

# ITS.

Implants for Trauma Surgery



Distal  
Ulna  
Locking Plate

## THE ART of TRAUMA SURGERY

*The Art of Trauma Surgery* is a collaborative project between I.T.S. and Austrian artist Oskar Stocker that celebrates the skill, perseverance, and artistry of surgeons and engineers who work tirelessly to improve outcomes for trauma patients.

At I.T.S., we stand for long-term, trusting relationships with our customers, suppliers, and development partners. Through our devotion to innovation and development, we continuously seek to improve and optimize products and techniques in the field of traumatology.

We believe that the success of our mission lies in the combination of the technical expertise, compassion and dedication of surgeons and engineers to help patients regain their health and well-being. Join us in celebrating these remarkable individuals and *The Art of Trauma Surgery!*

### About the Artist

The Austrian artist Oskar Stocker (b. 1956) lives and works in Graz, Austria. He has become known internationally through the exhibition Facing Nations, which consists of portraits of more than 120 people of various nationalities living in Graz; it was shown first in Graz itself, then in Vienna, and later culminated in 2010 with its display at the UN Headquarters in New York City.

In addition to the portraits of individual people, he devotes himself to the depiction of landscapes and objects, down to the smallest detail.





All I.T.S. 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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STOCKER

# Introduction



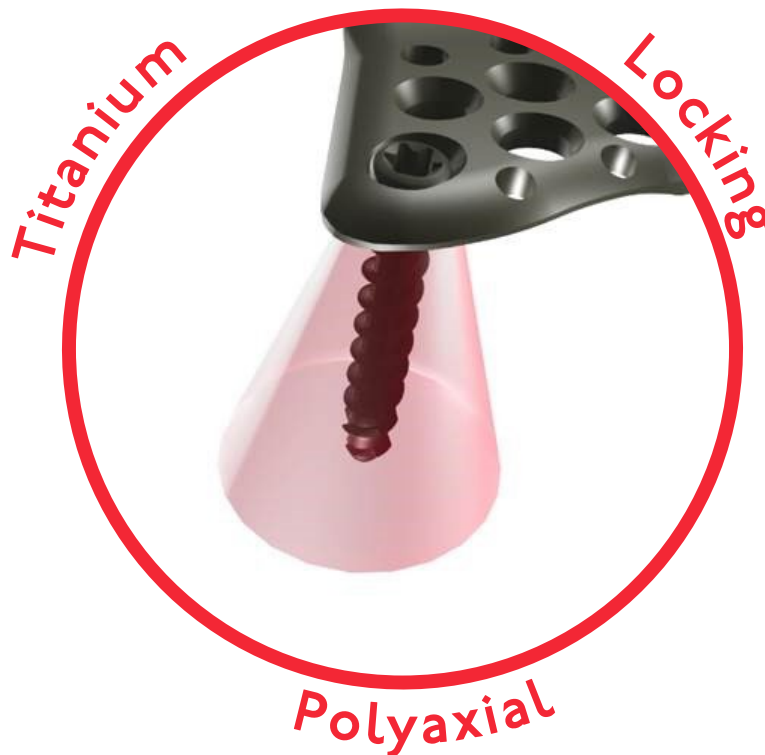


## ○ Plate Technology

At I.T.S., we stand for long-term, trusting relationships with our customers, suppliers, and development partners. Through our dedication to innovation and development, we continuously seek to improve and optimize products and techniques for trauma surgery.

### ○NE Technology for all implants

All I.T.S. plates are made from Titanium Grade 2, whereas the screws are made of a harder titanium alloy. This allows the plates to have only non-threaded holes, which all (with the exception of oblong holes) accept both non-locking and locking screws.



When a locking screw is inserted, it forms threads into the plate. There is no cutting and thus no debris is created. Each locking screw can be locked at a free placement within a cone of angulation up to  $\pm 15^\circ$  and can be re-positioned up to three times.



## ○ System Overview

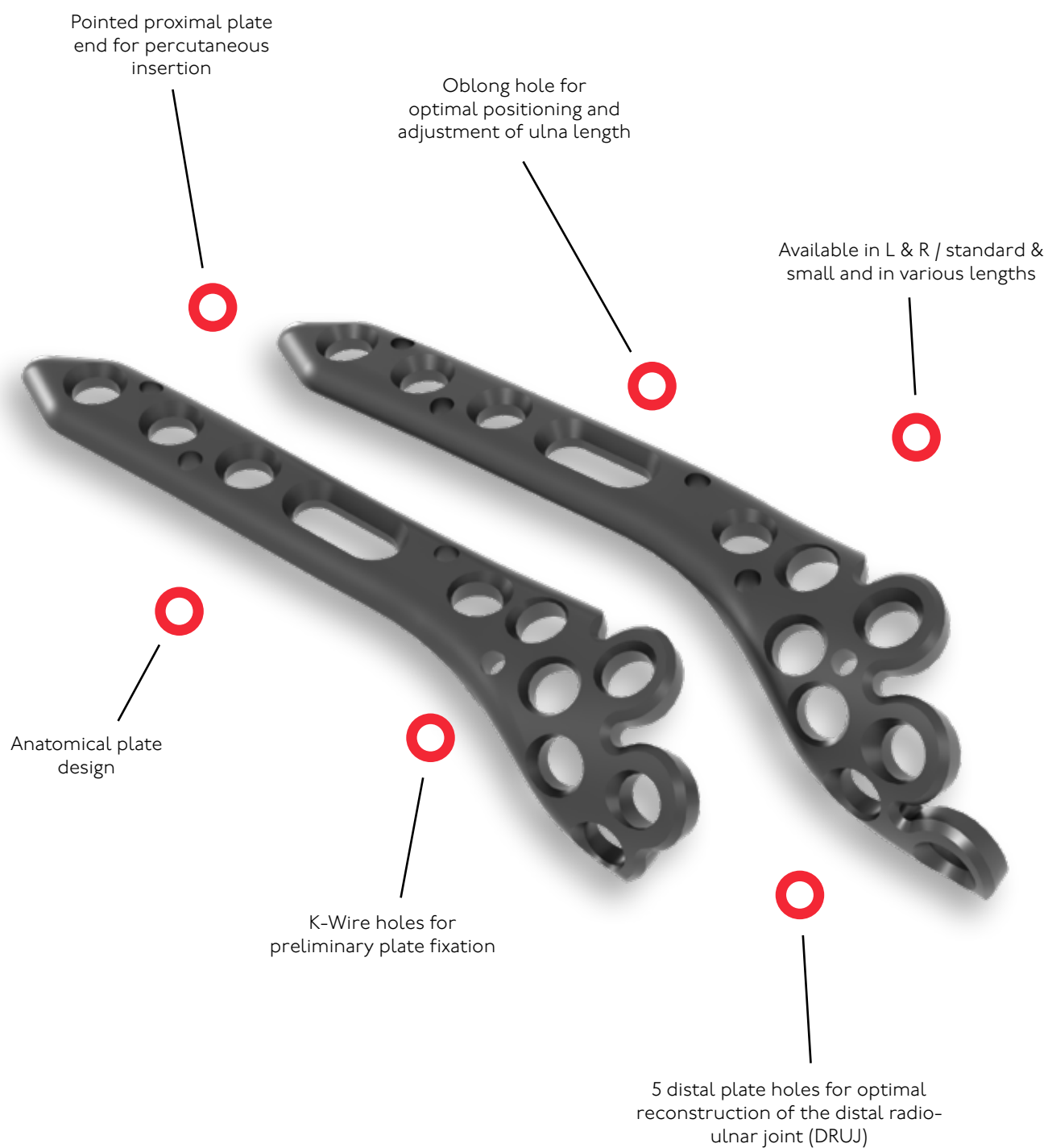
The ITS. Distal Ulna Locking Plate System is a plate system that can be fitted with locking screws and adapted to the contour of the distal ulna. Due to the palmar position, the plate is covered by the musculature so that metal removal is not always necessary.

The ulnar head is stabilized using locking screws and the plate configuration supports the transition to the neck area.

The use of locking screws in the proximal portion increases rigidity.



# ○ Properties

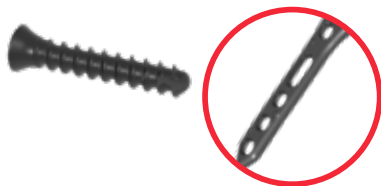


## ○ Screws

32271-xx

### NON-LOCKING

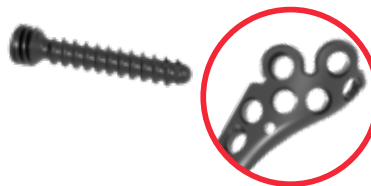
Cortical Screw, D=2.7mm  
Spiral Drill, D=2.0mm  
Torque, T9



37241-xx

### LOCKING

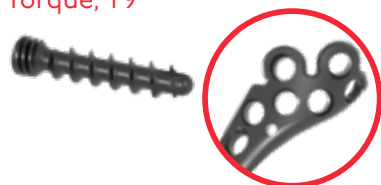
Stabilization Screw, D=2.4mm  
Spiral Drill, D=1.8mm  
Torque, T9



37303-xx

### LOCKING

Cancellous Stabilization Screw,  
D=3.0mm  
Spiral Drill, D=2.0mm  
Torque, T9



37304

### LOCKING

Cortical Stabilization Screw, D=3.0mm  
Spiral Drill, D=2.4mm  
Torque, T9





## ○ 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

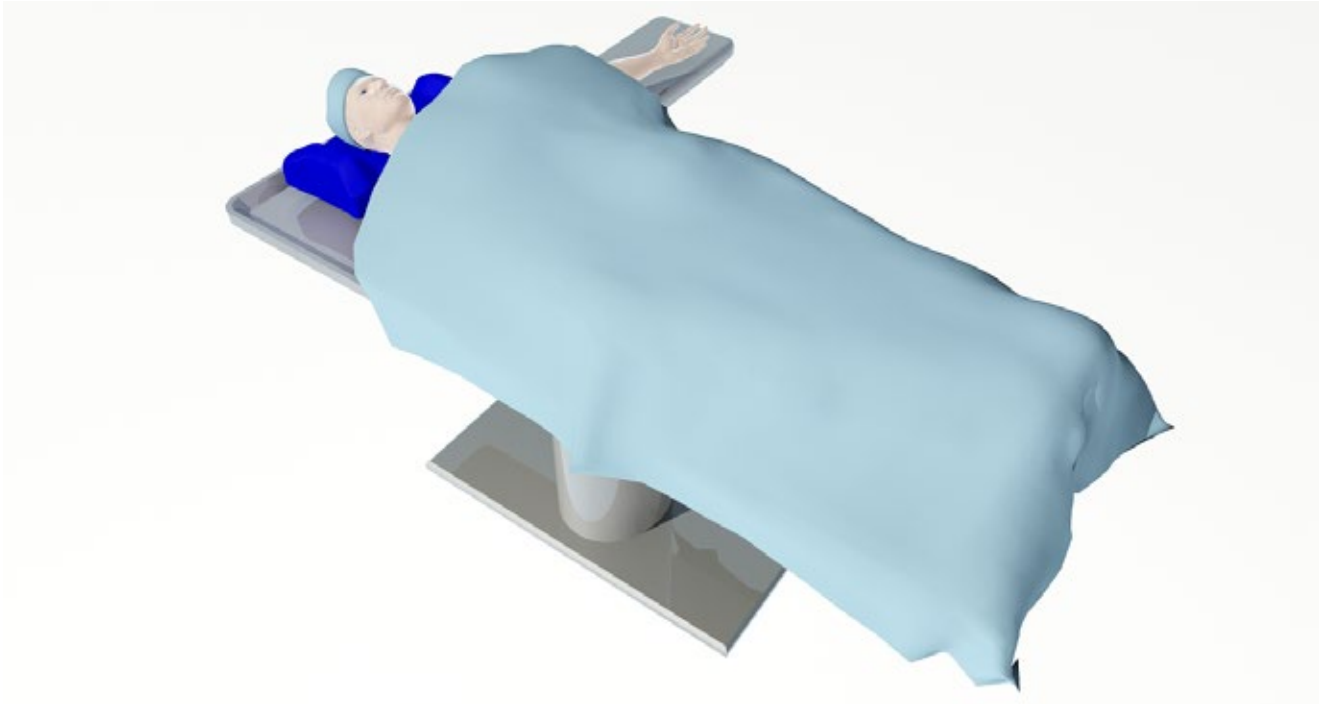
- Immediately after trauma or delayed
- After regression of swelling

# Surgical Technique

2.

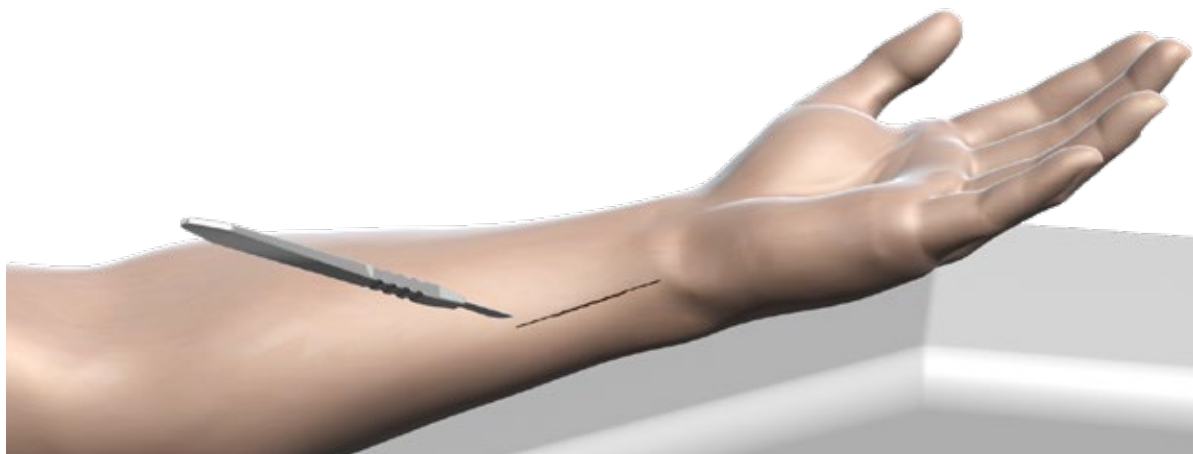
## ○ Pre-operative patient preparation

- 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.





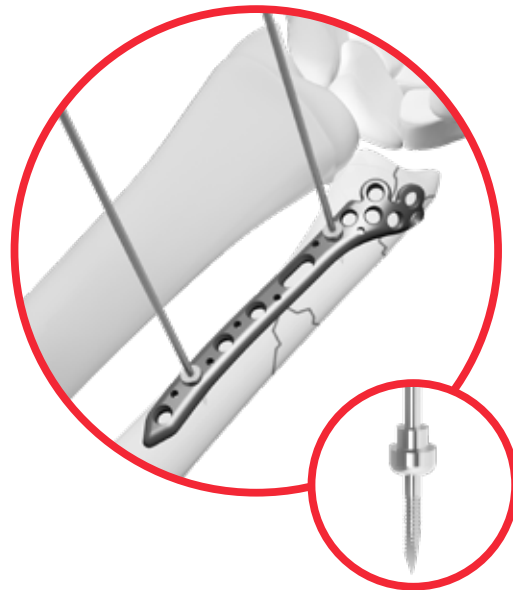
## ○ Plate Insertion

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



## ○ **OPTIONAL:** Temporary Plate Fixation

- Optionally, the plate can be stabilized using the Temporary Plate Holder (58164-150).



## ○ Screw Placement

- 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..

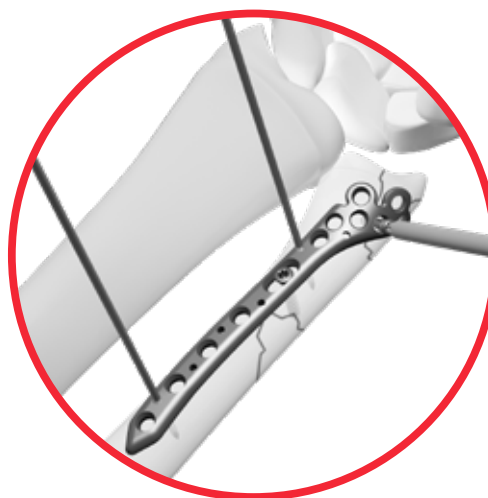


- Determine appropriate length using the depth gauge, PROlock II (59026). Insert the D=2.7mm cortical screw (32271-XX) with the screwdriver, Torque, T9x70 (56095-70).

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



Screw		Ø	Drill Article Number
37241-xx	Stabilization Screw	1.8	61183-100
37303-xx	Cancellous Stabilization Screw	2.0	61203-100

- Use the screwdriver, Torque, T9x70 (56095-70) to insert a D=3.0mm cortical stabilization screw (37304-XX) or a D=3.0mm cortical screw (32271-XX) of appropriate lengths determined previously with the depth gauge, PROlock II (59026) into a shaft plate hole.



Screw		Ø	Drill Article Number
32271-xx	Cortical Screw	2.0	61203-I00
37304-xx	Cortical Stabiliza- tion Screw	2.4	61243-I00

- 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.

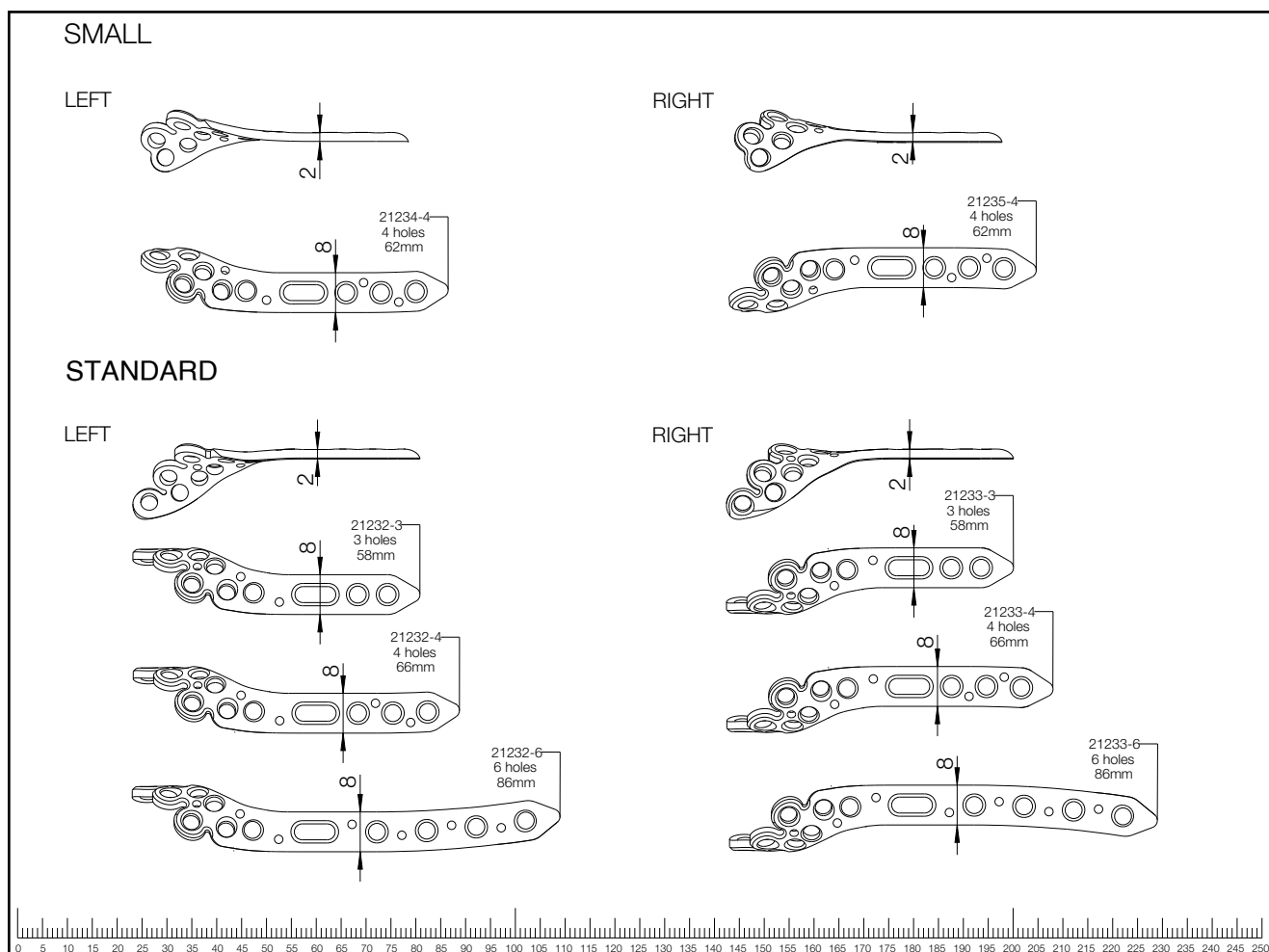
Removal should be performed at the earliest one and a half years later or after radiographic verification of the healed bone.

The ITS. Type II anodization surface treatment reduces the risk of cold welding of titanium implants (for more information, see page 21).

Information

3.

# ○ Technical Information



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

Not true to scale

# ○ Type II Anodization

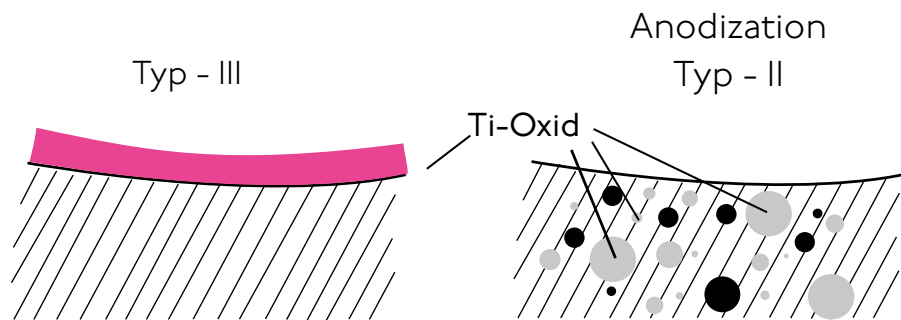
Chemical process - anodization in a strong alkaline solution\*

## Type III anodization

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

## 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

\* White Paper: Ti6Al4V with Anodization Type II: Biological Behavior and Biomechanical Effects; Axel Baumann, Nils Zander

# ○ Ordering Information

## Distal Ulna Plate




Description		Holes	Article Number
Distal Ulna Plate	Right	3	21233-3
Distal Ulna Plate	Left	3	21232-3
Distal Ulna Plate	Right	4	21233-4
Distal Ulna Plate	Left	4	21232-4
Distal Ulna Plate	Right	6	21233-6
Distal Ulna Plate	Left	6	21232-6








Description		Holes	Article Number
Distal Ulna Plate, Small	Right	3	21235-3
Distal Ulna Plate, Small	Left	3	21234-3
Distal Ulna Plate, Small	Right	4	21235-4
Distal Ulna Plate, Small	Left	4	21234-4
Distal Ulna Plate, Small	Right	6	21235-6
Distal Ulna Plate, Small	Left	6	21234-6

# Screws

Cortical Screw, D=2.7mm	Length	Article Number
	8	3227I-8
	9	3227I-9
	10	3227I-10
	11	3227I-11
	12	3227I-12
	14	3227I-14
	16	3227I-16
	18	3227I-18
	20	3227I-20
	22	3227I-22
	24	3227I-24

Stabilization Screw, D=2.4mm	Length	Article Number
	8	3724I-8
	10	3724I-10
	12	3724I-12
	14	3724I-14
	16	3724I-16
	18	3724I-18
	20	3724I-20
	22	3724I-22
	24	3724I-24

Cancellous Stabiliza- tion Screw, D=3.0mm	Length	Article Number
	8	37303-8
	9	37303-9
	10	37303-10
	11	37303-11
	12	37303-12
	14	37303-14
	16	37303-16
	18	37303-18
	20	37303-20
	22	37303-22
	24	37303-24

Cortical Stabilization Screw, D=3.0mm	Length	Article Number
	8	37304-8
	9	37304-9
	10	37304-10
	11	37304-11
	12	37304-12
	14	37304-14
	16	37304-16
	18	37304-18
	20	37304-20
	22	37304-22
	24	37304-24

# Instruments

## Guide Wire



35I64-I50

Description	Article Number
Guide Wire, Steel, D=1.6mm, L=150mm, TR, w. Thread	35I64-I50

## (Optional) Plate Holder



58I64-I50

Description	Article Number
Temporary Plate Holder, For 3.5/4.2mm Screws	58I64-I50

## Depth Gauge



59026

Description	Article Number
Depth Gauge, PROlock II	59026

## Spiral Drill



61183-100



61203-100



61243-100

Description	Article Number
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



62215

Description	Article Number
Drill Guide, D=2.0/2.4mm	62215

## Screwdriver



56095-70



Description	Article Number
Screwdriver , Torque, T9x70	56095-70





Disclaimer:

The intended users are limited to medical personnel with appropriate product training by the medical product consultants or knowledge of the surgical procedure to be applied. The medical staff must ensure that the use of I.T.S. GmbH medical devices is appropriate, taking into account the medical condition and medical history of the patient. Prior to product use, medical personnel must refer to complete information on product label and in IFU, including, but not limited to, indications, contraindications, warnings and preventative measures, and cleaning and sterilization instructions. Product availability is dependent on country registrations and clearances. For more information, please visit [www.its-implant.com](http://www.its-implant.com) or contact us at [office@its-implant.com](mailto:office@its-implant.com). Unless otherwise noted, all information herein is the intellectual property of I.T.S. GmbH.



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