# 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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# Content

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.

## 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 of the 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 described in this surgical technique are supplied 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.

Never use damaged implants or implants from damaged packaging.



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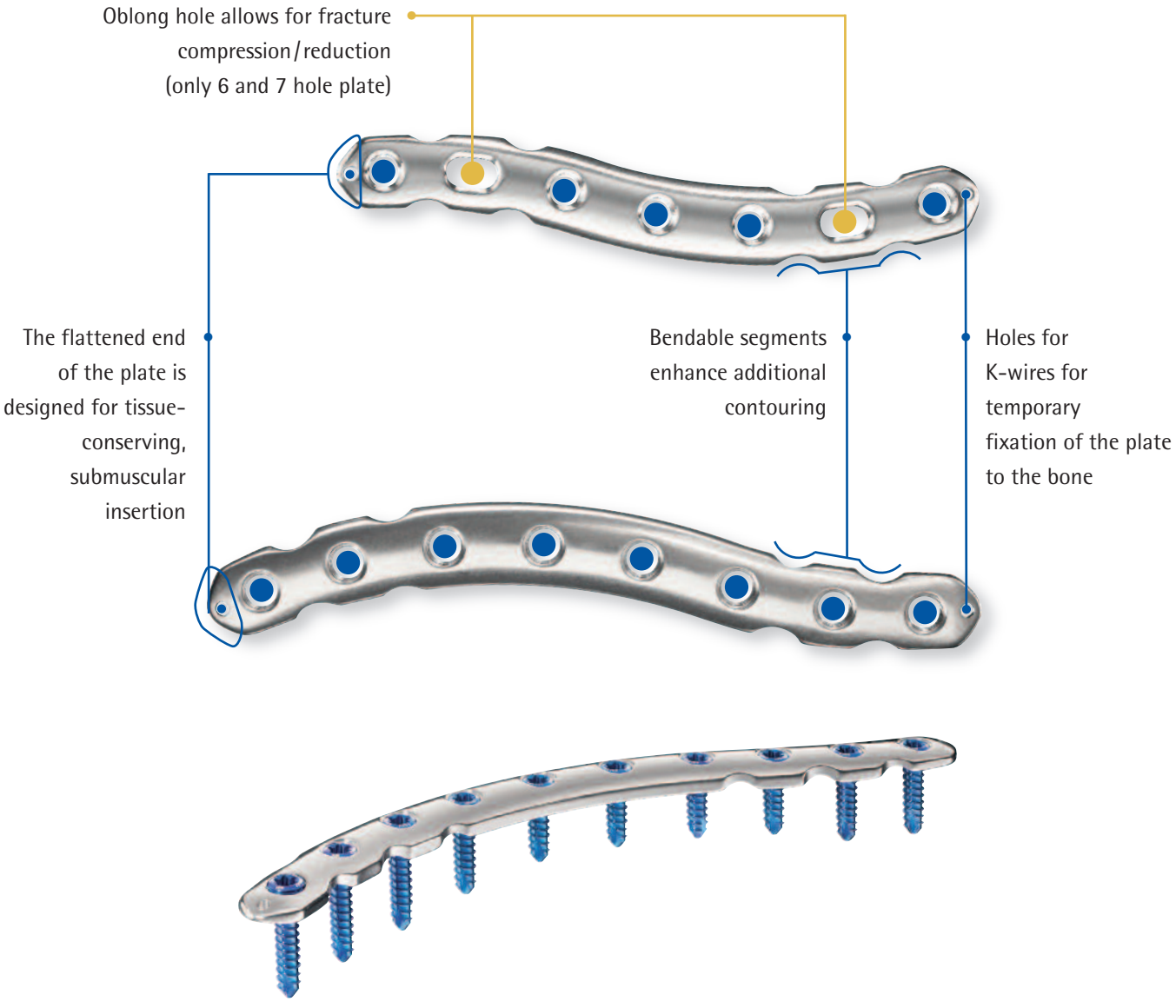
## Features & Benefits

- The anatomical plate design minimizes the need for intraoperative plate contouring
- All plate holes, with the exception of the oblong hole, are compatible with locking as well as cortical screws (gold)
- Minor contact undercuts may help to preserve the blood supply to the periosteum
- Left and right anatomical plates available

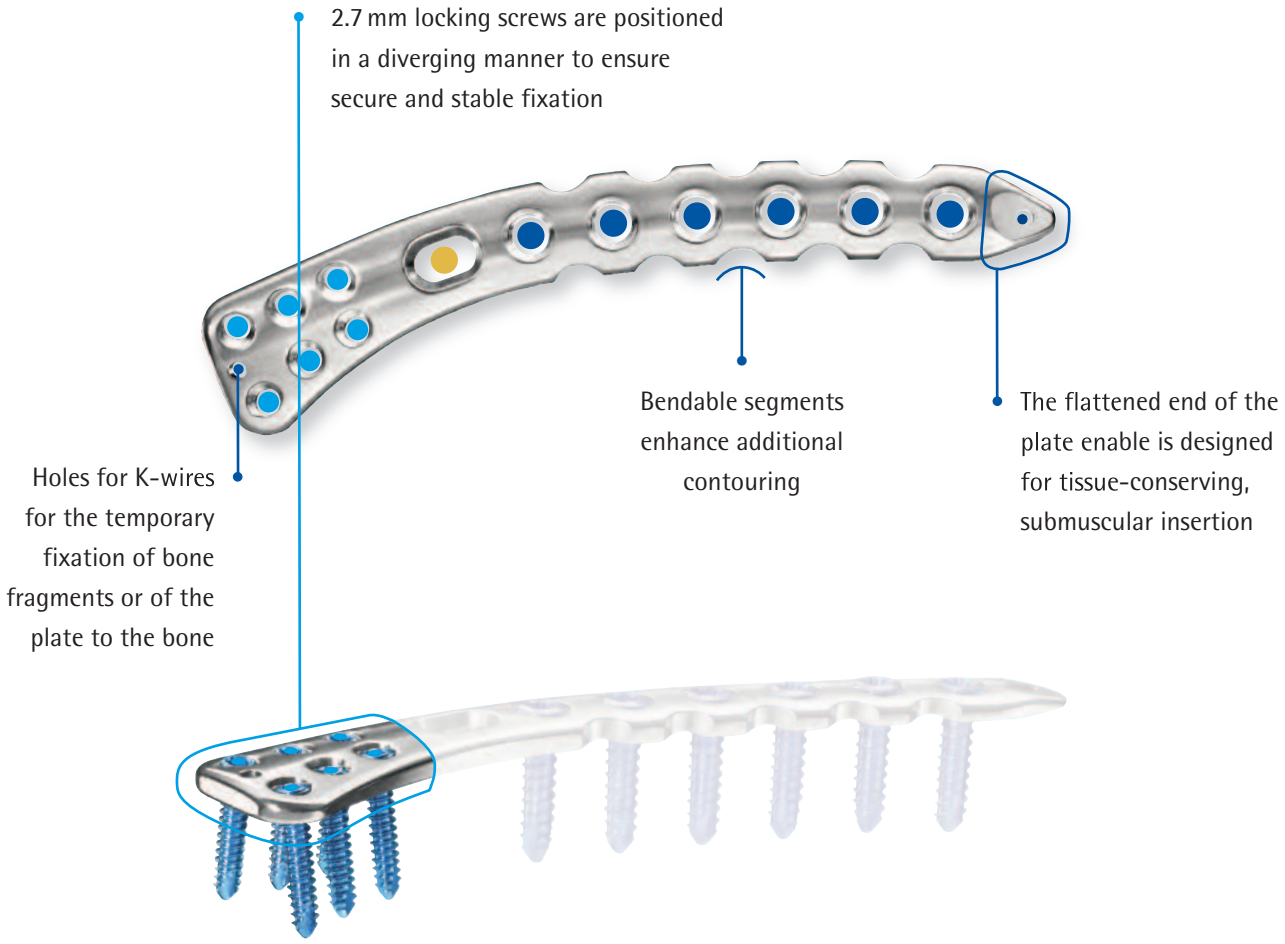
## LOQTEQ® Clavicle Shaft Plate 3.5



## Features & Benefits

- The anatomical plate design minimizes the need for intraoperative plate contouring
- All plate holes, with the exception of the oblong hole, are compatible with locking as well as cortical screws (gold)
- Minor contact undercuts may help to preserve the blood supply to the periosteum
- Left and right anatomical plates available

## LOQTEQ® Superior Lateral Clavicle Plate 2.7/3.5





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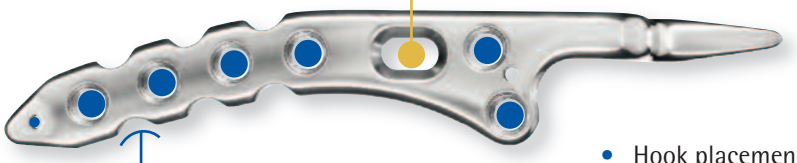
## Features & Benefits

- The anatomical plate design minimizes the need for intraoperative plate contouring
- All plate holes, with the exception of the oblong hole, are compatible with locking as well as cortical screws (gold)
- Minor contact undercuts may help to preserve the blood supply to the periosteum
- Left and right anatomical plates available

## LOQTEQ® AcroPlate 3.5

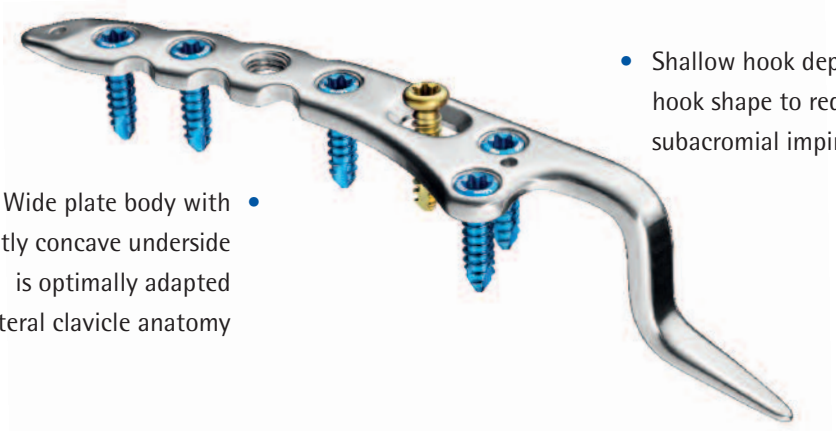
Holes for K-wires for the temporary fixation of bone fragments or of the plate to the bone

The Oblong hole accept 3.5mm cortical screws



Bendable segments enhance additional contouring

- Hook placement dorsal to the joint to protect ligaments
- Flat, wide hook shape (105° angle) - adapted to the acromioclavicular angle
- Shallow hook depth and anatomical hook shape to reduce the risk of subacromial impingement

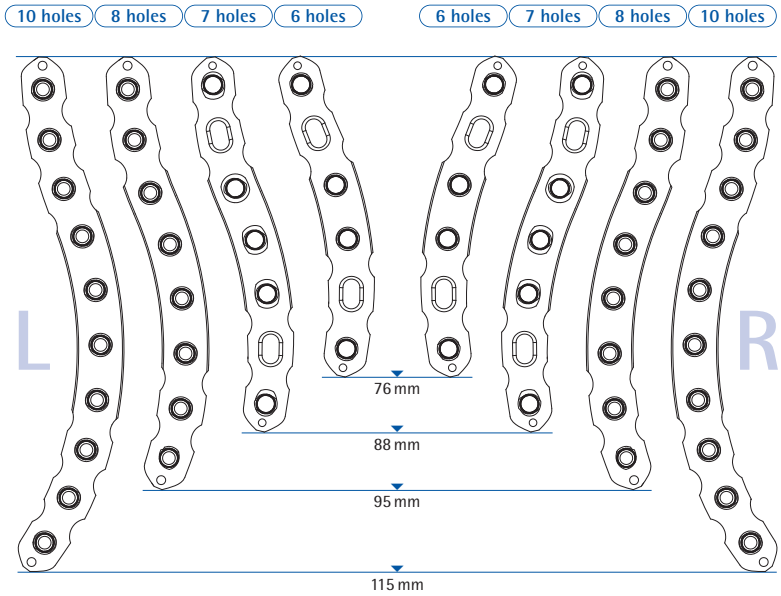


Wide plate body with slightly concave underside is optimally adapted to the lateral clavicle anatomy

## 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.

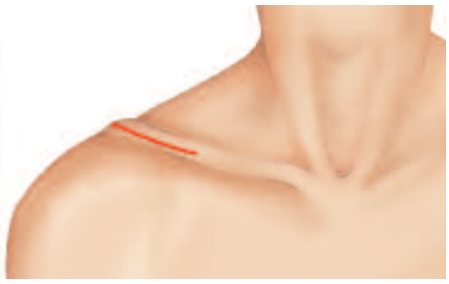



## Patient positioning

- 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.

## Approach

- The following options may be chosen:
  - medial to lateral transverse incision, parallel to the axis of the clavicle
  - vertical incision along Langer's line



- Dissect down to the faccia to expose the Fracture

◆ **IMPORTANT:**
**Care should be taken to preserve the periosteum to maintain good vascularity and promote fracture healing.**



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## Preparing 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 pattern.

◆ **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.**

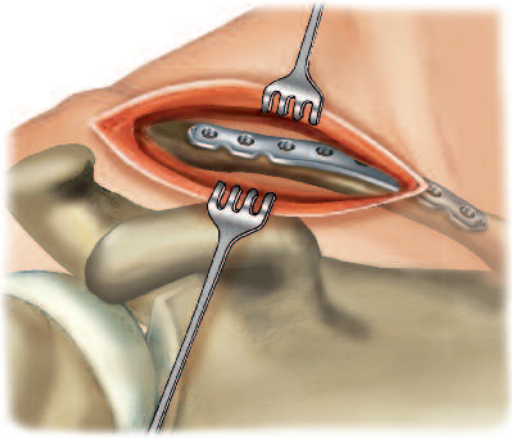
◆ **CAUTION:**

**When contouring implants to the individual patient anatomy, the implants should not be bent back and forth as this may result in implant failure. Do not bend excessively or across the locking holes and avoid any sharp-edged damage by instruments. Do not bend the plate by more than 10°.**

## Reduction and primary fixation

| 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.



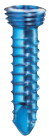
- Temporarily stabilize the fracture using K-wires, reduction forceps, suture materials or lag screws. K-wires can be placed through the plate to ensure correct repositioning. Reduction aids should be placed so as not to interfere with the definitive position of the implant.
- Insert lag screws, if necessary.

◆ **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.**

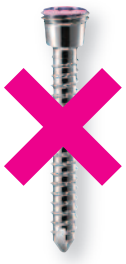
- Position the plate on the superior aspect of the clavicle shaft.

## Insertion of locking screws (blue)



| 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 2.7-3.5, up to L 50 | IS 7903-10 |
| Screwdriver Duo, T15, quick coupling | IU 7825-56 |
| Handle for quick coupling medium, cannulated | IU 7705-00 |
| Handle with quick coupling, with torque limiter, 2.0 Nm | IU 7707-20 |
| Double drill guide ø2.7/3.5, with spring aided centering | IU 8116-60 |

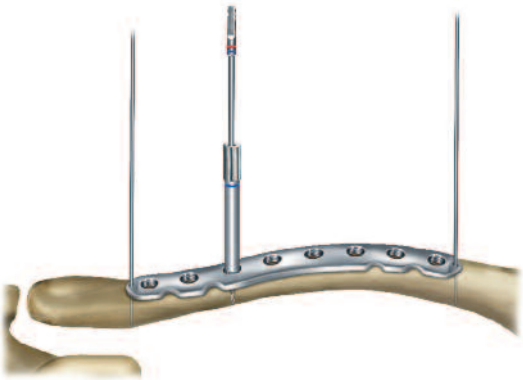
- Determine the combination of screws to be used for fixation. If a combination of locking and non-locking screws will be used, non-locking screws must be inserted first to pull the bone to the plate.



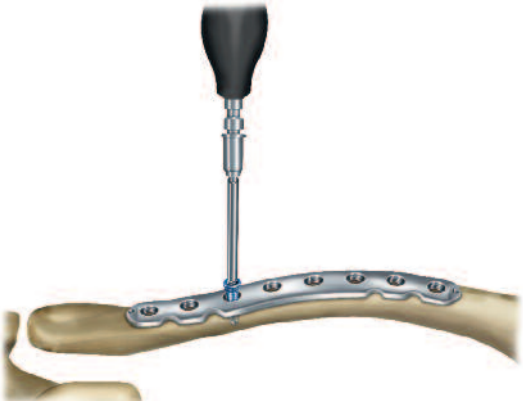
◆ **CAUTION:**

**The LOQTEQ® Clavicle Plates must be used only in combination with cortical screws (gold) and locking screws for round hole (blue). Do not use LOQTEQ® locking compression screws (red), for gliding locking hole, in the clavicula!**

- Temporarily fixate the plate with K-wires.



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



- Insert the appropriate length locking screw 3.5 mm (blue), using the screwdriver T15 and the torque limiter. The optimal torque is reached when an audible click is heard.

◆ **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 cortical bone make sure that the screw head sits flush with the plate. Therefore, it is acceptable in exceptionally hard cortical bone to finish the tightening of the screw without the torque limiter.**

◆ **NOTE:**

**Check plate position using fluoroscopy.**



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- Secure all necessary plate holes in this way.

◆ **CAUTION:**

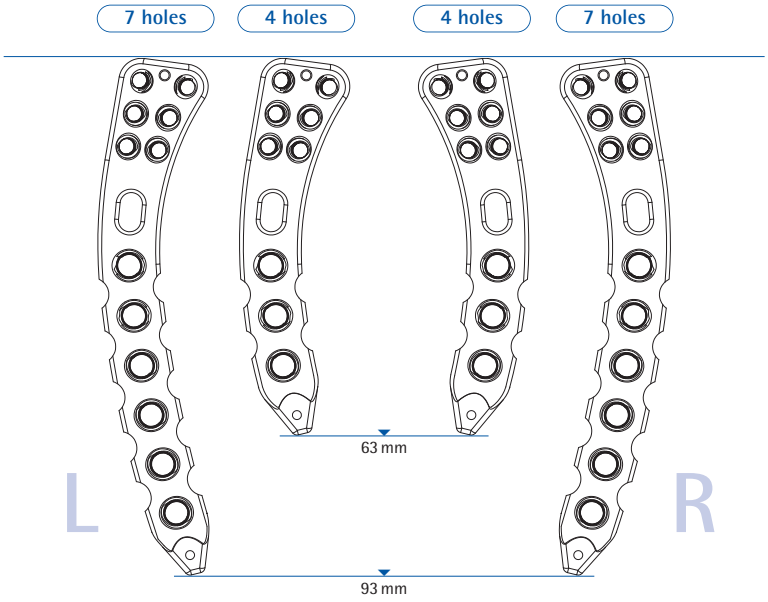
**Avoid over-penetration of the clavicle´s far cortical bone due to the risk of damage to neurovascular structures located inferiorly.**

- Alternatively, 3.5 mm cortical screws can be used, see page 14, „Insertion of cortical screws“.

## 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.

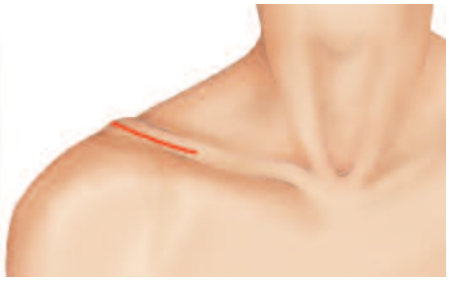



## Patient positioning

- 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.

## Approach

- 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:
**Care should be taken to preserve the periosteum to maintain good vascularity and promote fracture healing.**



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# Superior Lateral Clavicle Plate 2.7/3.5

## Preparing 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 |

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

◆ **NOTE:**

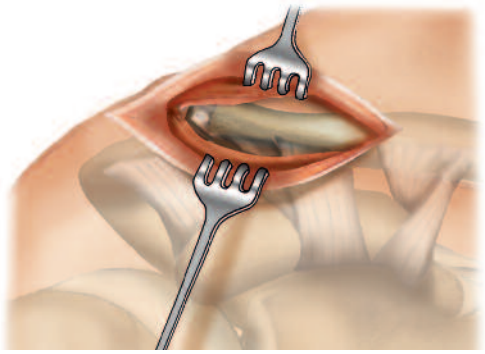
**LOQTEQ® Clavicle Plates are anatomically preformed. The plates may be contoured to adapt to individual patient anatomy, if clinically necessary. Use bending irons to adapt the plates.**

◆ **CAUTION:**

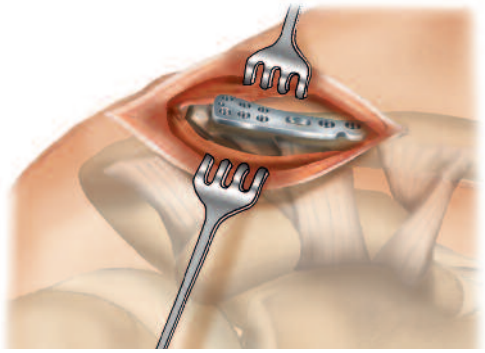
**When contouring implants to the individual patient anatomy, the implants should not be bent back and forth as this may result in implant failure. Do not bend excessively or across the locking holes and avoid any sharp-edged damage by instruments. Do not bend the plate by more than 10°.**

## Reduction and primary fixation

| 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 placed 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.



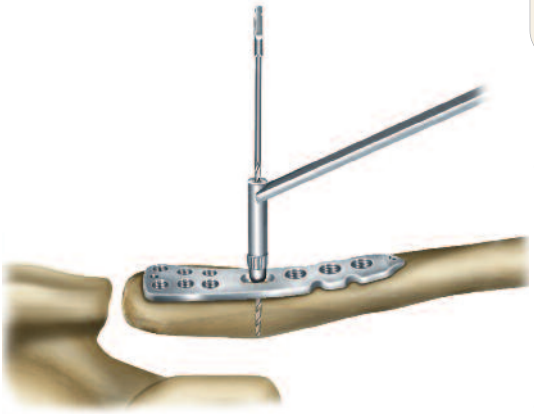
◆ **NOTE:**

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

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

## Insertion of cortical screws (gold)

| INSTRUMENTS | ART.-NO. |
|---|---|
| Double drill guide, ø2.7/3.5, with spring aided centering | IU 8116-60 |
| Twist Drill ø2.7, L 150, coil 50, quick coupling | IU 7427-15 |
| Depth gauge for screws 2.7-3.5, up to L 50 | IS 7903-10 |
| Screwdriver Duo, T15, quick coupling | IU 7825-56 |
| Handle for quick coupling medium, cannulated | IU 7705-00 |



- For the primary fixation of the plate shaft, K-wires can be used or a non-locking cortical screw 3.5mm (gold) can be inserted into the oblong hole. For this purpose use a double drill guide and a drill bit ø2.7 and drill to the desired depth. Remove the double drill guide.

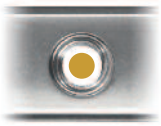
- Then determine the length of the screw using the depth gauge and insert a non-locking cortical screw 3.5 mm (gold) of appropriate length by using the screwdriver T15. The plate can be pulled against the bone using this screw.

◆ **NOTE:**

**Securing the oblong hole before inserting screws in other plate holes can facilitate the positioning of the plate on the bone.**

◆ **CAUTION:**

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



- For inserting a non-locking cortical screw 3.5 mm (gold) in a round hole, use the double drill guide ø2.7/3.5. Drill using a twist drill ø2.7, determine the length of the screw using the depth gauge, and insert a non-locking cortical screw 3.5 mm (gold) of the appropriate length.

- To insert a cortical screw 2.5mm (gold) in the lateral plate part, use the threaded drill guide (light blue) and drill to the desired depth with a drill ø2.0. Remove the drill guide, determine screw length with the depth gauge and insert an appropriate length screw.

- Check plate position using fluoroscopy and adjust if required.



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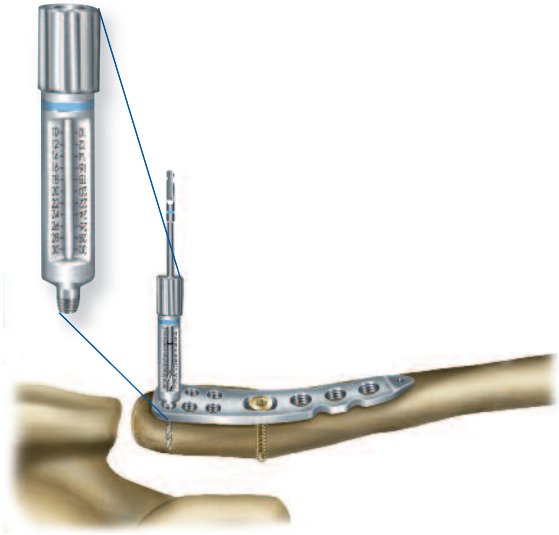
# Superior Lateral Clavicle Plate 2.7/3.5

## Insertion of locking screws (light blue)

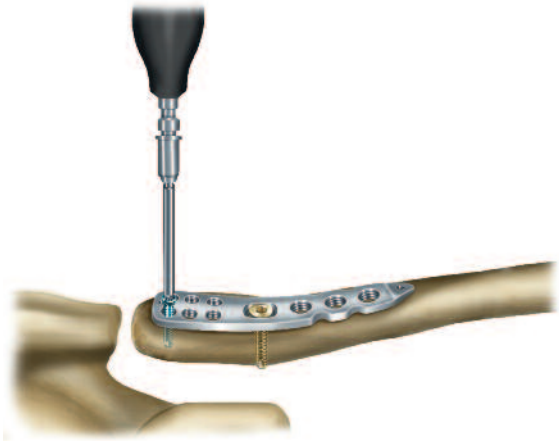
| INSTRUMENTS | ART.-NO. |
|---|---|
| Drill guide for LOQTEQ® Clavicle Plates 2.7, I-ø2.0, light blue | IU 8168-20 |
| Twist drill ø2.0, L 110, coil 25, quick coupling | IU 7420-10 |
| Depth gauge for screws 2.7-3.5, up to L 50 | IS 7903-10 |
| Screwdriver Duo, T8, quick coupling | IU 7815-56 |
| Handle round with quick coupling, with torque limiter 1.5 Nm | IU 7707-00 |



- 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. Alternatively, the screw length can be determined by reading off the drill depth at the drill guide (light blue / gold). The drill features a special marking for this purpose.

- Insert the appropriate length locking cortical screw 2.7 mm (light blue), using screwdriver T8 and the handle with torque limiter 1.5 Nm. The optimal torque is reached when an audible click is heard.



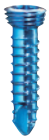
◆ **NOTE:**
**Check plate position using fluoroscopy.**

◆ **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 cortical bone make sure that the screw head sits flush with the plate. Therefore, it is acceptable in exceptionally hard cortical bone to finish the tightening of the screw without the torque limiter.**

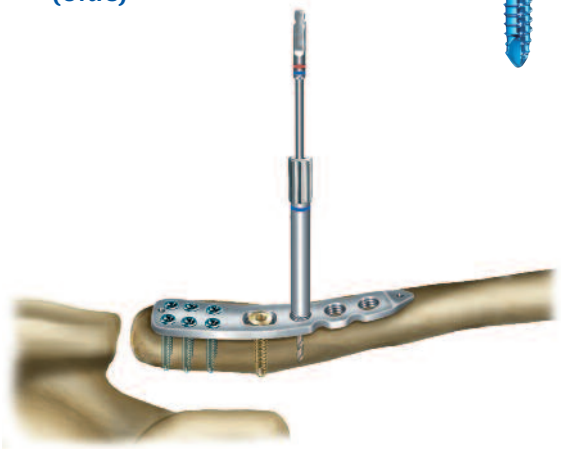
- Secure all lateral plate holes as necessary and remove the K-wires.

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

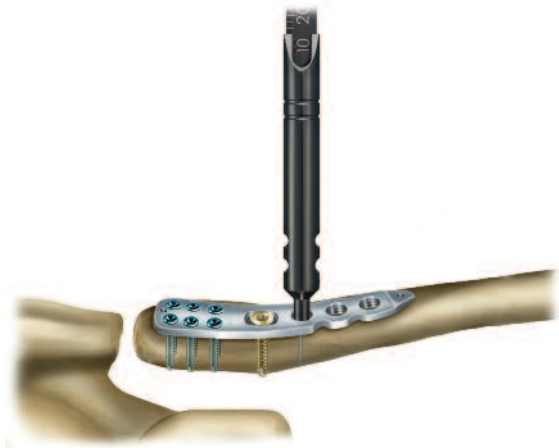
## Insertion of locking screws (blue)



| INSTRUMENTS | ART.-NO. |
|---|---|
| Drill guide for round hole LOQTEQ® 3.5, I-ø2.8, blue | IU 8116-20 |
| Twist Drill ø2.7, L 150, coil 50, quick coupling | IU 7427-15 |
| Depth gauge for screws 2.7-3.5, up to L 50 | IS 7903-10 |
| Screwdriver Duo, T15, quick coupling | IU 7825-56 |
| Handle for quick coupling medium, cannulated | IU 7705-00 |



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



- 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.

- Insert the appropriate length locking cortical screw 3.5 mm (blue), using screwdriver T15 and torque limiter 2.0 Nm. The optimal torque is reached when an audible click is heard.

◆ **NOTE:**
**Check plate position using fluoroscopy.**

◆ **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 cortical bone make sure that the screw head sits flush with the plate. Therefore, it is acceptable in exceptionally hard cortical bone to finish the tightening of the screw without the torque limiter.**

- Secure all necessary plate holes in the shaft in this way.

◆ **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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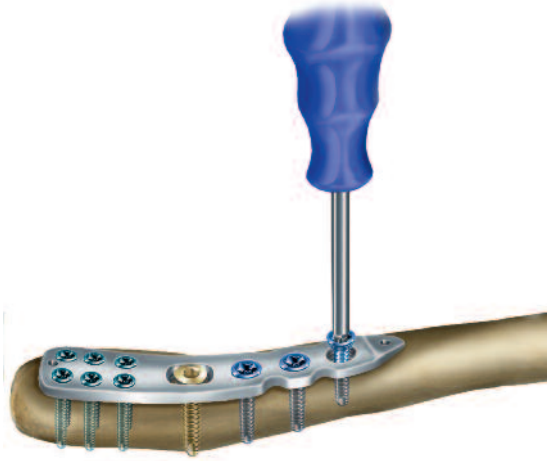
| INSTRUMENTS | ART.-NO. |
|---|---|
| Screwdriver, T8, round handle | IU 7811-08 |
| Screwdriver, T15, round handle | IU 7811-15 |



◆ **NOTE:**

**The T8 (IU 7815-56) and T15 (IU 7825-56) screwdriver in the set are self-retaining and should not be used for screw removal.**

- Use the appropriate explantation screwdriver for safe removal of a screw. Explantation screwdrivers are not self-retaining, penetrate further into the screw head and thus permit a higher torque when removing screws. They are not included in the set as standard and must be ordered separately.

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

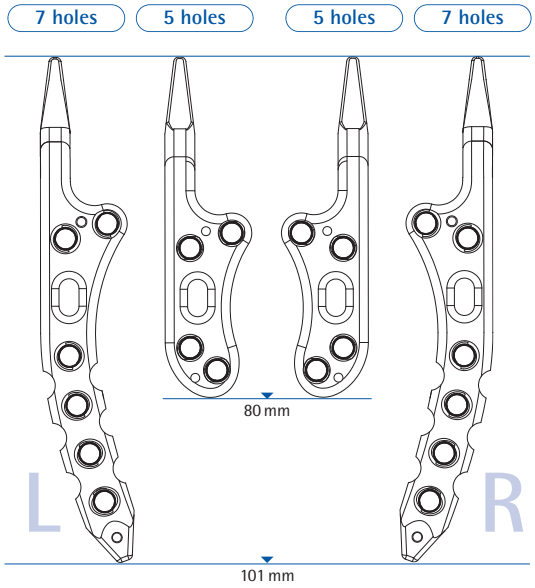
◆ **NOTE:**

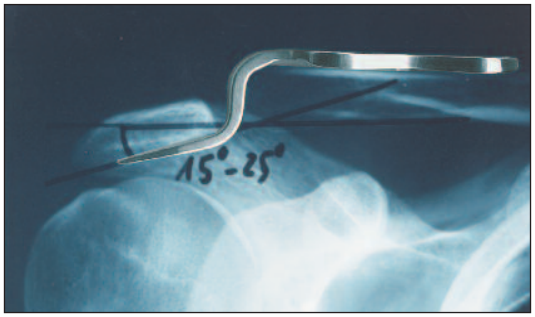
**After manually unlocking all screws, the removal can be performed using a power tool.**

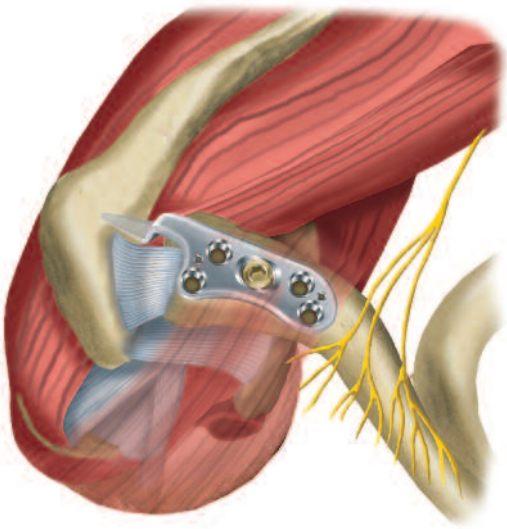
The LOQTEQ® AcroPlate 3.5 was developed with Dr. Dreithaler (Berlin, Germany) and is used for the treatment of AC joint luxations and lateral clavicle fractures. The described surgical procedure allows for anatomical reconstruction and early functional mobilization. The LOQTEQ® AcroPlate 3.5 maintains the reduction of the lateral clavicle and minimizes movement at the fracture site without limiting the rotation of the clavicle.

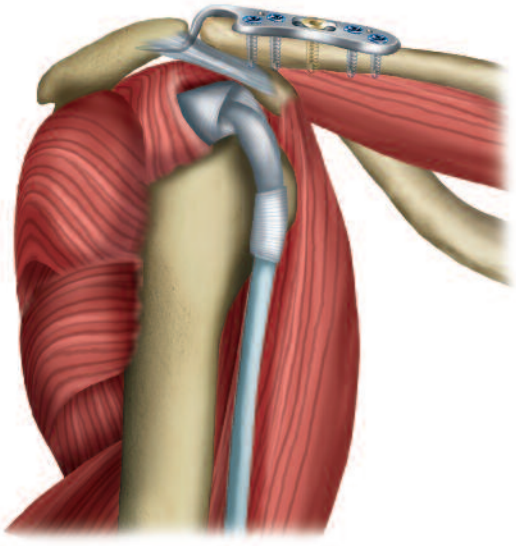
## Preoperative planning

- 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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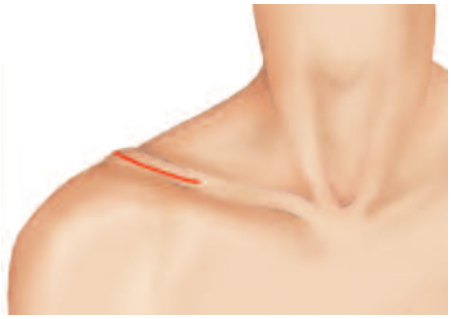
## Patient positioning

- 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.

## Approach

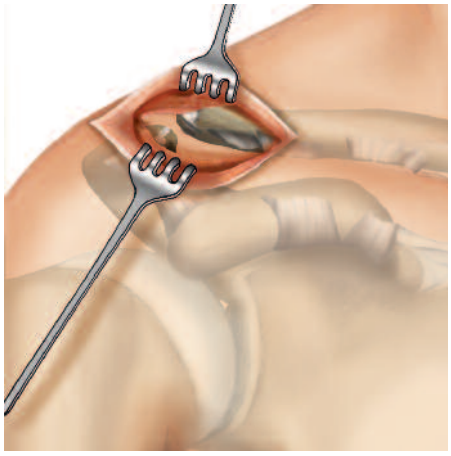
| INSTRUMENTS | ART.-NO. |
|---|---|
| Elevatorium small, bended | IU 6010-00 |

- 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.

## Reduction and primary fixation

| 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.

- Insert the hook of the LOQTEQ® AcroPlate 3.5 beneath the acromion in the dorsal area of the AC joint.
- Reduction of the clavicle by pressing down on the plate.
- Position and temporarily secure the plate on the clavicle, either manually or using K-wires.
- K-wires can be placed through the plate to ensure correct repositioning. Reduction aids must not interfere with the definitive position of the implant.

◆ NOTE:
**The plate hook must be aligned in touch with the acromion.**

- 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.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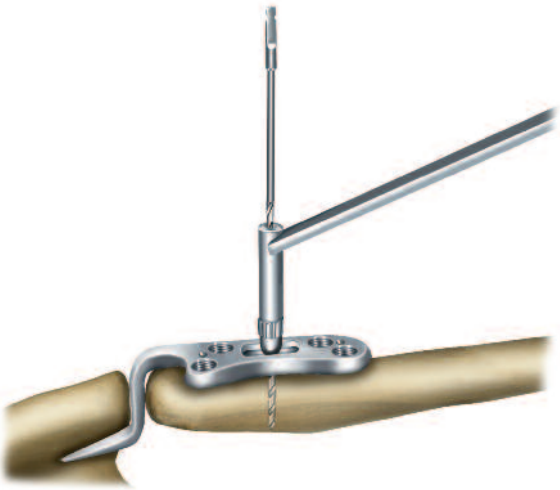
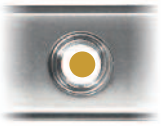
## Insertion of cortical screws (gold)

- 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.

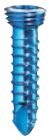


- To achieve stable fixation, at least three 3.5 mm screws should be used.

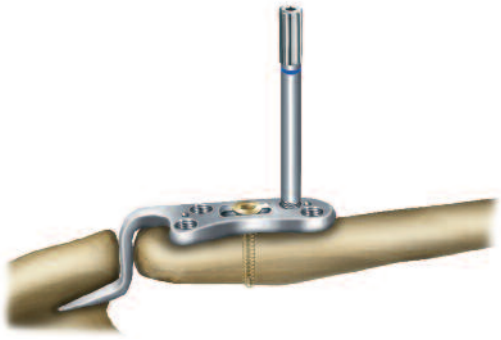
- **Please, follow the instructions on page 14!**



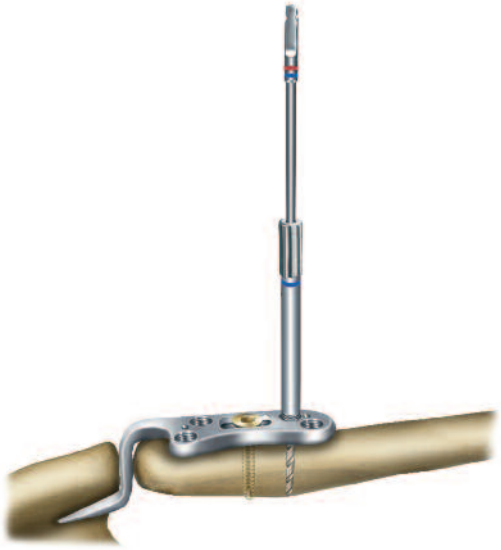
## Insertion of locking screws (blue)



| 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 2.7-3.5, up to L 50 | IS 7903-10 |
| Screwdriver Duo, T15, quick coupling | IU 7825-56 |
| Handle with quick coupling, with torque limiter, 2.0 Nm | IU 7707-20 |



- 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.



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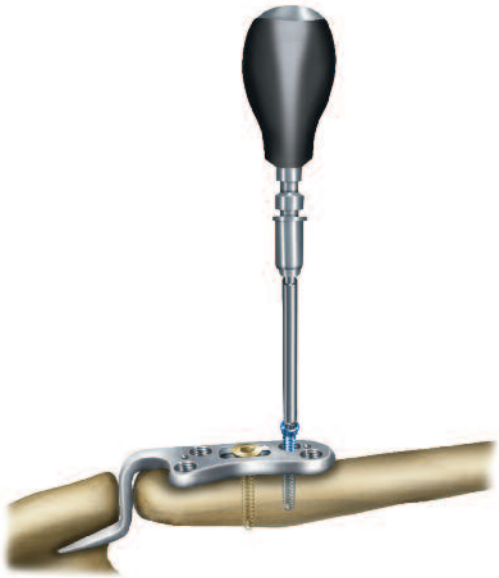


- Insert the appropriate locking cortical screw 3.5 mm (blue) using screwdriver T15 and torque limiter 2.0 Nm. The optimal torque is reached when an audible click is heard.

◆ **Note:**
**Check plate position using fluoroscopy.**

◆ **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.**

- Secure all round locking holes in this way.

- 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.**

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.

## Preoperative planning

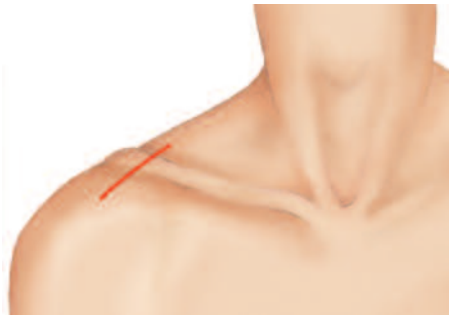
- see Page 18

## Patient positioning

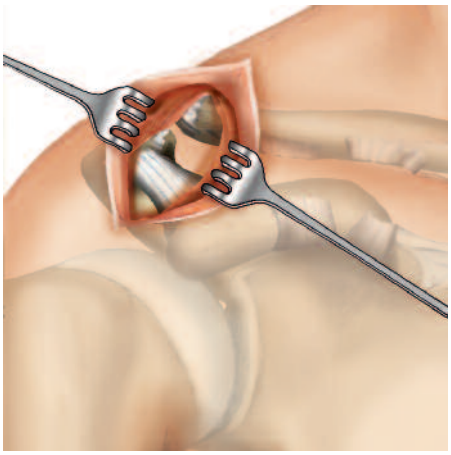
- The patient is positioned in the beach chair position. This facilitates AP and axial imaging. Ensure that the arm can be intraoperatively moved.

## Approach

- 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!)



◆ NOTE:
**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.**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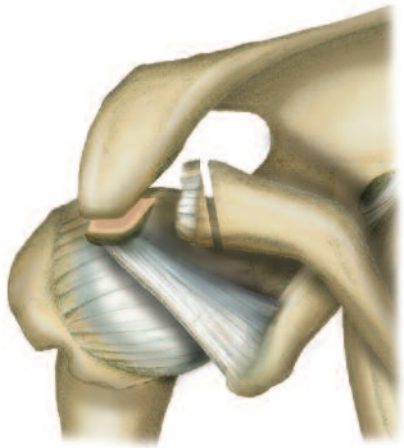
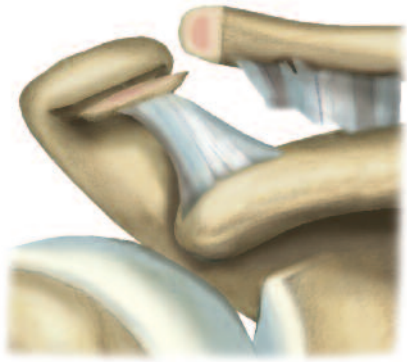
## Osteotomy of the lateral clavicle and ligament transfer

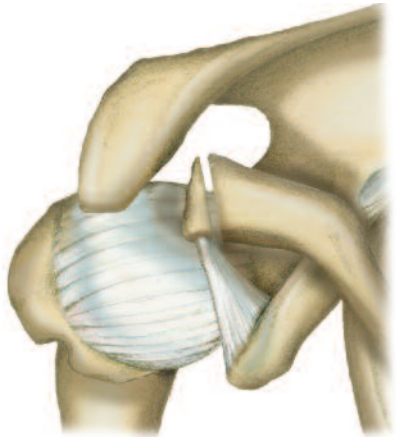
- Perform a wedge-shaped osteotomy at the anterior margin of the acromion with the coracoacromial ligament to harvest an oblique bone block approximately 1.2 x 1.2 cm in size.



- 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.

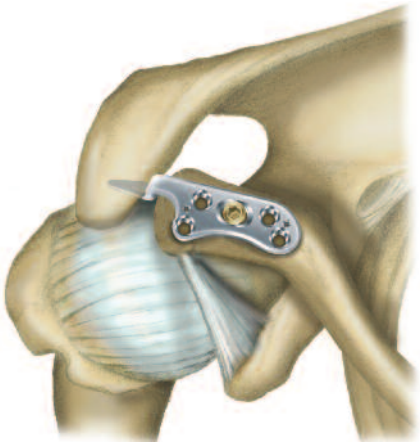


- Attach the acromial bone block to the lateral clavicle (below the deltoid origin!).

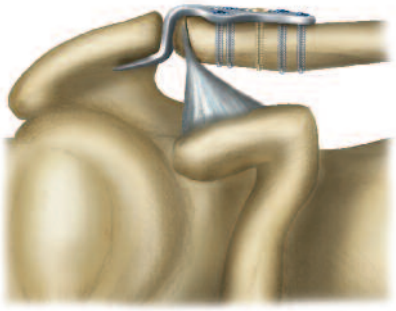


- Reduction of the clavicle and insertion of the plate.

## Reduction and primary fixation



- Use an elevatorium to remove 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.



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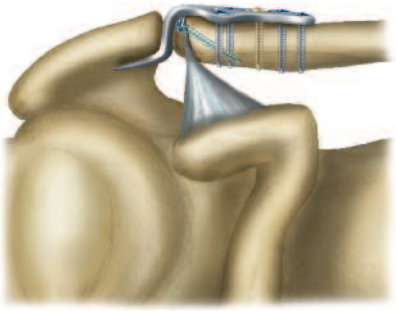
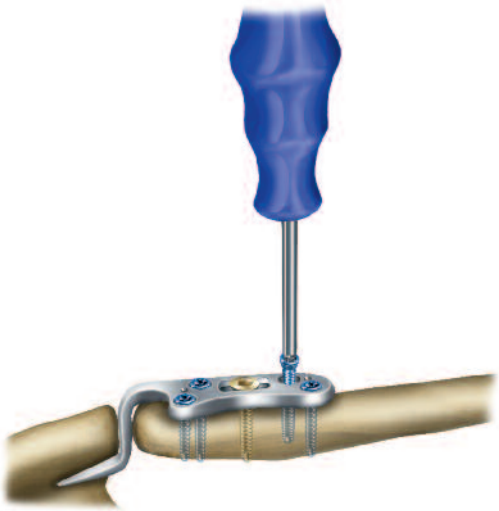
| INSTRUMENTS | ART.-NO. |
|---|---|
| K-wire with trocar point, ø1.6, L 150 | NK 0016-15 |



- 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. |
|---|---|
| Explantation screwdriver, T15, round handle | IU 7811-15 |



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

◆ **Note:**
**The T8 (IU 7815-56) and T15 (IU 7825-56) screwdriver in the set are self-retaining and should not be used for screw removal.**

- Use the appropriate explantation screwdriver for safe removal of a screw. Explantation screwdrivers are not self-retaining, penetrate further into the screw head and thus permit a higher torque when removing screws. They are not included in the set as standard and must be ordered separately.

- 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.**

### LOQTEQ® Clavicle Shaft Plate 3.5

| HOLES | LENGTH (mm) | LEFT | RIGHT |
|---|---|---|---|
| 6 | 76 | PK 3522-06-2 | PK 3521-06-2 |
| 7 | 88 | PK 3522-07-2 | PK 3521-07-2 |
| 8 | 95 | PK 3522-08-2 | PK 3521-08-2 |
| 10 | 115 | PK 3522-10-2 | PK 3521-10-2 |

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

| HOLES | LENGTH (mm) | LEFT | RIGHT |
|---|---|---|---|
| 6/4 | 63 | PK 3532-04-2 | PK 3531-04-2 |
| 6/7 | 93 | PK 3532-07-2 | PK 3531-07-2 |

### LOQTEQ® AcroPlate 3.5

| HOLES | LEFT | RIGHT |
|---|---|---|
| 5 | PK 3512-05-2 | PK 3511-05-2 |
| 7 | PK 3512-07-2 | PK 3511-07-2 |



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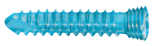
### LOQTEQ® Cortical Screw 2.7, small head, T8, self-tapping



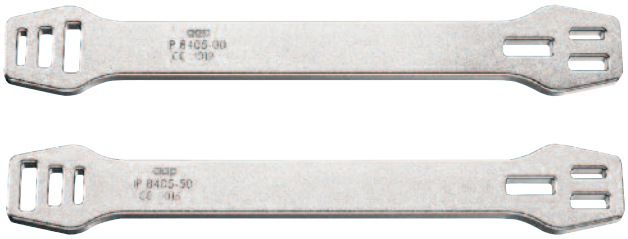
| | |
|---|---|
| L 10 | SK 2726-10-2 |
| L 12 | SK 2726-12-2 |
| L 14 | SK 2726-14-2 |
| L 16 | SK 2726-16-2 |
| L 18 | SK 2726-18-2 |
| L 20 | SK 2726-20-2 |
| L 22 | SK 2726-22-2 |
| L 24 | SK 2726-24-2 |
| L 26 | SK 2726-26-2 |
| L 28 | SK 2726-28-2 |

### LOQTEQ® Cortical Screw 3.5, small head, T15, self-tapping

| | |
|---|---|
| - | - |
| L 12 | SK 3526-12-2 |
| L 14 | SK 3526-14-2 |
| L 16 | SK 3526-16-2 |
| L 18 | SK 3526-18-2 |
| L 20 | SK 3526-20-2 |
| L 22 | SK 3526-22-2 |
| L 24 | SK 3526-24-2 |
| L 26 | SK 3526-26-2 |
| L 28 | SK 3526-28-2 |

### Cortical Screw 3.5, T15, self-tapping

| | |
|---|---|
| - | - |
| L 12 | SK 3514-12-2 |
| L 14 | SK 3514-14-2 |
| L 16 | SK 3514-16-2 |
| L 18 | SK 3514-18-2 |
| L 20 | SK 3514-20-2 |
| L 22 | SK 3514-22-2 |
| L 24 | SK 3514-24-2 |
| L 26 | SK 3514-26-2 |
| L 28 | SK 3514-28-2 |



| | |
|---|---|
| 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 screws 2.7-3.5, up to L 50 | IS 7903-10 |

| | |
|---|---|
| Elovarorium small, bended | IU 6010-00 |


| | |
|---|---|
| Twist drill ø2.0, L 110, coil 25, quick coupling | IU 7420-10* |
| Twist drill ø2.7, L 150, coil 50, quick coupling | IU 7427-15* |
| Twist drill ø3.5, L 110, coil 50, quick coupling | IU 7435-00* |

*** For ordering single use drill guides please add „-1U“ to the article number (e.g. IU 7420-10-1U)**

| | |
|---|---|
| Handle for quick coupling, medium, cannulated | IU 7705-00 |

| | |
|---|---|
| Handle with quick coupling, with torque limiter 1.5 Nm | IU 7707-00 |

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Handle with quick coupling, with torque limiter 2.0Nm IU 7707-20

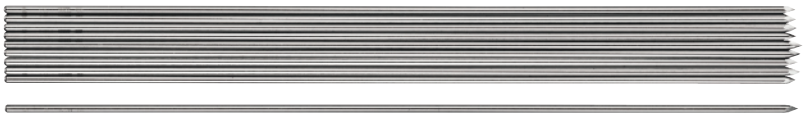
Screwdriver Duo, T8, quick coupling IU 7815-56

Screwdriver Duo, T15, quick coupling IU 7825-56

Double drill guide ø2.7/3.5, with spring aided centering IU 8116-60

Drill guide for round hole LOQTEQ® 3.5, I-ø 2.4, blue IU 8166-20

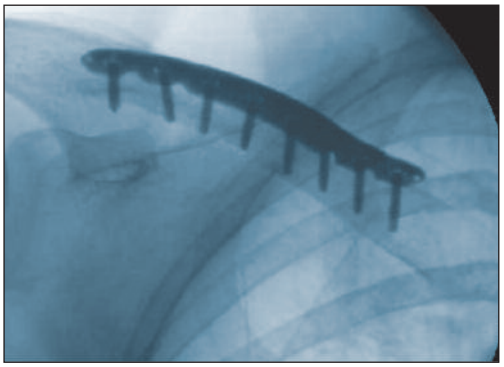
Drill guide for LOQTEQ® Clavicle Plates 2.7, I-ø2.0, light blue IU 8168-20

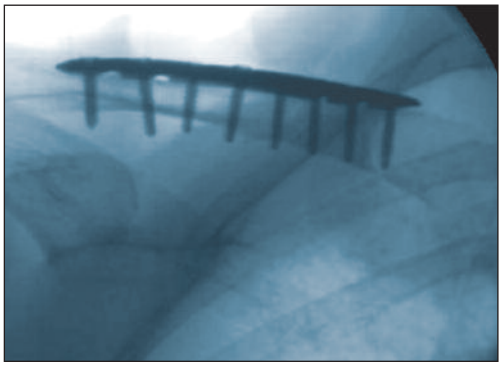


K-wire with trocar point, ø1.6, L 150 NK 0016-15

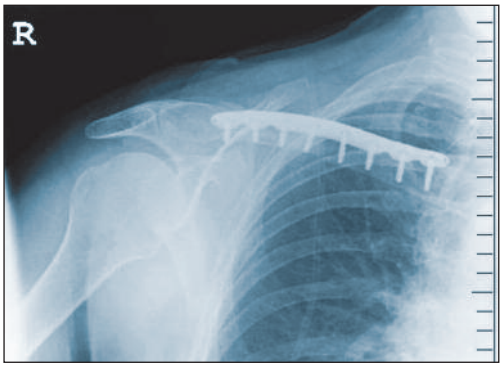
## Preoperative

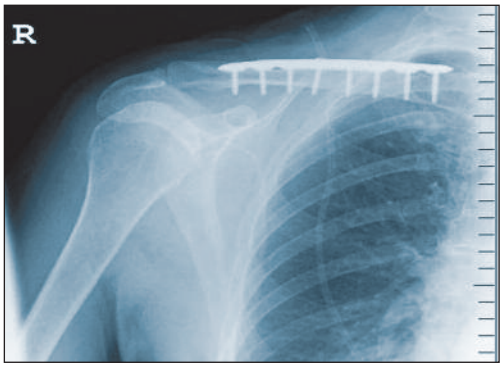

## Intraoperative





## Postoperative




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



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