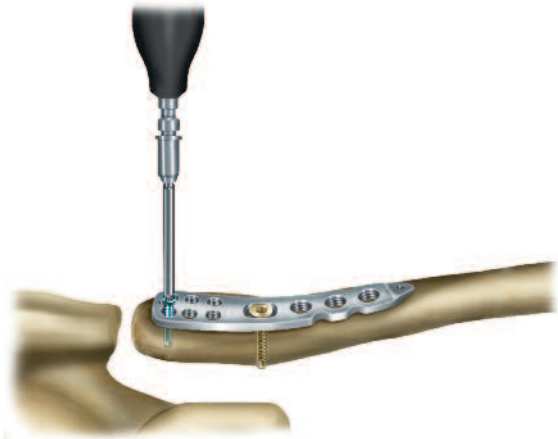
INSTRUMENTS	ART.-NO.
Drill guide for LOQTEQ® Clavicle plates 2.7, l-ø 2.0, blue/gold	IU 8168-20
Twist drill ø2.0, L 110, coil 25, quick-coupling	IU 7420-10
Depth gauge for screws, ø2.5 - 3.5	IS 7903-00
Screwdriver Duo, T8, quick coupling	IU 7815-56
Handle round with quick coupling, with torque limiter 1.5 Nm	IU 7707-00

2.7 mm LOQTEQ® cortical screw, small head (light blue)



- Insert the drill guide for LOQTEQ® Clavicle Plates (light blue / gold) in the appropriate hole in the lateral area of the plate, and drill using drill bit ø2.0.

- Measure screw length by using the depth gauge for ø2.5-3.5 screws. Alternatively, the screw length can be determined by reading off the drill depth at the drill guide (light blue / gold). The drill features special markings for this purpose.



- Insert the appropriate length LOQTEQ® locking cortical screw 2.7 mm, small head, using screwdriver T8 and the handle with torque limiter, 1.5 Nm.
  With an audible and sensible click of the torque limiter the optimal locking is achieved. In addition, it is recommended to ensure correct fit of the screws, i.e. visually or using fluoroscopy.

- After all lateral holes are secured in this way, remove the K-wires.

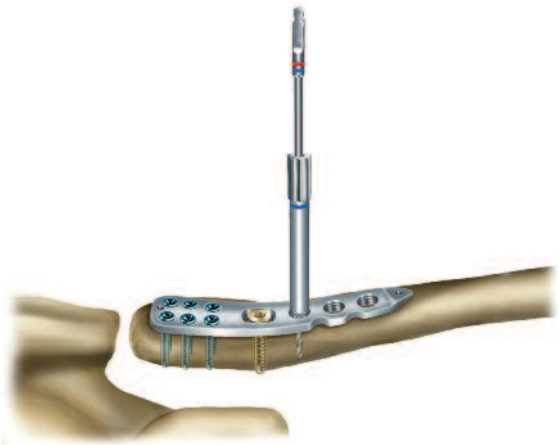
◆ **NOTE:**

As soon as the head of the screw reaches the plate hole it is compulsory to switch to the torque limiter.

◆ **CAUTION:**

Avoid over-penetration of the clavicle's far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

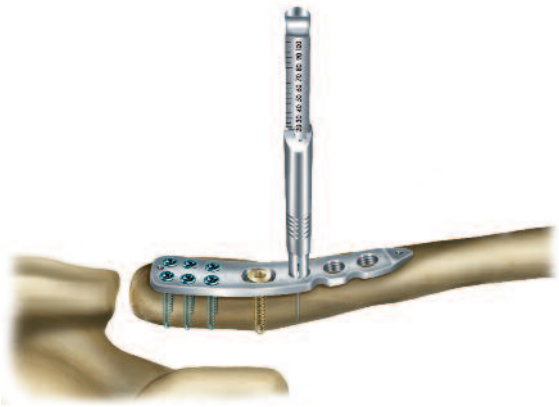
INSTRUMENTS	ART.-NO.
Drill guide for round hole LOQTEQ® 3.5, I-ø 2.8, blue	IU 8166-20
Twist drill ø2.7, L 150, coil 50, quick coupling	IU 7427-15
Depth gauge for screws, ø2.5 - 3.5	IS 7903-00
Screwdriver Duo, T15, quick coupling	IU 7825-56
Handle with quick coupling, with torque limiter, 2.0 Nm	IU 7707-20
Large handle, cannulated, quick coupling	IU 7706-00



3.5 mm LOQTEQ® cortical screw in the shaft area of the plate, small head (blue)

- Insert the drill guide for round hole (blue) in the appropriate hole in the shaft area of the plate.

- Use a drill bit ø2.7 (blue / red) to drill to the desired depth. Then remove the drill guide and determine the length of the screw using the depth gauge for screws ø2.5-3.5.



- Insert the appropriaten length LOQTEQ® locking cortical screw 3.5 mm, small head, using screwdriver T15 and torque limiter 2.0 Nm.
  With an audible and sensible click of the torque limiter the optimal locking is achieved. In addition, it is recommended to ensure correct fit of the screws, i.e. visually or using fluoroscopy.

- Secure all round locking holes in this way.

◆ **NOTE:**

As soon as the head of the screw reaches the plate hole, it is compulsory to switch to the torque limiter. In cases of very hard bone in the diaphysis it is necessary to make sure that the screw head is flush to the plate. With such conditions, it is permissible to finish the screw without the torque limiter.

◆ **CAUTION:**

Avoid over-penetration of the clavicle´s far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

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Explantation

INSTRUMENTS	ART.-NO.
Screwdriver, hexagonal, ø2.5, blue handle	IU 7841-00
Screwdriver T8, round handle	IU 7811-08
Screwdriver T15, round handle	IU 7811-15

◆ NOTE:

Use the appropriate explantation screwdriver T8/T15 (IU 7811-08/ IU 7811-15) for a safe screw removal. The explantation screwdrivers are not self-retaining and allow for higher torque transmission during screw removal. They should be ordered separately.

The screwdrivers T15 in the set (IU 7825-56) are self-retaining and should not be used for screw explantation.

- Place an incision on the old scar. Manually undo all screws and sequentially remove them.

◆ NOTE:

After manually unlocking all screws, the removal can be performed using a power tool.

• Surgical Technique

LOQTEQ® AcroPlate 3.5

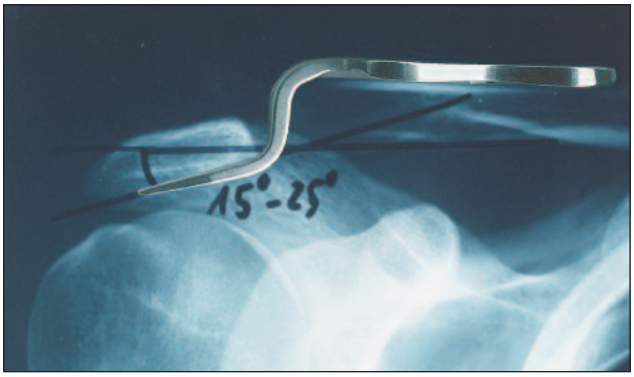
The LOQTEQ® AcroPlate 3.5 was developed with Dr. Dreithaler (Berlin, Germany) and is used for the treatment of AC joint luxations and lateral clavicle fractures. The described surgical procedure allows for anatomical reconstruction and early functional mobilization.

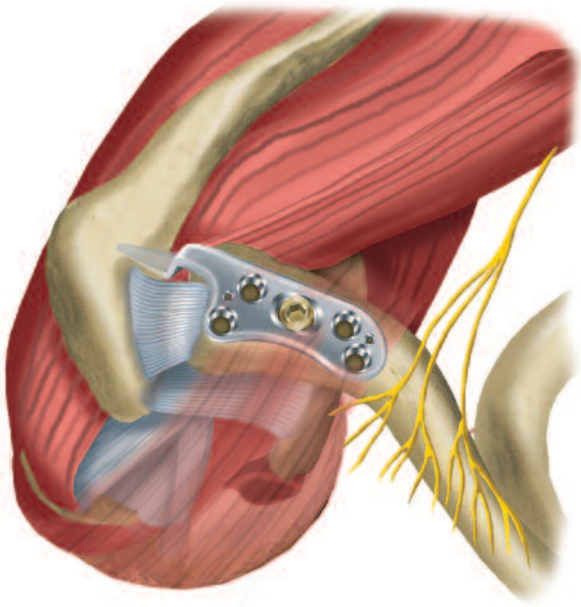
The LOQTEQ® AcroPlate 3.5 was developed to maintain the reduction of the lateral clavicle and to adapt it to the ligaments. In addition, it minimizes movement at the fracture site without limiting the rotation of the clavicle.

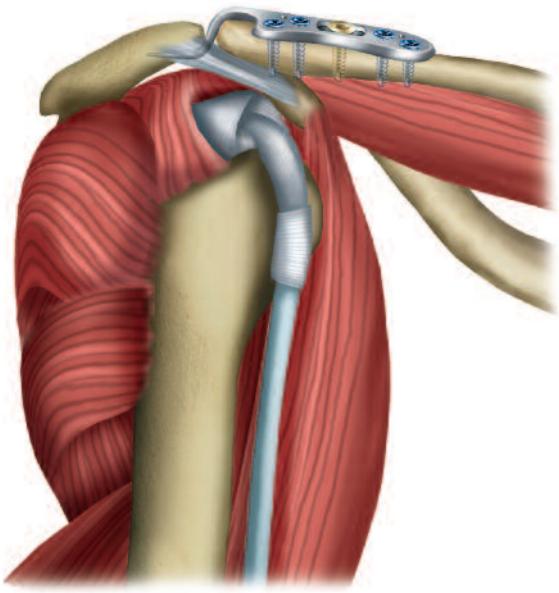
Preoperative Planning

- Evaluation of the fracture situation on the basis of an X-ray and selection of the appropriate plate length. Also plan the insertion of lag screws, if necessary.

- The 5-hole plate is typically used for Tossy III or Rockwood III-VI AC joint dislocations, and the 7-hole plate is recommended for lateral clavicle fractures.







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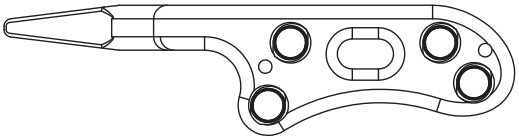
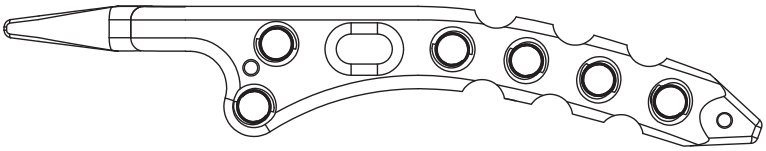
LOQTEQ® AcroPlate 3.5, 5 & 7 holes





▶ Surgical Technique, acute AC joint dislocation

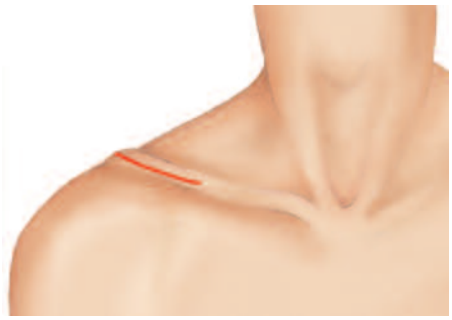
Positioning

- The patient is positioned supine on a radiolucent operating table. The table is raised 30° to 40° at the shoulder level. Placing a bolster below the affected shoulder and tilting the head to the opposite side facilitate access.
  Ensure that the arm can be intraoperatively manipulated to facilitate access or repositioning.

Access

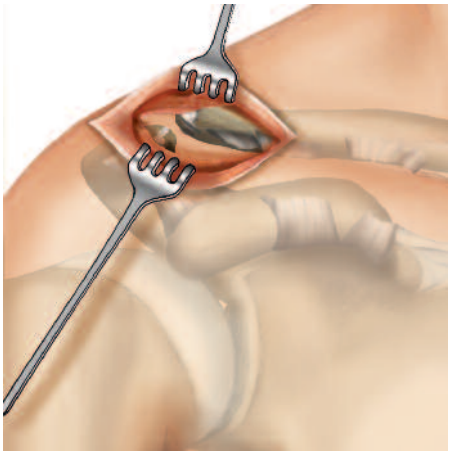
INSTRUMENTS	ART.-NO.
Elevatorium small, bended	IU 6010-00

- Make an approximately 4-6 cm long skin incision from the AC joint medially over the lateral clavicle.



- Alternatively: shoulder strap incision over the lateral clavicle

- Make subcutaneous tissue incisions and perform longitudinal separation of the muscle fascia on the lateral clavicle (deltoid / trapezius muscle).



- Using the elevatorium, detach the periosteum beneath the acromion dorsal to the lateral end of the clavicle.

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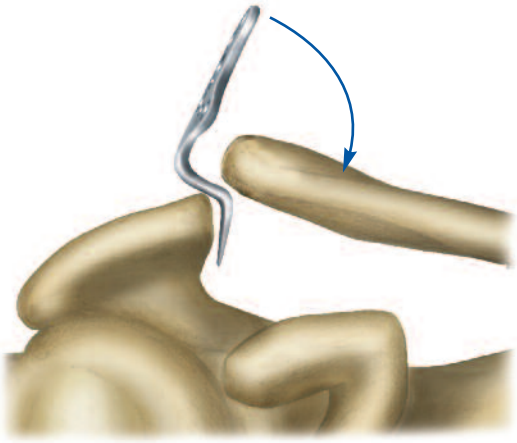
Repositioning (also for lateral clavicle fractures)

INSTRUMENTS	ART.-NO.
K-wire with trocar point, ø1.6, L 150	NK 0016-15



- For lateral clavicle fractures, a longer 7-hole AcroPlate 3.5 is available.
- Temporarily stabilize the fracture using K-wires, reduction forceps, suture materials, or lag screws. K-wires can be placed through the plate to ensure correct repositioning. Reduction aids must not interfere with the definitive position of the implant.
- The anatomically correct alignment of the clavicle and acromion should be performed under fluoroscopy. Ensure that the rotator cuff is not impinged by the AcroPlate.

Inserting the plate

- Insert the hook of the LOQTEQ® AcroPlate 3.5 beneath the acromion in the dorsal area of the AC joint.
- Reposition the clavicle by pressing down on the plate.
- Position and temporarily secure the plate on the clavicle, either manually or using K-wires.

◆ **Caution:**
The plate hook must be in contact with the acromion.

- The anatomically correct alignment of the plate on the clavicle and the hook beneath the acromion should be performed using fluoroscopy.

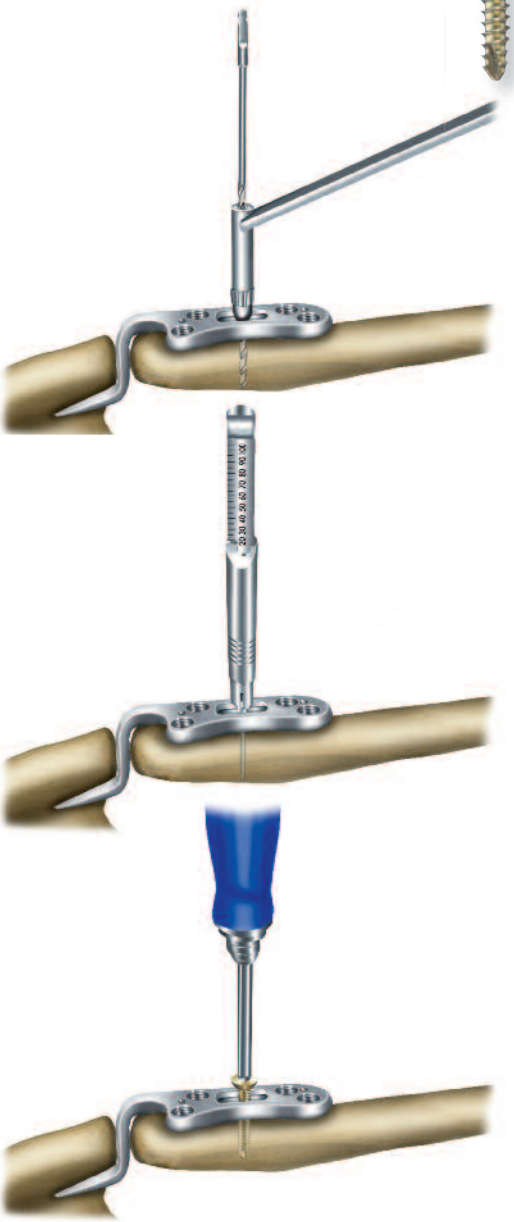
Inserting screws

- Determine the combination of screws to be used for fixation.
  If a combination of locking and non-locking screws will be used, non-locking screws must be inserted first to pull the bone to the plate.
- To achieve stable fixation, at least three 3.5 mm screws should be used.

Inserting standard screws

INSTRUMENTS	ART.-NO.
Double drill guide, ø2.5/3.5, with spring aided centering	IU 8116-50
Twist drill ø2.5, L 110, coil 50, quick coupling	IU 7425-00
Depth gauge for screws, ø2.5 - 3.5	IS 7903-00
Screw forceps, self-holding	IU 8004-00
Screwdriver hexagonal, ø2.5, quick coupling	IU 7825-00
Large handle, cannulated, quick coupling	IU 7706-00

3.5 mm cortical screw with small head



- Position the double drill guide 2.5/3.5 into the appropriate hole in the shaft area of the plate, and drill using drill bit ø2.5.
- Remove the drill guide and determine the length of the screw using the depth gauge for screws ø2.5-3.5.
- Insert the appropriate length cortical screw 3.5 mm, small head, using screwdriver, hex. 2.5.

◆ **CAUTION:**

Avoid over-penetration of the clavicle's far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

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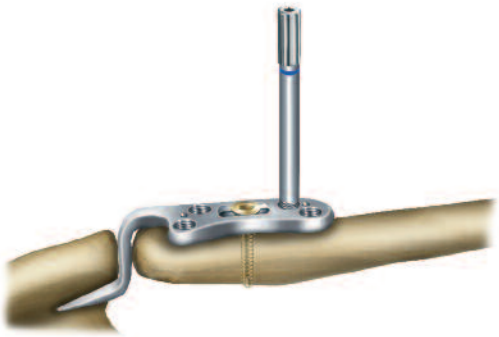
Inserting locking screws

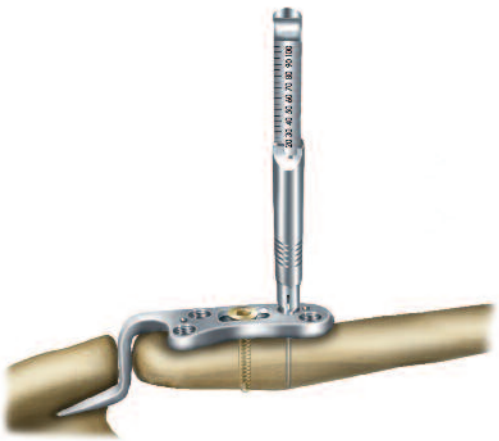
INSTRUMENTS	ART.-NO.
Drill guide for round hole LOQTEQ® 3.5, I-ø 2.8, blue	IU 8166-20
Twist drill ø2.7, L 150, coil 50, quick coupling	IU 7427-15
Screwdriver Duo, T15, quick coupling	IU 7825-56
Handle with quick coupling, with torque limiter, 2.0 Nm	IU 7707-20

3.5 mm LOQTEQ® cortical screw, small head (blue)



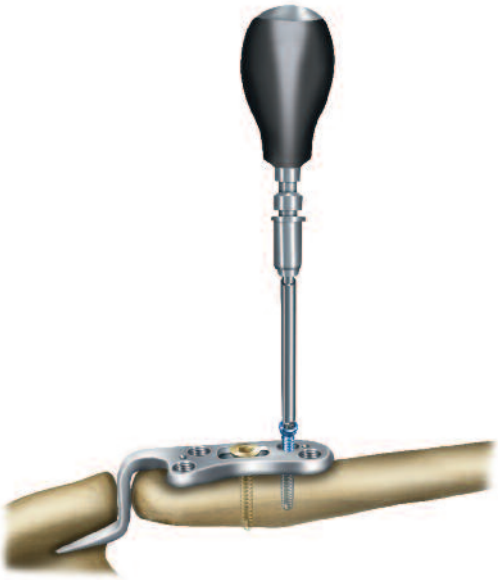
- Insert the drill guide for round hole (blue) in the appropriate hole for locking screw insertion.

- Use a drill bit ø2.7 (blue / red) to drill to the desired depth.



- Remove the drill guide and determine the length of the screw with the depth gauge for screws ø2.5-3.5.

• Surgical Technique



- Insert the appropriate 3.5 mm LOQTEQ® locking cortical screw, small head, using screwdriver T15 and torque limiter 2.0 Nm. With an audible and sensible click of the torque limiter the optimal locking is achieved. In addition, it is recommended to ensure correct fit of the screws, i.e. visually or using fluoroscopy.

- Secure all round locking holes in this way.

◆ **Note:**
As soon as the head of the screw reaches the plate hole it is compulsory to switch to the torque limiter.

◆ **Caution:**
Avoid over-penetration of the clavicle´s far cortical bone due to the risk of damage to neurovascular structures located inferiorly.

- Suture the deltotrapezial fascia over the plate.

◆ **Caution:**
The stable, precise reconstruction of the deltotrapezial fascia is essential to ensure horizontal stability of the joint and soft tissue coverage.

◆ **Note:**
The coracoclavicular ligaments do not necessarily need to be sutured.

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▶ Surgical Technique chronic AC joint dislocation (modified Weaver-Dunn procedure)

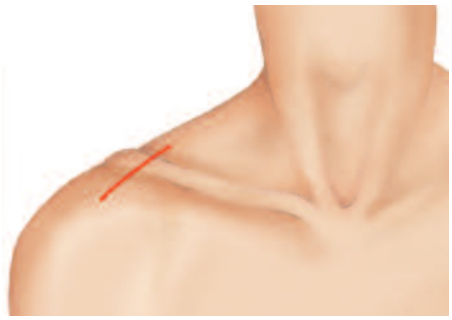
Surgical treatment for stabilizing chronic AC joint dislocations using the LOQTEQ® AcroPlate 3.5 and the modified Weaver-Dunn procedure through osteoligament transfer of the coracoacromial ligament and fixation with cannulated screws.

Positioning

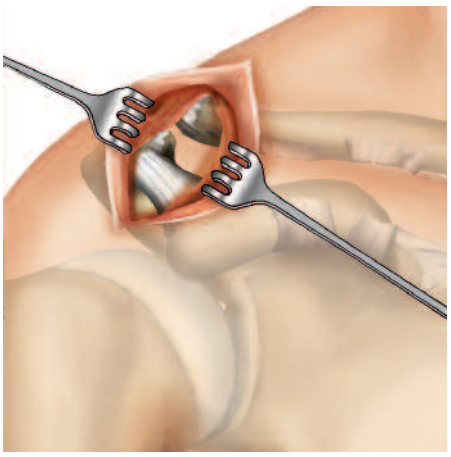
- The patient is positioned in the beach chair position. This facilitates AP and axial imaging. Ensure that the arm can be intraoperatively moved.

Access

- Access is achieved by making a vertical skin incision (approx. 7 cm long) over the lateral clavicle (near the AC joint).

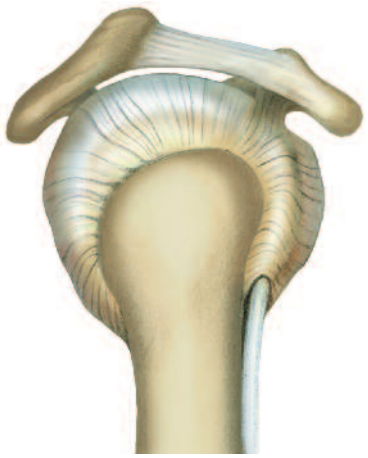


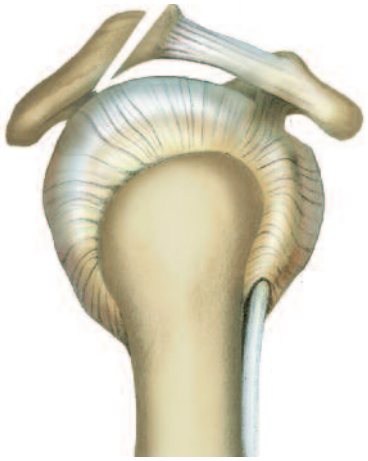
- Split the deltoid muscle in line with the fibers. (Do not detach the muscle at its origin!)
  Expose the coracoid ligament and anterior margin of the acromion, and attach the coracoacromial ligament using a suture loop. Then perform a longitudinal incision of the muscular fascia between the deltoid and trapezius, and retract away from the lateral clavicle (approx. 4-5 cm) to create space for placing the LOQTEQ® AcroPlate 3.5.



Osteotomy of the lateral clavicle and ligament transfer

INSTRUMENTS	ART.-NO.
Elevatorium small, bended	IU 6010-00





- Perform a wedge-shaped osteotomy at the anterior margin of the acromion with the coracoacromial ligament to harvest an oblique bone block approximately 1.2 x 1.2 cm in size.

- Perform an oblique osteotomy at the lateral clavicle approximately 2 to 5 mm in a ventral direction. Match the angle with the angle of the acromial bone block.

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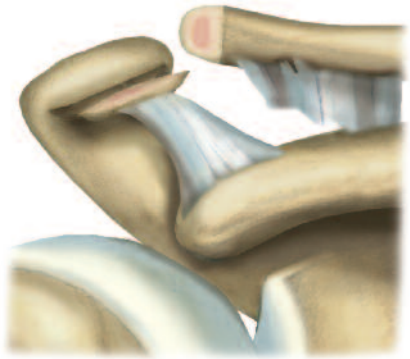
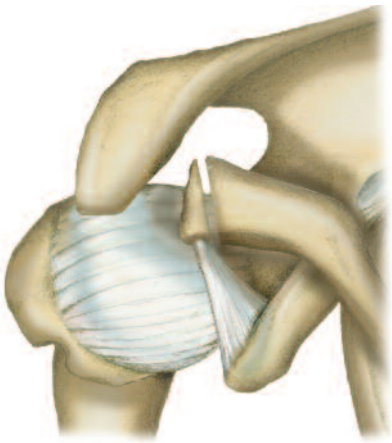
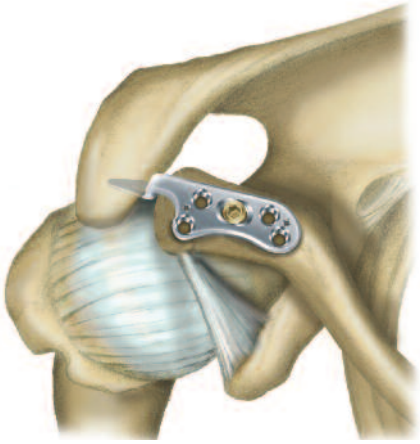


- Attach the acromial bone block to the lateral clavicle (below the deltoid origin!).



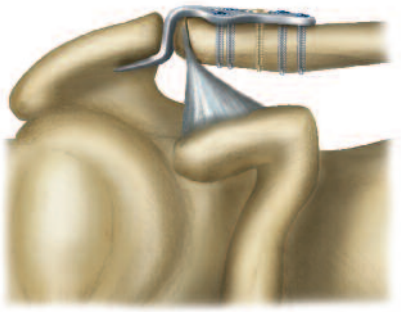
- Reposition the clavicle and insert the plate.

Inserting the plate



- Use a elevatorium to elevate the periosteum beneath the acromion, dorsal to the lateral clavicle.
- Reposition the clavicle, place the LOQTEQ® AcroPlate 3.5 with the hook dorsally to the AC joint, and align it on the lateral clavicle.
- The LOQTEQ® AcroPlate 3.5 is placed as described in the standard surgical technique, starting on page 18.

Inserting screws



- Secure using screws as described starting on page 18.
- Precisely position the osseous attachment of the ligament.

◆ **Caution:**
Ensure that the ligament creates sufficient tension between the coracoid process and the clavicle.
If necessary, shift the wedge-shaped bony ligament origin parallel in a dorsal direction.

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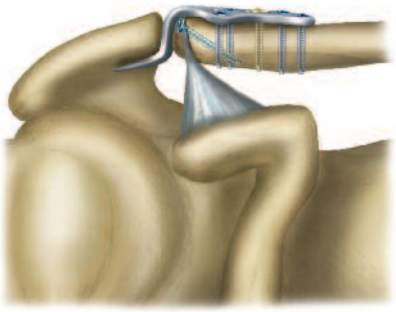
Fragment fixation

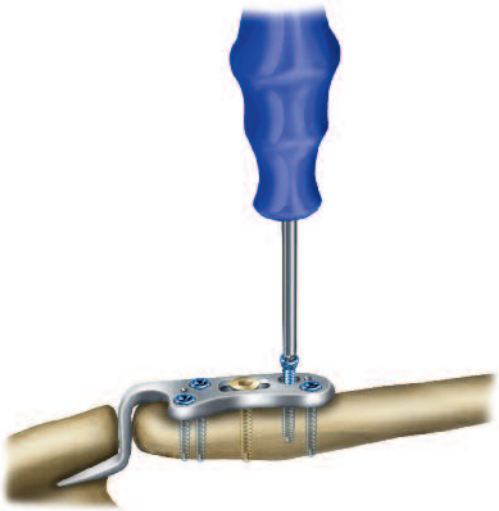
INSTRUMENTS	ART.-NO.
K-wire with trocar point, ø1.6, L 150	NK 0016-15



- Perform primary fixation of the fragment with one or two K-wires and fixation with a cannulated screw 2.7 mm (optionally 3.5 mm or second screw in case of large bone fragment). Optionally apply additional suture fixation at the dorsal part of the bone, with looping over the plate hook to secure it.

Explantation

INSTRUMENTS	ART.-NO.
Screwdriver, hexagonal, ø2.5, blue handle	IU 7841-00
Screwdriver, T15, round handle	IU 7811-15



- To prevent irritation or joint impingement, the implant must be explanted for biomechanical reasons after healing is complete (at 12 weeks). In case of chronic AC joint separation, explantation should take place after about 16 weeks.

◆ **Note:**

Use the appropriate explantation screwdriver T15 (IU 7811-15) for a safe screw removal. The explantation screwdrivers are not self-retaining and allow for higher torque transmission during screw removal. They should be ordered separately.

The screwdrivers T15 in the set (IU 7825-56) are self-retaining and should not be used for screw explantation.

- Place an incision on the old scar. Manually undo all screws and sequentially remove them.

◆ **Note:**

After manually unlocking all screws, the removal can be performed using a power tool.

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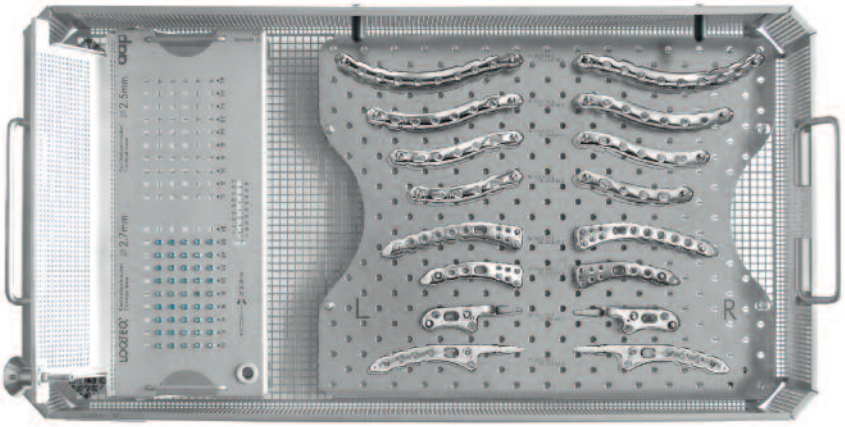
LOQTEQ®

LOQTEQ® Clavicle Plates 2.7/3.5, Set of Implants	IC 6934-00
LOQTEQ® Small Fragment Set, Set of Instruments	IC 6931-10
LOQTEQ® Small Fragment Set, Screw Set, complete	IC 6931-35

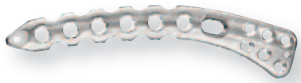
• Trays

LOQTEQ® Clavicle Plates 2.7/3.5, Set of Implants IC 6934-00*



ARTICLE	ART.-NO.
Tray for implants LOQTEQ® Clavicle Plates 2.7/3.5, empty	IC 6934-01
Lid for trays, large	IC 2008-00
Depth gauge for screws, ø2.5 - 3.5	IS 7903-00
Elevatorium bended, width 6 mm, blunt	IU 6010-00
Twist drill ø2.0, L 110, coil 25, quick-coupling	IU 7420-10
Handle with quick coupling, with torque limiter, 1.5 Nm	IU 7707-00
Screwdriver Duo, T8, quick coupling	IU 7815-56
Double drill guide ø2.0/2.5	IU 8125-00
Drill guide for LOQTEQ® Clavicle plates 2.7, I-ø 2.0, blue/gold	IU 8168-20
LOQTEQ® Clavicle Shaft Plate 3.5, 6 holes, L 76, R	PK 3521-06-2
LOQTEQ® Clavicle Shaft Plate 3.5, 7 holes, L 88, R	PK 3521-07-2
LOQTEQ® Clavicle Shaft Plate 3.5, 8 holes, L 95, R	PK 3521-08-2
LOQTEQ® Clavicle Shaft Plate 3.5, 10 holes, L 115, R	PK 3521-10-2
LOQTEQ® Clavicle Shaft Plate 3.5, 6 holes, L 76, L	PK 3522-06-2
LOQTEQ® Clavicle Shaft Plate 3.5, 7 holes, L 88, L	PK 3522-07-2
LOQTEQ® Clavicle Shaft Plate 3.5, 8 holes, L 95, L	PK 3522-08-2
LOQTEQ® Clavicle Shaft Plate 3.5, 10 holes, L 115, L	PK 3522-10-2

LOQTEQ® Sup. Lat. Clavicle Plate 2.7/3.5, 6/4 holes, L 63, R	PK 3531-04-2
LOQTEQ® Sup. Lat. Clavicle Plate 2.7/3.5, 6/7 holes, L 93, R	PK 3531-07-2
LOQTEQ® Sup. Lat. Clavicle Plate 2.7/3.5, 6/4 holes, L 63, L	PK 3532-04-2
LOQTEQ® Sup. Lat. Clavicle Plate 2.7/3.5, 6/7 holes, L 93, L	PK 3532-07-2



LOQTEQ® AcroPlate 3.5, 5 holes, R	PK 3511-05-2
LOQTEQ® AcroPlate 3.5, 5 holes, L	PK 3512-05-2
LOQTEQ® AcroPlate 3.5, 7 holes, R	PK 3511-07-2
LOQTEQ® AcroPlate 3.5, 7 holes, L	PK 3512-07-2

* 2.5/2.7 instruments only!

Please complete with Small Fragment Set Set IC 6931-05/IC 6931-00 or IC 6931-10 and IC 6931-35/IC 6931-30.

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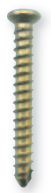
LOQTEQ® Clavicle Plates 2.7/3.5, Screw Rack, extension set

LOQTEQ® Cortical Screw 2.7

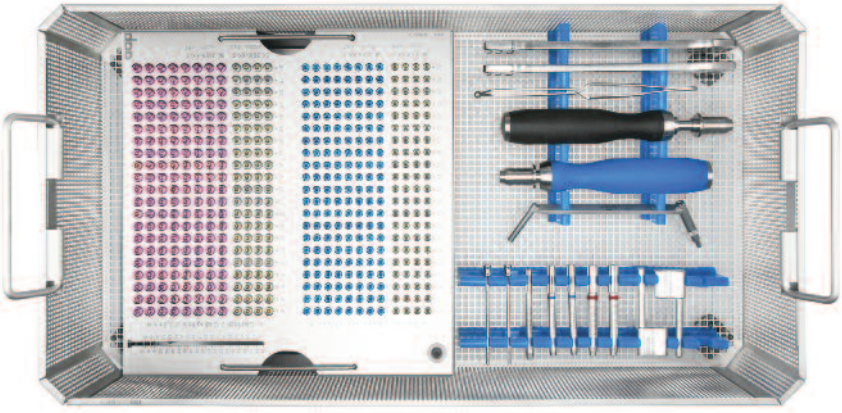
ARTICLE	ART.-NO.
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 10	SK 2726-10-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 12	SK 2726-12-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 14	SK 2726-14-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 16	SK 2726-16-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 18	SK 2726-18-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 20	SK 2726-20-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 22	SK 2726-22-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 24	SK 2726-24-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 26	SK 2726-26-2
LOQTEQ® Cortical Screw 2.7, small head T8, self-tapp. L 28	SK 2726-28-2

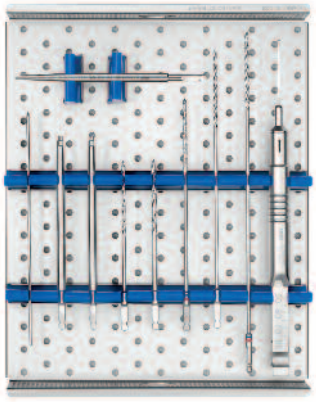
Cortical Screw 2.5

ARTICLE	ART.-NO.
Cortical Screw 2.5, small head T8, self-tapp. L 10	SK 2512-10-2
Cortical Screw 2.5, small head T8, self-tapp. L 12	SK 2512-12-2
Cortical Screw 2.5, small head T8, self-tapp. L 14	SK 2512-14-2
Cortical Screw 2.5, small head T8, self-tapp. L 16	SK 2512-16-2
Cortical Screw 2.5, small head T8, self-tapp. L 18	SK 2512-18-2
Cortical Screw 2.5, small head T8, self-tapp. L 20	SK 2512-20-2
Cortical Screw 2.5, small head T8, self-tapp. L 22	SK 2512-22-2
Cortical Screw 2.5, small head T8, self-tapp. L 24	SK 2512-24-2
Cortical Screw 2.5, small head T8, self-tapp. L 26	SK 2512-26-2
Cortical Screw 2.5, small head T8, self-tapp. L 28	SK 2512-28-2



LOQTEQ® Small Fragment Set, Set of Instruments IC 6931-10





ARTICLE	ART.-NO.
Tray for instruments LOQTEQ® Small Fragment, empty	IC 6931-11
Lid for trays, large	IC 2008-00
Bending iron 1 for small fragment plates, closed	IP 8405-00
Bending iron 2 for small fragment plates, closed	IP 8405-50
Depth gauge for locking screws, small	IS 7904-00
Twist drill ø2.5, L 110, coil 50, quick coupling	IU 7425-00
Twist drill ø2.5, L 180, coil 50, quick coupling	IU 7425-18
Twist drill ø2.7, L 150, coil 50, quick coupling	IU 7427-15
Twist drill ø2.7, L 220, coil 50, quick coupling	IU 7427-22
Twist drill ø3.5, L 110, coil 50, quick coupling	IU 7435-00
Handle for quick coupling, large, cannulated	IU 7706-00
Handle with quick coupling, with torque limiter, 2.0 Nm	IU 7707-20
Screwdriver hexagonal, ø2.5, quick coupling	IU 7825-00
Screwdriver Duo, T15, quick coupling	IU 7825-56
Screw forceps, self-holding	IU 8004-00
Double drill guide, ø2.5/3.5, with spring aided centering	IU 8116-50
Load Drill guide LOQTEQ® 3.5, compression 1 mm	IU 8166-01
Load Drill guide LOQTEQ® 3.5, compression 2 mm	IU 8166-02
Load Drill guide LOQTEQ® 3.5, adjustable up to 2 mm	IU 8166-03
Basic Insert for Load Drill Guide LOQTEQ® 3.5	IU 8166-05
Drill guide for gliding hole LOQTEQ® 3.5, I-ø 2.8, red	IU 8166-10
Reduction sleeve for K-wire ø1.6	IU 8166-16
Drill guide for round hole LOQTEQ® 3.5, I-ø 2.8, blue	IU 8166-20
K-wire with trocar point, ø1.6, L 150	NK 0016-15

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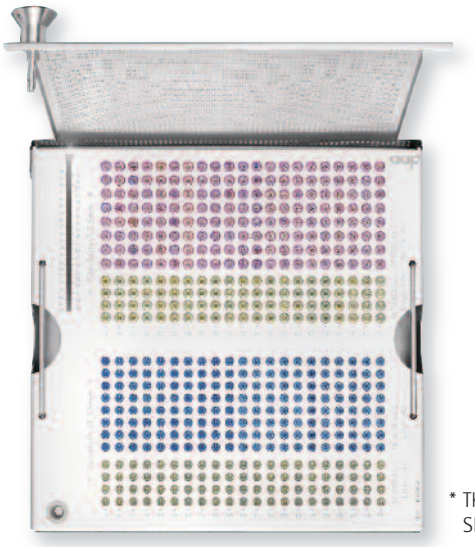
LOQTEQ® Small Fragment Set, Screw Set, complete IC 6931-35*



* The screw set contains the screws SK 3525-xx-2 and SK 3510-xx-2, which must not be used in Clavicle plates.

ARTICLE	ART.-NO.
Screw rack LOQTEQ® Small Fragment, empty	IC 6931-31

LOQTEQ® Cortical Screw 3.5, small head

ARTICLE	ART.-NO.
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 12	SK 3526-12-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 14	SK 3526-14-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 16	SK 3526-16-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 18	SK 3526-18-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 20	SK 3526-20-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 22	SK 3526-22-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 24	SK 3526-24-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 26	SK 3526-26-2
LOQTEQ® Cortical Screw 3.5, small head T15, self-tapp. L 28	SK 3526-28-2

Cortical Screw 3.5, small head

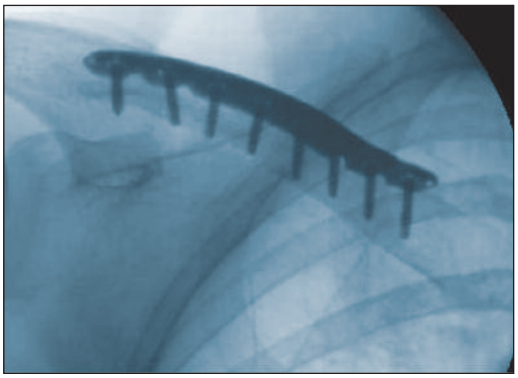
ARTICLE	ART.-NO.
Cortical Screw 3.5, small head, self-tapping, L 12	SK 3512-12-2
Cortical Screw 3.5, small head, self-tapping, L 14	SK 3512-14-2
Cortical Screw 3.5, small head, self-tapping, L 16	SK 3512-16-2
Cortical Screw 3.5, small head, self-tapping, L 18	SK 3512-18-2
Cortical Screw 3.5, small head, self-tapping, L 20	SK 3512-20-2
Cortical Screw 3.5, small head, self-tapping, L 22	SK 3512-22-2
Cortical Screw 3.5, small head, self-tapping, L 24	SK 3512-24-2
Cortical Screw 3.5, small head, self-tapping, L 26	SK 3512-26-2
Cortical Screw 3.5, small head, self-tapping, L 28	SK 3512-28-2

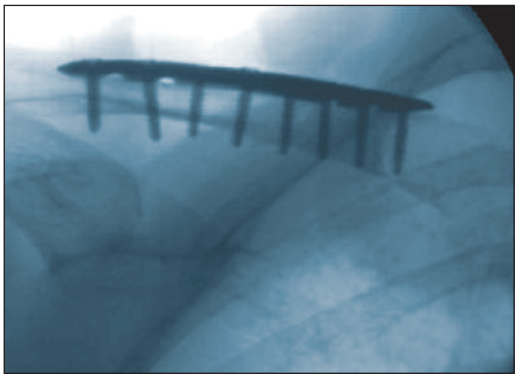
• Case Study

Dislocated clavicle fracture

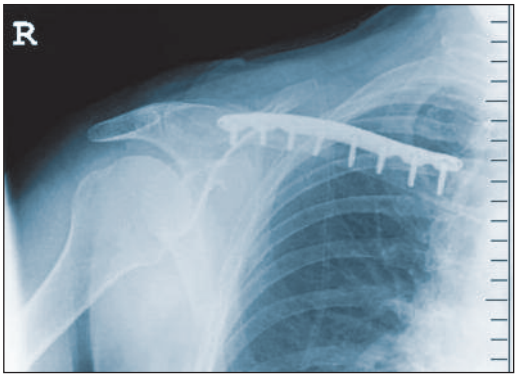
Preoperative

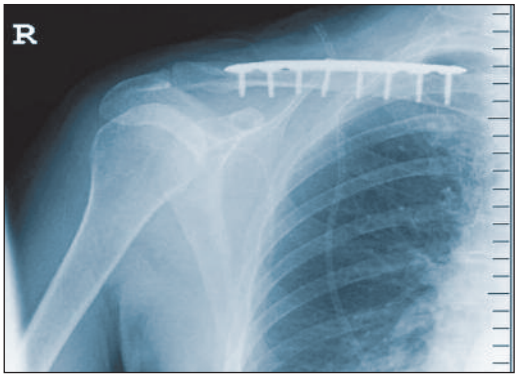
Intraoperative





Postoperative





Clinical case and CT images with the kind permission of Dr. Ulrich Leyer, AGAPLESION BETHESDA Hospital Wuppertal, Germany

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