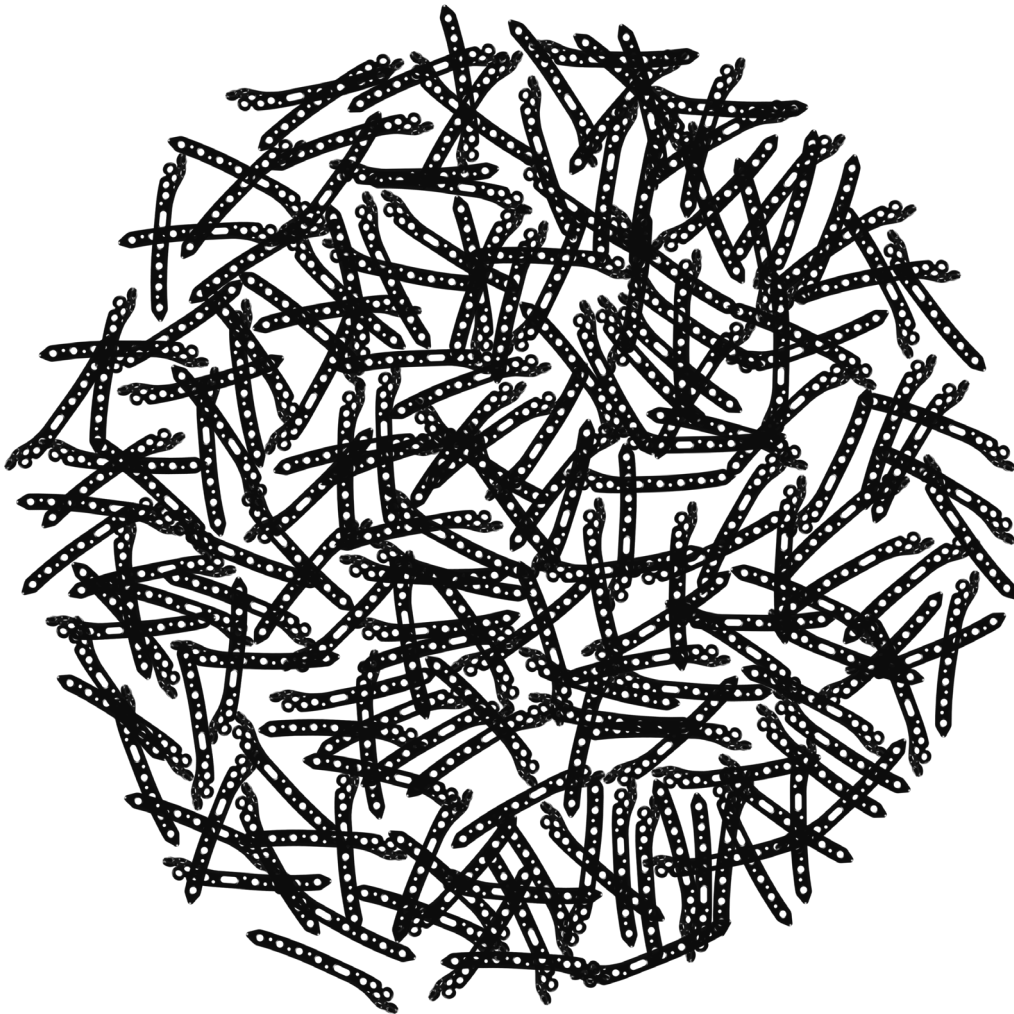


ITS.

Implants
trauma



DUL

Distal Ulna Locking Plate

All ITS plates are preformed anatomically as a matter of principle. If adjustment of the plate to the shape of the bone is required, this is possible by carefully bending gently in one direction once. Particular care is required when bending in the region of a plate hole, as deformation of the plate may lead to a failure of the locking mechanism. The plate must not be buckled or bent several times. This is particularly important in the case of titanium implants, to prevent material fatigue and subsequent failure. The method of bending is the conscious responsibility of the operating doctor; I.T.S. GmbH can accept no liability whatsoever for this.

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Introduction



○ Preface

The Distal Ulna Locking Plate is a plate system which can be implanted with locking screws adjusted to the contour of the distal ulna.

The plate is concealed by the muscles due to its palmar location. Therefore, metal removal is not always necessary.

The ulnar head is stabilized using locking screws. The junction to the neck region is supported by the plate configuration.

Use of locking screws in the proximal section increases rigidity.



○ Screws

32271-XX Cortical Screw, D=2.7mm

61203-100 Spiral Drill, D=2.0mm, L=100mm, AO Connector

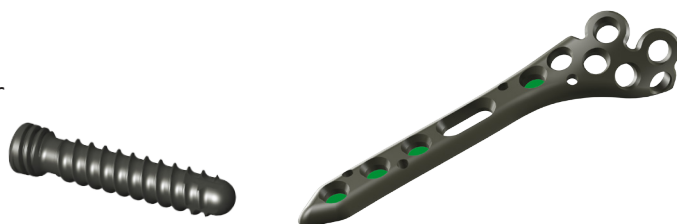
56095-70 Screwdriver, Torque, T9x70



37304-XX Cortical Stabilization Screw, D=3.0mm, RH

61243-100 Spiral Drill, D=2.4mm, L=100mm, AO Connector

56095-70 Screwdriver, Torque, T9x70



37303-XX Cancellous Stabilization Screw, D=3.0mm, RH

61203-100 Spiral Drill, D=2.0mm, L=100mm, AO Connector

56095-70 Screwdriver, Torque, T9x70



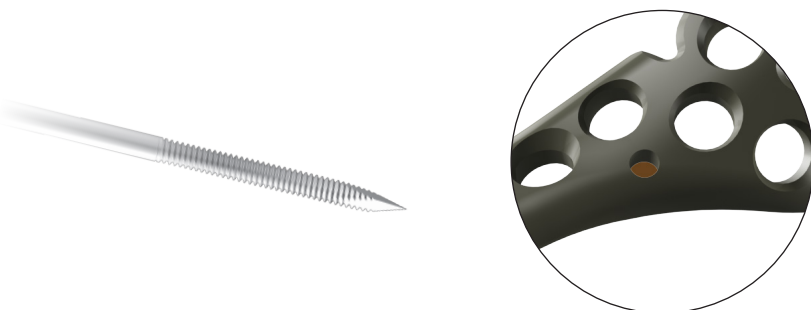
37241-XX Stabilization Screw, D=2.4mm, RH

61183-100 Spiral Drill, D=1.8mm, L=100mm, AO Connector

56095-70 Screwdriver, Torque, T9x70



35164-150 Guide Wire, Steel, D=1.6mm, L=150mm, TR, with thread



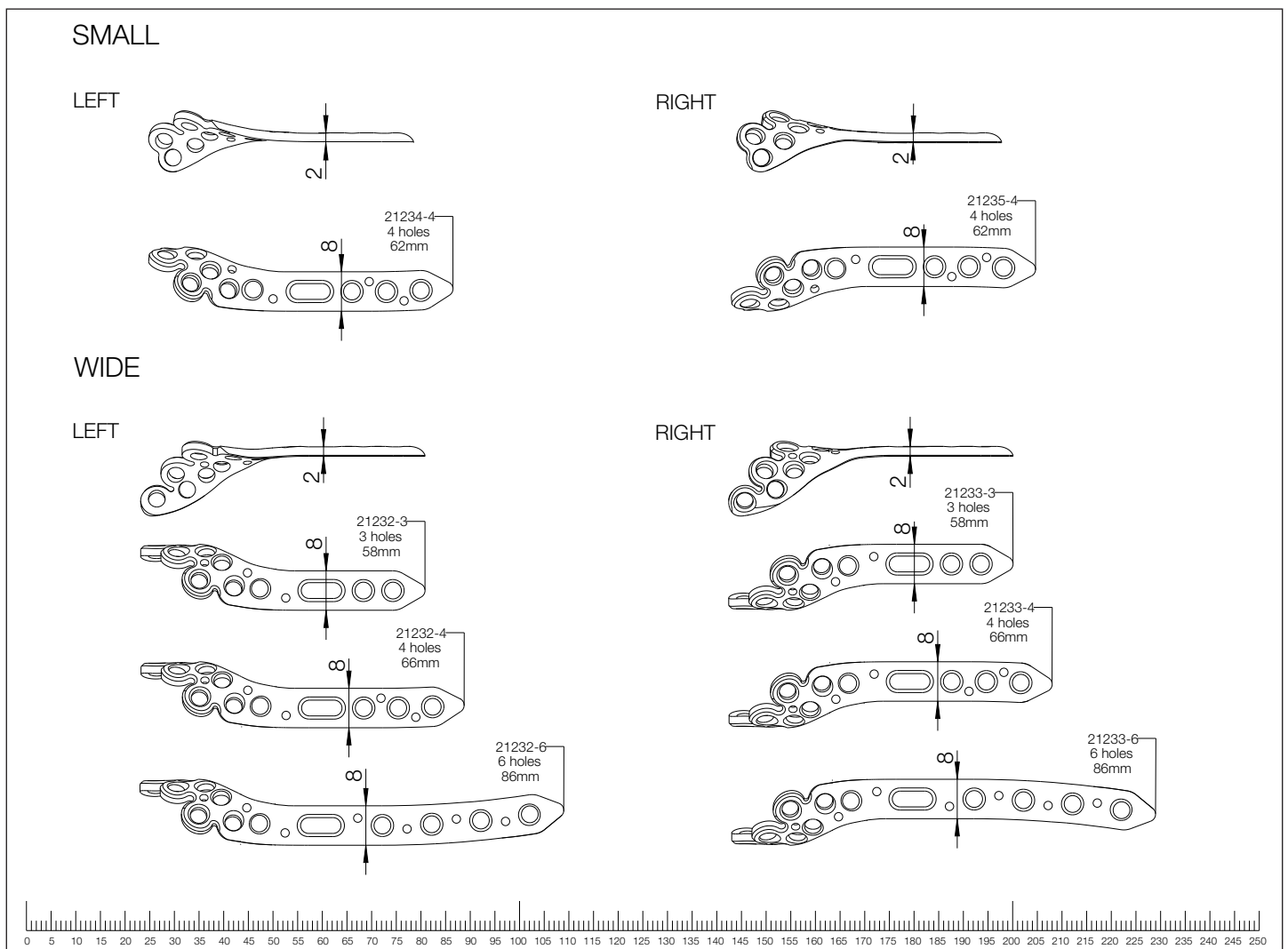
○ Properties

Properties of the material:

- ◆ Plate material: Titanium
- ◆ Material of screws: TiAl6V4 ELI
- ◆ Easier removal of the implant after the fracture has healed
- ◆ Improved fatigue strength of the implant
- ◆ Reduced risk of cold welding
- ◆ Reduced risk of inflammation and allergy

Properties of the implant:

- ◆ Multi-directional Locking
- ◆ Anatomical plate design
- ◆ Left/right version
- ◆ Wide/small version
- ◆ K-Wire holes for preliminary plate fixation
- ◆ 5 distal plate holes for optimal reconstruction of the distal radio-ulnar joint (DRUJ)
- ◆ Oblong hole for optimal positioning and adjustment of ulna length
- ◆ Pointed proximal plate end for percutaneous insertion
- ◆ Plate lengths: 3, 4, 6-hole



◦ Indications, Contraindications & Time of operation

Indications:

- ◆ Fractures of the ulnar head
- ◆ Multifragmentary fractures of the ulnar head
- ◆ Subcapital fractures of the ulnar head
- ◆ Metaphyseal comminuted fractures of the distal ulna
- ◆ Combined ulnar head and ulnar shaft fractures

Contraindications:

- ◆ Existing infections in the fracture zone and operation area
- ◆ Common situations that do not allow osteosynthesis (osteoporosis)
- ◆ Obesity
- ◆ Lack of patient compliance

Time of operation:

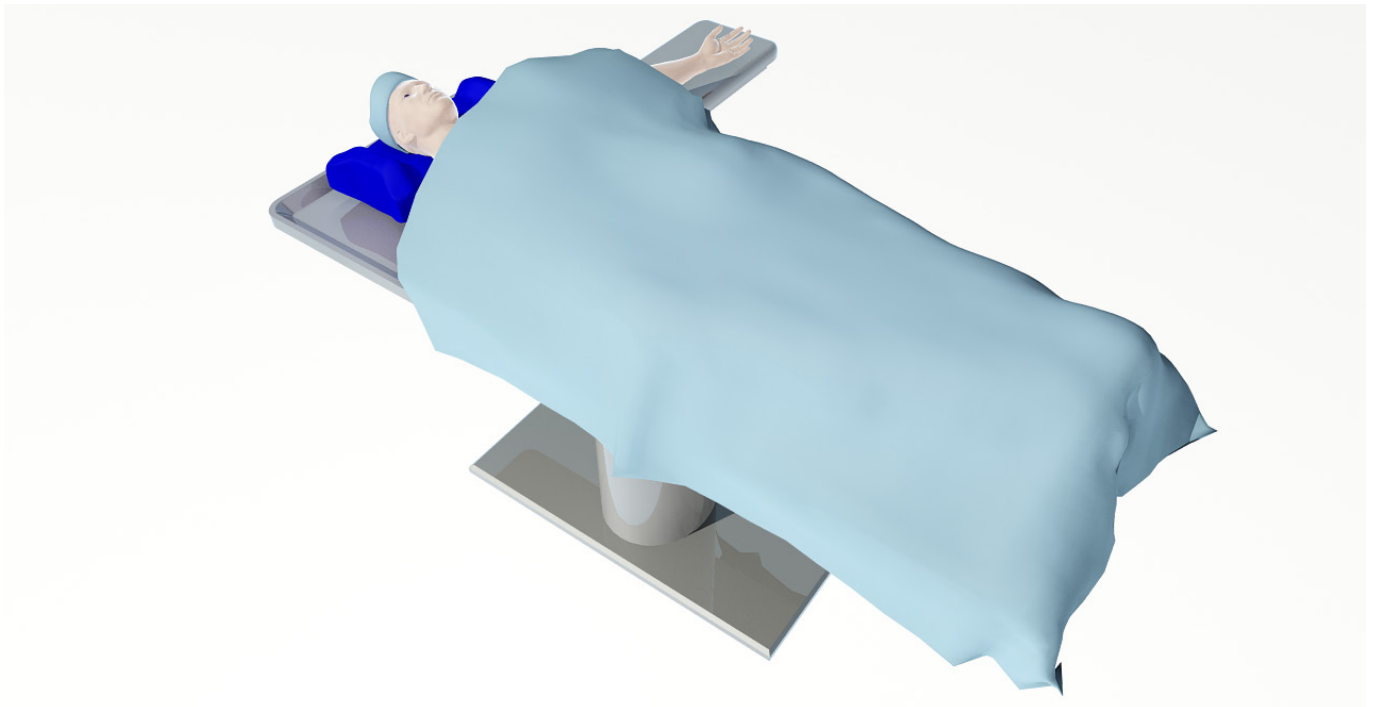
- ◆ Immediately after trauma or delayed
- ◆ After regression of swelling

Surgical Technique

2.

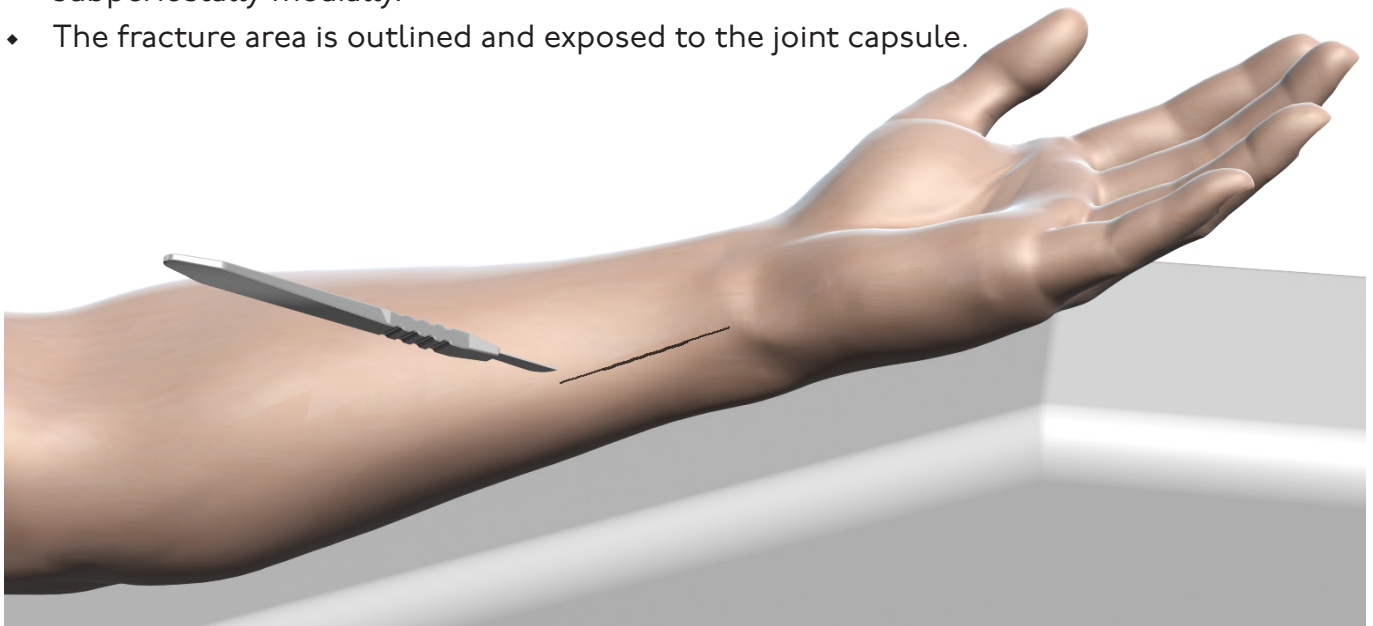
○ Pre-operative patient preparation

- ◆ The patient is placed in the supine position with pneumatic deprivation of blood supply
- ◆ The hand is positioned on a radiolucent surgical hand table



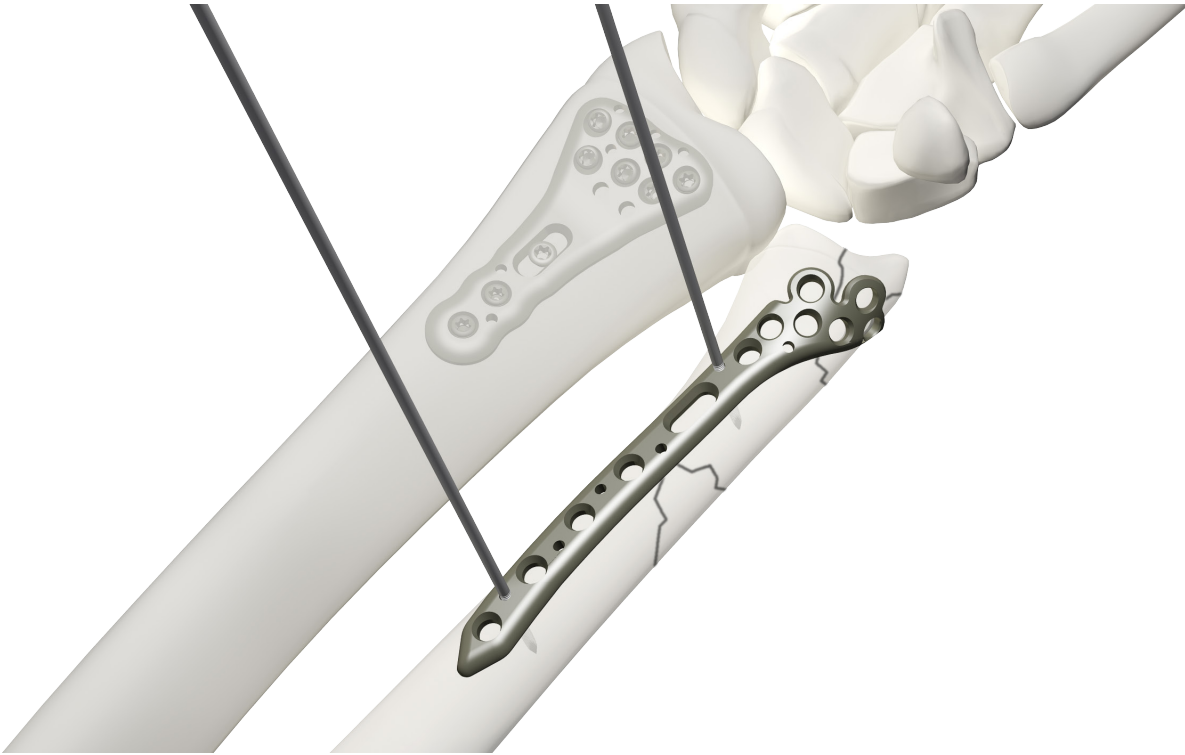
○ Exposure

- ◆ The skin incision is made approx. 5mm to the palmar side of the mid lateral line from the tip of the ulna head handle to 5-7cm proximally.
- ◆ After sectioning of the skin and the subcutis, outline the superficial branch and the ulnar nerve in the distal region.
- ◆ Sharply separate the pronator quadratus muscle on the ulnar side and hold subperiostally medially.
- ◆ The fracture area is outlined and exposed to the joint capsule.

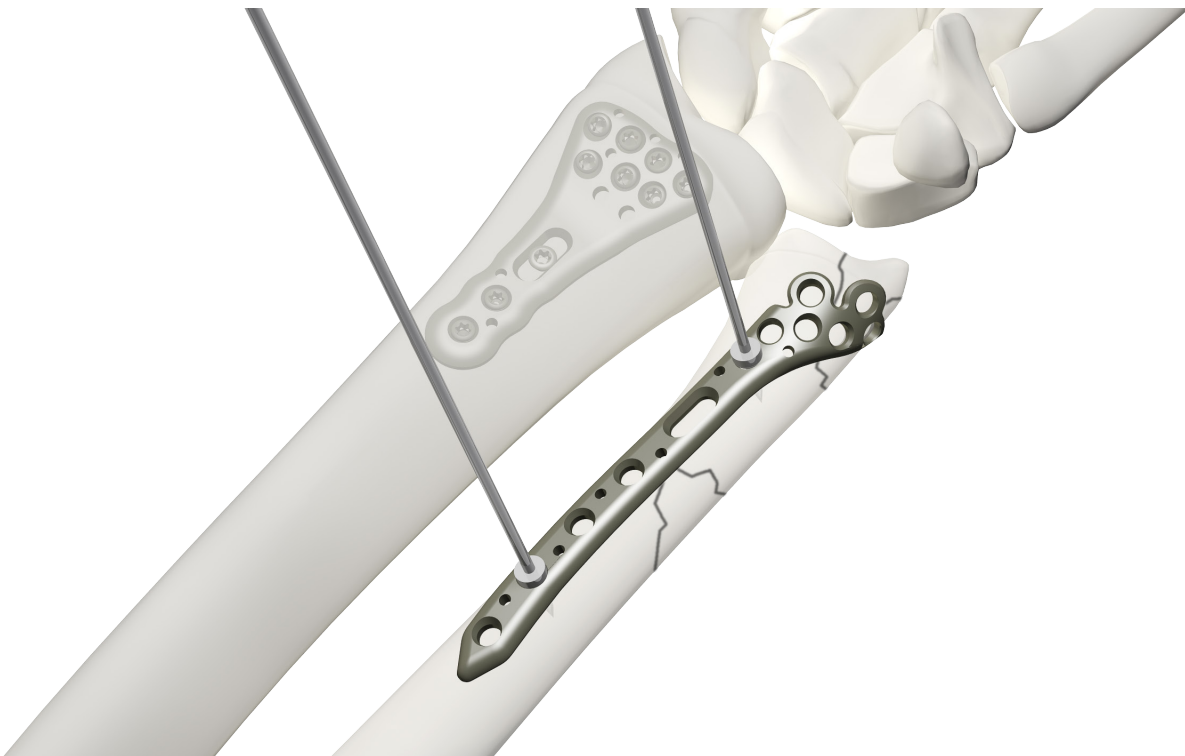


○ Plate insertion

- ◆ Temporary reduction of the fractured sections with the aid of forceps or guide wires
- ◆ Subsequent control under fluoroscopy



Optionally, the plate can be stabilized using the ITS. Temporary Plate Holder (58164-I50).

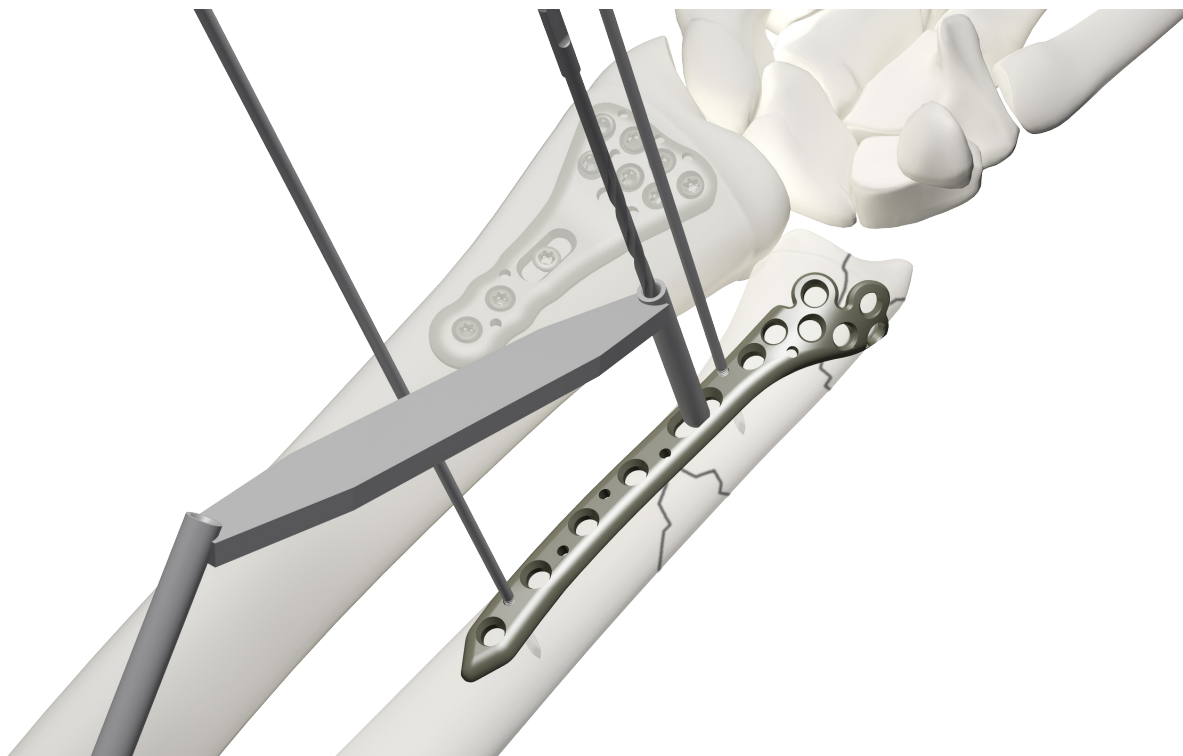


○ Placement of the screws

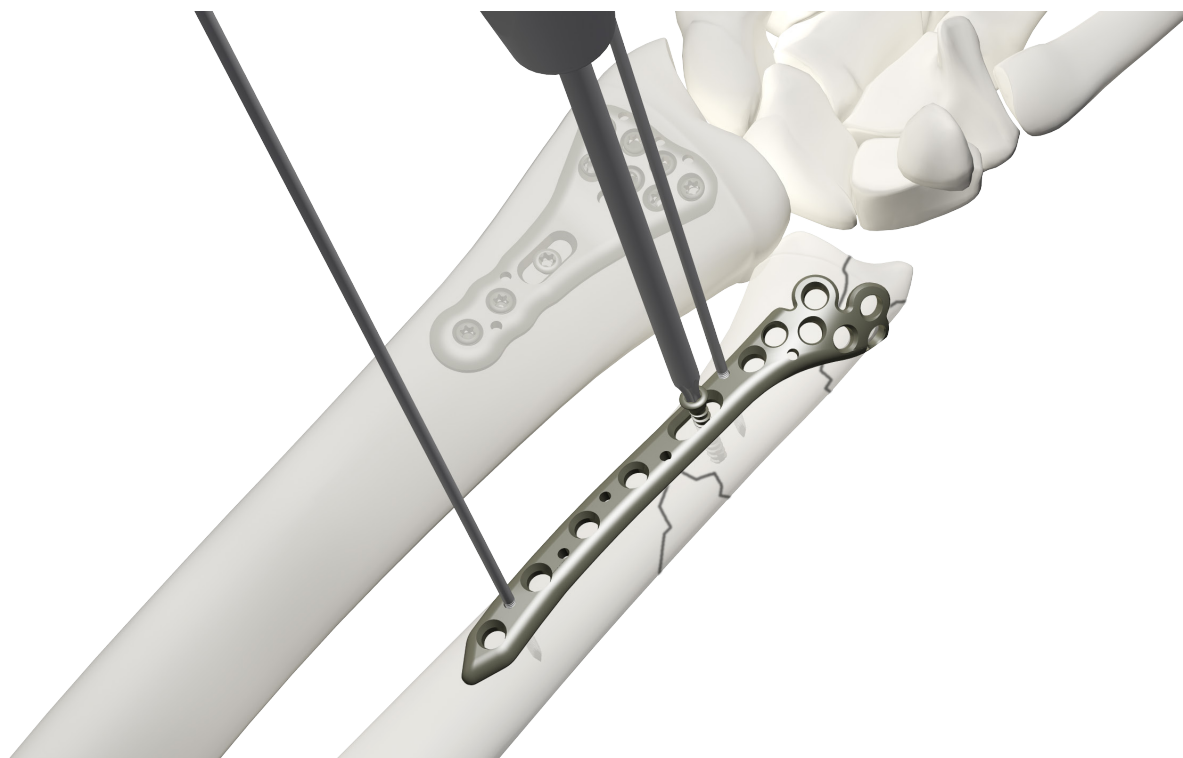
With the spiral drill, D=2.0mm, L=100mm, AO Connector (61203-100), drill through the drill guide, D=2.0/2.4mm (62215) into the oblong hole.

Determine appropriate length using the depth gauge, PROlock II (59026).

Insert the D=2.7mm cortical screw (32271-XX) with the screwdriver, Torque, T9x70 (56095-70).

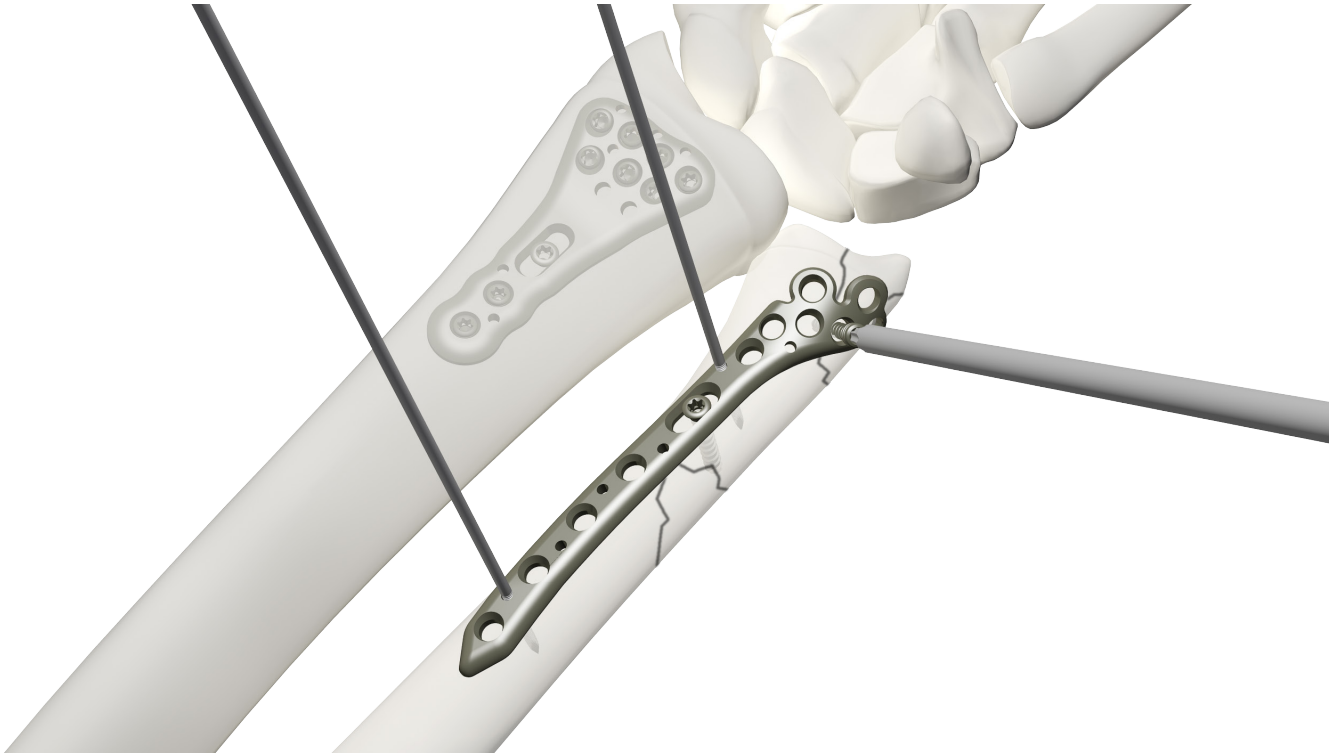


Advice: For optimal alignment of the plate with ulna length, we recommend to first fill the oblong hole.



Then insert a D=2.4mm stabilization screw, RH (**37241-XX**) or a D=3.0mm cancellous stabilization screw, RH (**37303-XX**) with the screwdriver, Torque, T9x70 (**56095-70**) into a distal plate hole.

(Spiral drill, D=1.8mm, L=100mm, AO Connector (**61183-100**) for D=2.4mm stabilization screw / spiral drill, D=2.0mm, L=100mm, AO Connector (**61203-100**) for D=3.0mm cancellous stabilization screw)



Use the screwdriver, Torque, T9x70 (**56095-70**) to insert a D=3.0mm cortical stabilization screw, RH (**37304-XX**) of appropriate lengths determined previously with the depth gauge, PROlock II (**59026**) into a shaft plate hole.



The remaining plate holes are then filled, with either locking or non-locking screws. Subsequent control of plate position under fluoroscopy.



○ Postoperative treatment

- ◆ Dorsal splint (1-2 weeks)
- ◆ With mobilization stability: physical therapy possible in the immediate postoperative period

○ Explantation

If desired by the patient, the implant can be removed.

Removal should be performed at the earliest one and a half years later or after radiographic verification of the healed bone.

The problem of cold welding was resolved by using a special treatment (for further information see page 17).

○ Summary

The ITS. Distal Ulna Locking Plate is proven in the osteosynthesis of the most diverse of fractures of the distal ulna.

This technique attains anatomical reduction which is also maintained until complete healing.

Quick rehabilitation and early functionality can be attained due to the short immobilization.

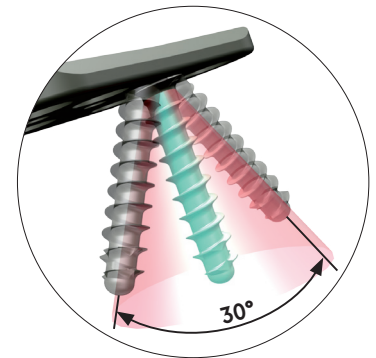
Information

3.

○ Locking

Locking works because:

- ◆ Screw material (TiALV) is slightly harder than plate material (Titanium Grade 2)
- ◆ Screw head **forms** thread into the plate (no cutting)



Benefits:

- ◆ $\pm 15^\circ$ and Locking
- ◆ No pre threading
- ◆ No cold welding
- ◆ No debris
- ◆ You can re-set the screw up to 3 times

○ Dotize[®]

Chemical process - anodization in a strong alkaline solution*

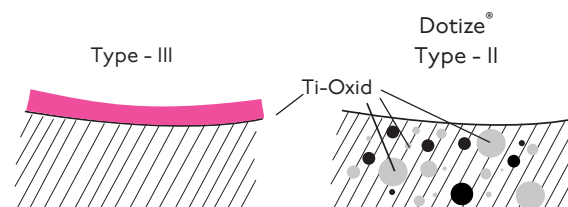
Type III anodization

- ◆ Layer thickness 60-200nm
- + Different colors
- Implant surface remains sensitive to:
Chipping
Peeling
Discoloration

Dotize

Type II anodization






- ◆ Layer thickness 2000-10 000nm
- + Film becomes an interstitial part of the titanium
- No visible cosmetic effect













Anodization Type II leads to following benefits*

- ◆ Oxygen and silicon absorbing conversion layer
- ◆ Decrease in protein adsorption
- ◆ Closing of micro pores and micro cracks
- ◆ Reduced risk of inflammation and allergy
- ◆ Hardened titanium surface
- ◆ Reduced tendency of cold welding of titanium implants
- ◆ Increased fatigue resistance of implants
- ◆ Improved wear and friction characteristics

Order list

Distal Ulna Plate, 3-hole, Left	21232-3	
Distal Ulna Plate, 3-hole, Right	21233-3	
Distal Ulna Plate, 4-hole, Left	21232-4	
Distal Ulna Plate, 4-hole, Right	21233-4	
Distal Ulna Plate, 6-hole, Left	21232-6	
Distal Ulna Plate, 6-hole, Right	21233-6	
Distal Ulna Plate, 4-hole, Left, Small	21234-4	
Distal Ulna Plate, 4-hole, Right, Small	21235-4	
Cancellous Stabilization Screw, D=3.0mm, L=8mm, RH	37303-8	
Cancellous Stabilization Screw, D=3.0mm, L=9mm, RH	37303-9	
Cancellous Stabilization Screw, D=3.0mm, L=10mm, RH	37303-10	
Cancellous Stabilization Screw, D=3.0mm, L=11mm, RH	37303-11	
Cancellous Stabilization Screw, D=3.0mm, L=12mm, RH	37303-12	
Cancellous Stabilization Screw, D=3.0mm, L=14mm, RH	37303-14	
Cancellous Stabilization Screw, D=3.0mm, L=16mm, RH	37303-16	
Cancellous Stabilization Screw, D=3.0mm, L=18mm, RH	37303-18	
Cancellous Stabilization Screw, D=3.0mm, L=20mm, RH	37303-20	
Cancellous Stabilization Screw, D=3.0mm, L=22mm, RH	37303-22	
Cancellous Stabilization Screw, D=3.0mm, L=24mm, RH	37303-24	
Stabilization Screw, D=2.4mm, L=8mm, RH	37241-8	
Stabilization Screw, D=2.4mm, L=10mm, RH	37241-10	
Stabilization Screw, D=2.4mm, L=12mm, RH	37241-12	
Stabilization Screw, D=2.4mm, L=14mm, RH	37241-14	
Stabilization Screw, D=2.4mm, L=16mm, RH	37241-16	
Stabilization Screw, D=2.4mm, L=18mm, RH	37241-18	
Stabilization Screw, D=2.4mm, L=20mm, RH	37241-20	
Stabilization Screw, D=2.4mm, L=22mm, RH	37241-22	
Stabilization Screw, D=2.4mm, L=24mm, RH	37241-24	
Cortical Stabilization Screw, D=3.0mm, L=8mm, RH	37304-8	
Cortical Stabilization Screw, D=3.0mm, L=9mm, RH	37304-9	
Cortical Stabilization Screw, D=3.0mm, L=10mm, RH	37304-10	
Cortical Stabilization Screw, D=3.0mm, L=11mm, RH	37304-11	
Cortical Stabilization Screw, D=3.0mm, L=12mm, RH	37304-12	
Cortical Stabilization Screw, D=3.0mm, L=14mm, RH	37304-14	
Cortical Stabilization Screw, D=3.0mm, L=16mm, RH	37304-16	
Cortical Stabilization Screw, D=3.0mm, L=18mm, RH	37304-18	
Cortical Stabilization Screw, D=3.0mm, L=20mm, RH	37304-20	
Cortical Stabilization Screw, D=3.0mm, L=22mm, RH	37304-22	
Cortical Stabilization Screw, D=3.0mm, L=24mm, RH	37304-24	
Cortical Screw, D=2.7mm, L=8mm	32271-8	
Cortical Screw, D=2.7mm, L=9mm	32271-9	
Cortical Screw, D=2.7mm, L=10mm	32271-10	
Cortical Screw, D=2.7mm, L=11mm	32271-11	
Cortical Screw, D=2.7mm, L=12mm	32271-12	
Cortical Screw, D=2.7mm, L=14mm	32271-14	
Cortical Screw, D=2.7mm, L=16mm	32271-16	
Cortical Screw, D=2.7mm, L=18mm	32271-18	
Cortical Screw, D=2.7mm, L=20mm	32271-20	
Cortical Screw, D=2.7mm, L=22mm	32271-22	
Cortical Screw, D=2.7mm, L=24mm	32271-24	

Screwdriver, Torque, T9x70	56095-70	
Depth Gauge, PROlock II	59026	
Spiral Drill, D=1.8mm, L=100mm, AO Connector	61183-100	
Spiral Drill, D=2.0mm, L=100mm, AO Connector	61203-100	
Spiral Drill, D=2.4mm, L=100mm, AO Connector	61243-100	
Drill Guide, D=2.0/2.4mm	62215	
Guide Wire, Steel, D=1.6mm, L=150mm, TR, w. thread	35164-150	
Sterilization Tray, Distal Ulna Plate	50220	
Special sizes & instruments optional on request *		
Depth Gauge, PROlock	59023	
Temporary Plate Holder	58164-150	
Distal Ulna Plate, 6-hole, Left, Small	21234-6	
Distal Ulna Plate, 6-hole, Right, Small	21235-6	

For detailed cleaning and sterilization instructions, please refer to package insert.

* Delivery times, prices & minimum quantities may vary from standard



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