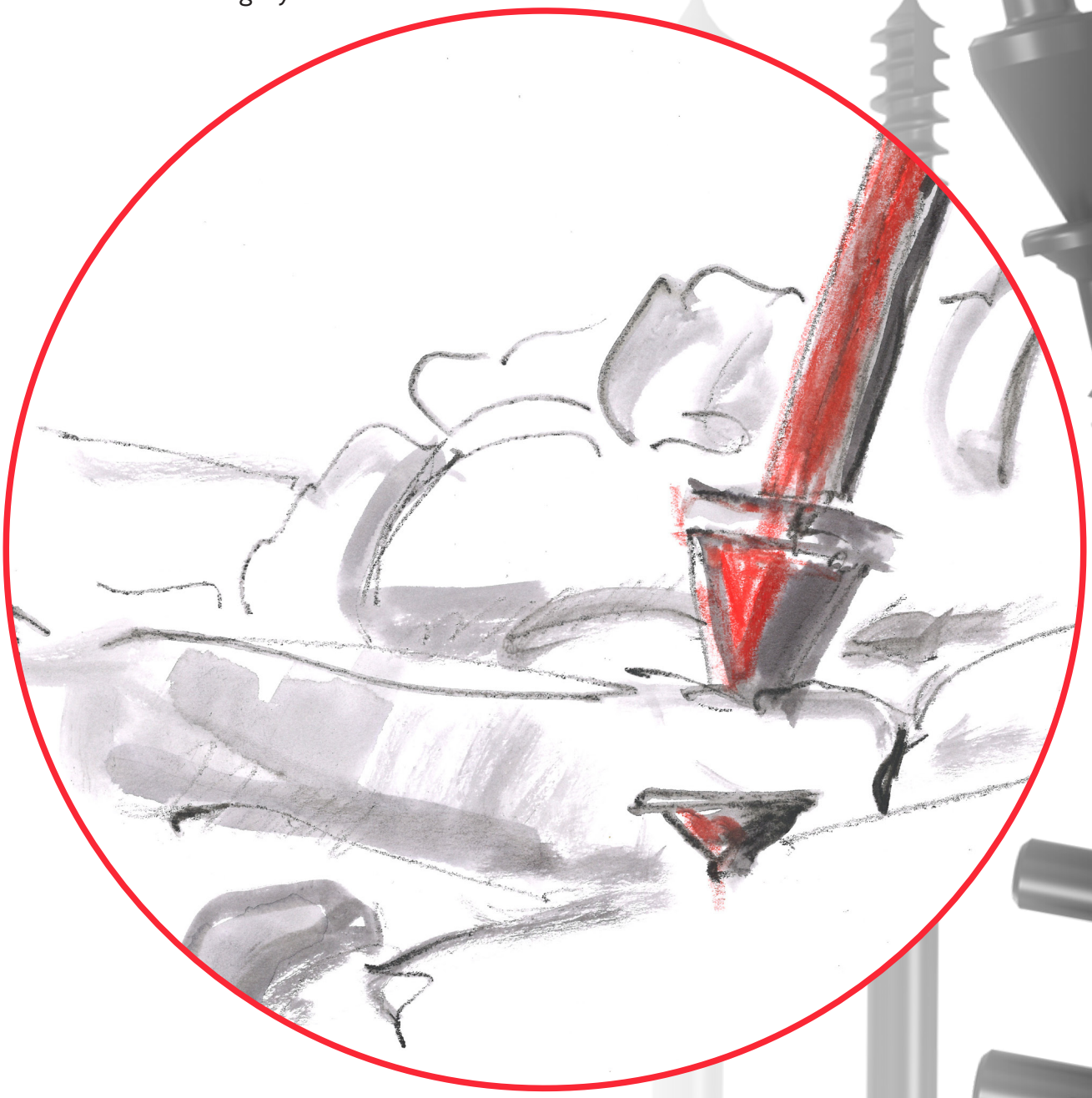
ITS.

Implants for Trauma Surgery



# Twist Off Screws

ITS.
Implants for Trauma Surgery

# 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.

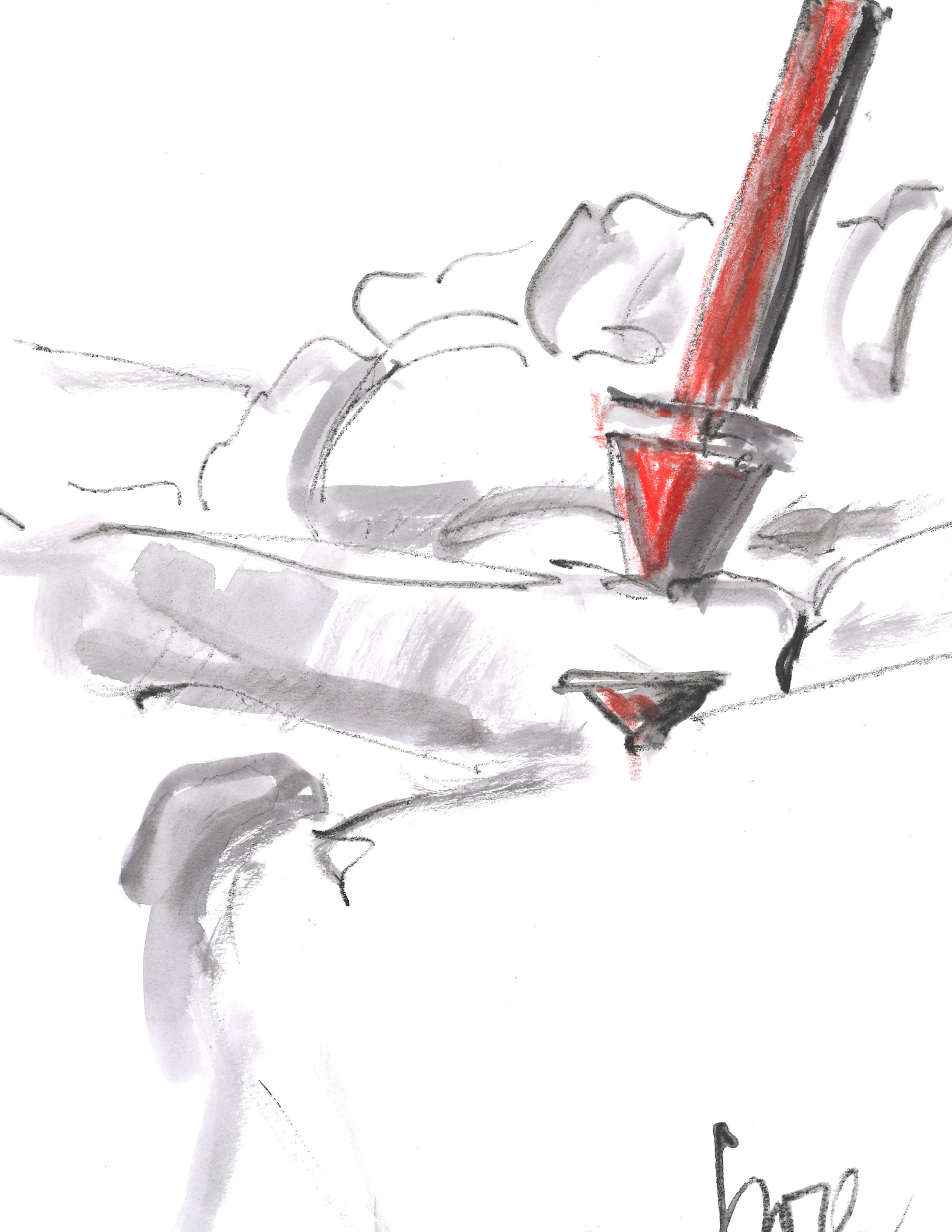
At I.T.S., we stand for long-term, trusting relationships with our customers, suppliers, and development partners. Through our devotion to innovation and development, we continuously seek to improve and optimize products and techniques in the field of traumatology.

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.

# Table of Contents

# Introduction

# System Overview

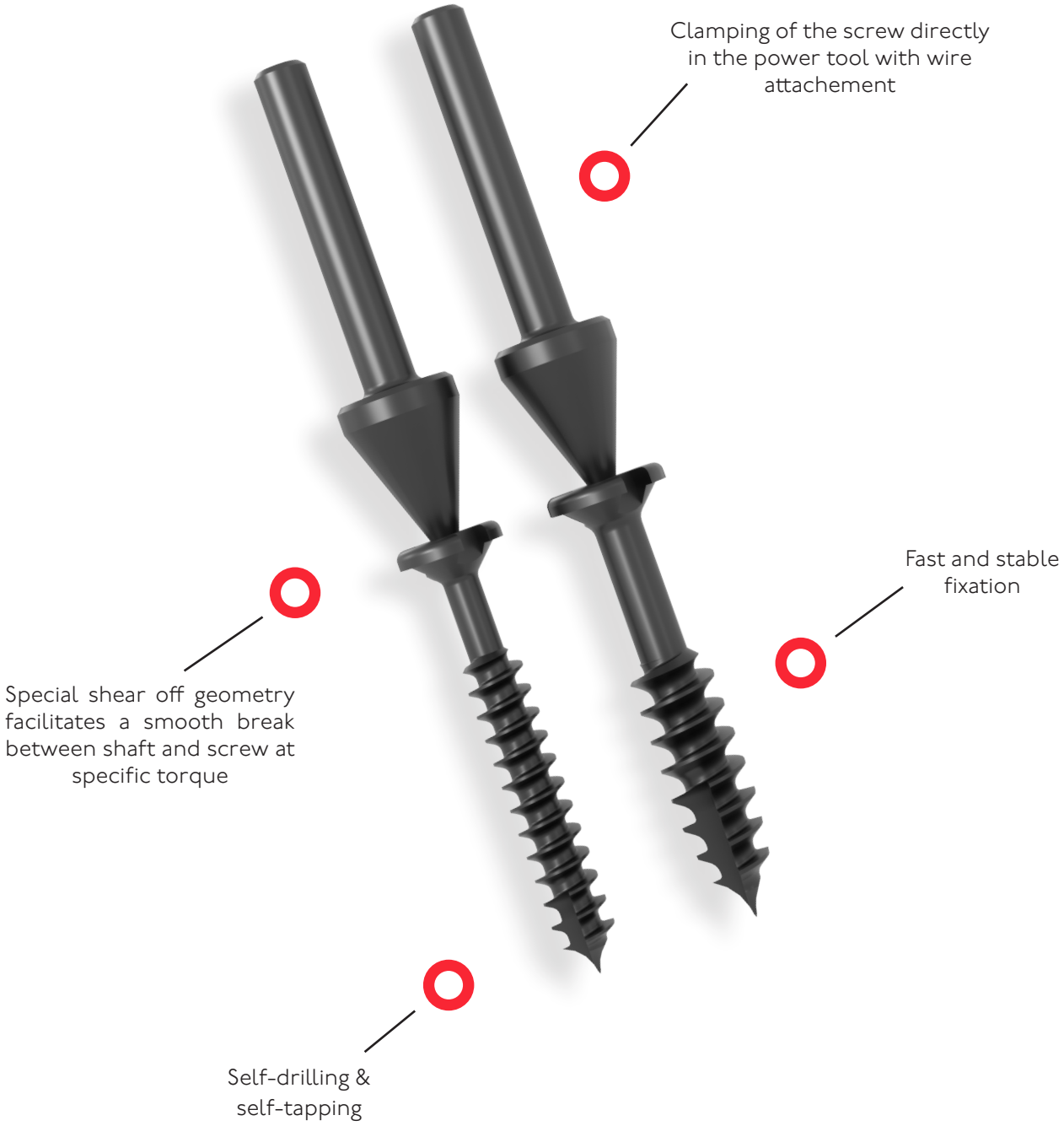
The ITS. Twist-off Screws provide Precision and Efficiency in Trauma Surgery by allowing for fast and stable fixation, e.g. in the treatment of fractures and corrective osteotomies.

These fully threaded self-tapping and self-drilling screws come in two different diameters (2.0mm and 2.7mm) and a variety of different lengths.

ITS. Twist-off Screws are securely clamped onto a power tool (pin/wire driver), and the new, improved shear-off geometry allows for a smooth break between the shaft and the screw once the screw head engages with the bone cortex.

# Properties






## Inverse Philips Screwdriver

Invers-Phillips-Screwdriver shank for final insertion of the Twist-Off Screw.

The pointed claw edges facilitates the retaining of the screw head as well as the entire explantation.

# Indications

- Small bone fixation of bone fractures or for bone reconstruction.
- Examples include small bone fragments, Weil osteotomy, mono-cortical fixation, osteotomies and fracture fixation in the foot and hand.

# Contraindications

- Existing bone or soft tissue infections in the operation field
- Common situations that do not allow osteosynthesis
- With advanced osteoporosis
- Skin and soft-tissue problemns which prevent a tension-free closure of the skin
- Obesity
- Lack of patient compliance

# Time of Operation

- Primary: Within the first hours after trauma
- Secondary: After swelling subsides, intermediate fixation with external fixation or extension

# Surgical Technique

# 2.

# Temporary fixation

- After placing a stab incision, provisionally fix the fracture or osteotomy
- Subsequent control under fluoroscopy.



# Identification of screw length

- Select the screw length carefully so that the screw obtains purchase in the far cortex but does not penetrate into the soft tissue.

| Screw<br>Ø | Available Lengths<br>Interval Imm |
|---|---|
| 2.0 | 11 - 16mm |
| 2.7 | 14 - 22mm |



12

# Placement of the screw

- The Twist-Off Screw can be inserted with a power tool system with wire attachement.

- The shank breaks off at specified torque.

**TIP:** If the shank does not disengage, stop driving the screw when the taper of the shaft reaches the outer cortex. Then, tilt the power driver gently to disengage the screw.

- Final insertion of the screw with the AO Silicone Handle *(53016)* and the Invers-Phillips-Screwdriver shank *(56505)*.

- Finally, confirm correct position under fluoroscopy.





13

# Postoperative Treatment

- Physical therapy immediately following surgery (no immobilization required)
- Partial weight-bearing
- Full weight-bearing after week 10-16
- Weight-bearing after radiographic verification of the healed bone

**NOTE**: The postoperative treatment may vary depending on the patient's age, bone quality or type of fracture.



# Explantation

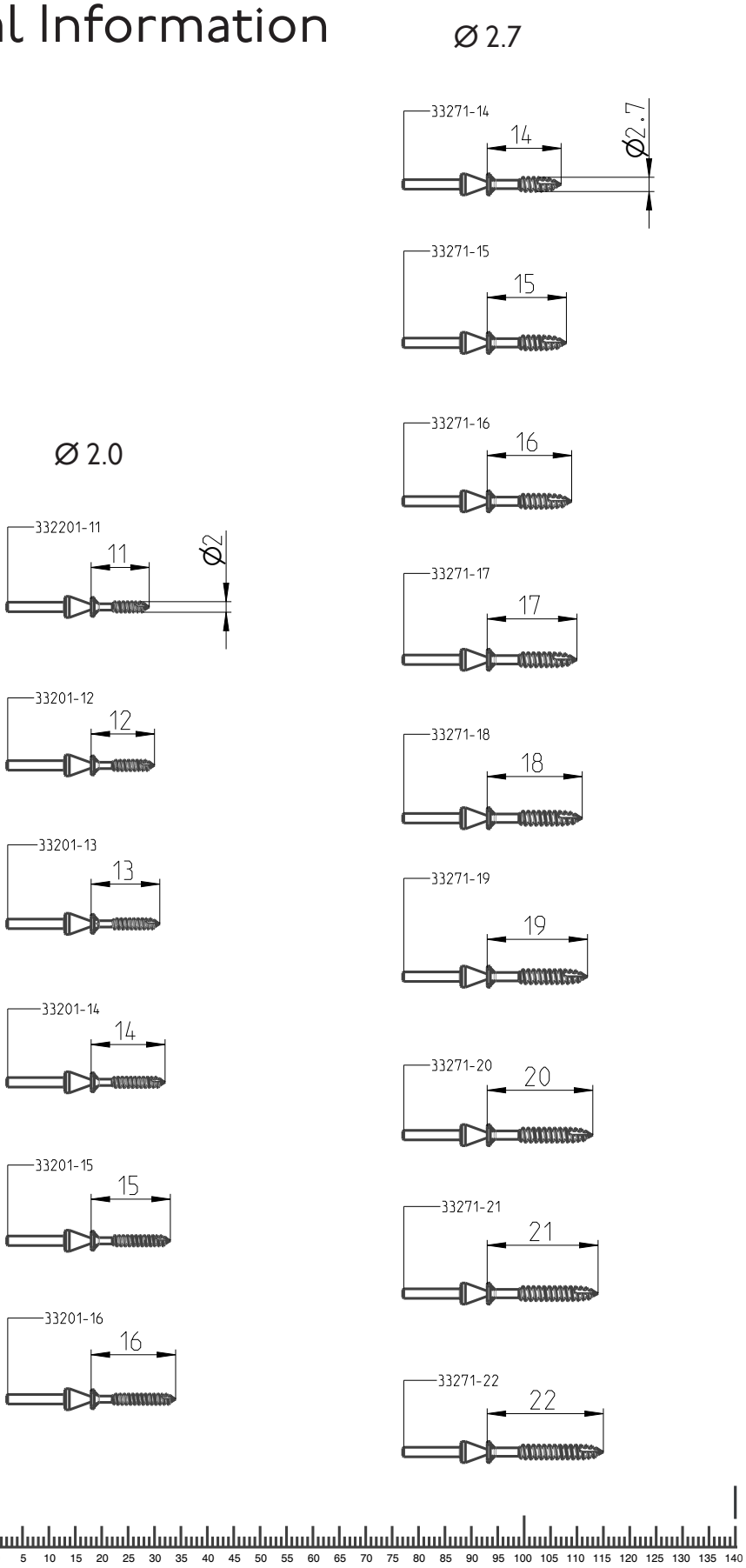
- Removal is possible, if desired by the patient.
- Implant removal is performed after radiographic verification.
- Skin incision following the old scar
- Remove the screw with the AO Silicone Handle *(53016)* and the Invers-Phillips-Screwdriver shank *(56505)*.


14

# Information

# 3.

# Technical Information




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

Not true to scale

# Type II Anodization

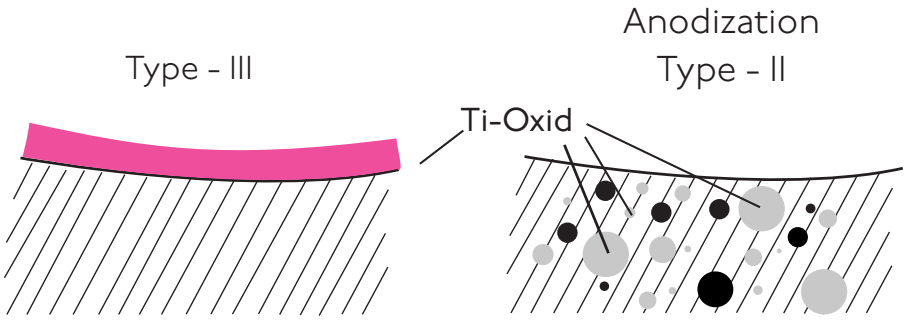
Chemical process - anodization in a strong alkaline solution*

## Type III anodization

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

## Type II anodization

- Layer thickness 1000-2000nm
  - \+ 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

## Twist-Off Screws

| Length | Ø 2.0mm |
|---|---|
| 11 | 33201-11 |
| 12 | 33201-12 |
| 13 | 33201-13 |
| 18 | 33201-14 |
| 20 | 33201-15 |
| 22 | 33201-16 |

| Length | Ø 2.7mm |
|---|---|
| 14 | 33271-14 |
| 15 | 33271-15 |
| 16 | 33271-16 |
| 17 | 33271-17 |
| 18 | 33271-18 |
| 19 | 33271-19 |
| 20 | 33271-20 |
| 21 | 33271-21 |
| 22 | 33271-22 |

## Instrumente

### Inverse Philips Screwdriver

56505

| Description | Article Number |
|---|---|
| Inverse Philips Screwdriver, Twist-Off Screw 2.0/2.7mm | 56505 |

## Handle


53016

| Description | Article Number |
|---|---|
| AO Silicone Handle AO Connector | 53016 |

# Notes

# Notes

# Notes

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 or contact us at office@its-implant.com. Unless otherwise noted, all information herein is the intellectual property of I.T.S. GmbH.

**HEADQUARTER**
I.T.S. GmbH
Autal 28, 8301 Lassnitzhöhe, Austria
Tel.: +43 (0) 316/ 211 21 0
office@its-implant.com
www.its-implant.com

I.T.S. USA
1778 Park Avenue N - Suite 200
Tel.: 407-971-8054
info@its-implantusa.com
www.its-implant.com

Order No. DUL-OP-0725-US
Edition: July/2025