

# ITS.

Implants for Trauma Surgery



Cannulated  
Recon  
Cancellous  
System

## THE ART of TRAUMA SURGERY

*The Art of Trauma Surgery* is a collaborative project between ITS. 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 ITS. 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.





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# Introduction



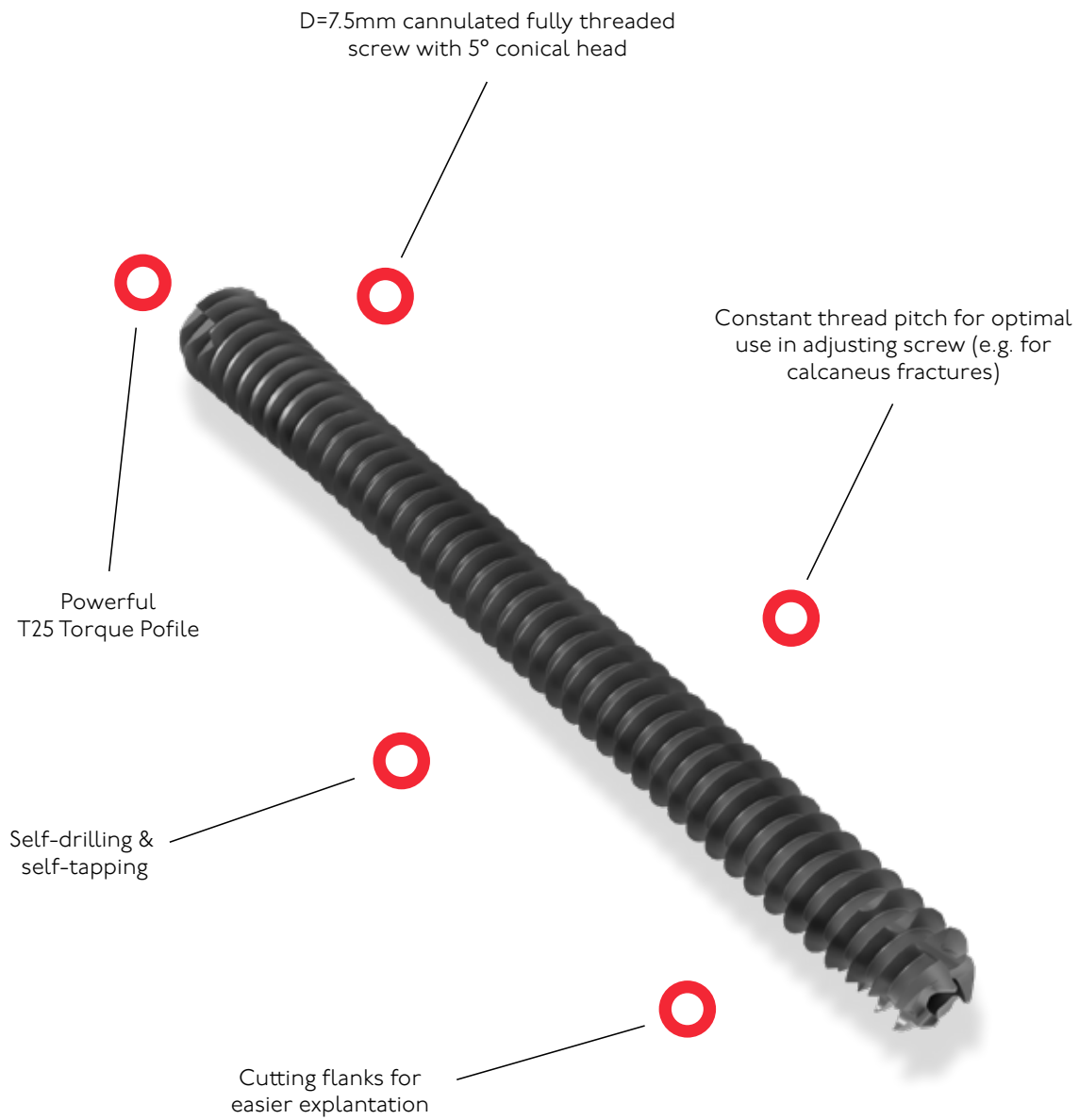
## ○ System Overview

ITS. provides various cannulated screw types with different diameters and lengths covering a wide range of indications for fracture treatment in trauma surgery.

In addition to our existing cannulated screw range from 2.0mm up to 8.5mm, we now offer a 7.5mm fully-threaded cannulated screw. This screw is indicated primarily for percutaneous fixation of calcaneus fractures and secondarily for proximal tibia, distal femur fractures as well as arthrodesis and osteotomies of the upper and lower ankle joint.



# ○ Properties



## ○ Indications

- Primary: For percutaneous fixation of calcaneus fractures
- Secondary: For fixation of proximal tibia and distal femur fractures, as well as arthrodesis and osteotomies of the upper and lower ankle joint

## ○ Contraindications

- Diaphyseal fractures of long bones
- Advanced osteoporosis
- 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

Intended purpose

The implant screw product group – S04 are used for the fixation of fractures, arthrodeses and osteotomies.

# Surgical Technique

2.

# ○ Preoperative Patient Preparation

- Lateral positioning on a radiolucent operating table
- Positioning of the affected foot beyond the table edge to improve surgical accessibility and intraoperative orientation
- General and/or regional anesthesia
- Optional use of a tourniquet
- Positioning of the image intensifier for intraoperative fluoroscopic control in lateral, axial, and Brodén views

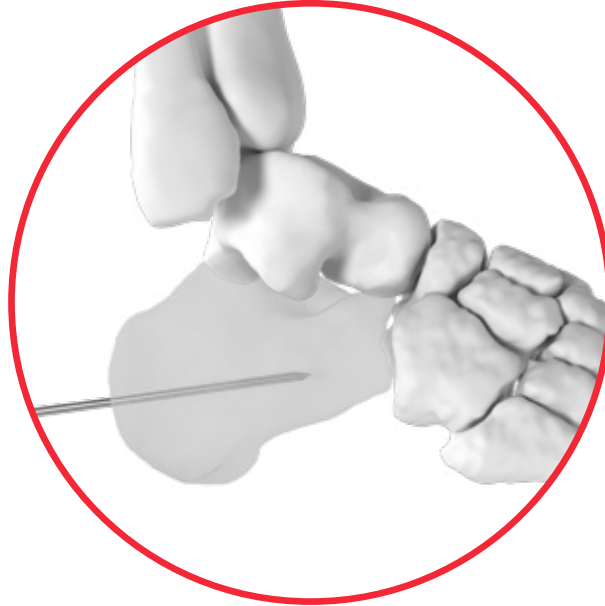
# ○ Approach

- Stab incision according to the planned screw position under fluoroscopic guidance
- Placement of the guide wire from lateral-dorsal to medial-ventral
- Targeted alignment toward the sustentaculum tali as the medial reference fragment
- Gentle minimally invasive dissection while preserving the surrounding soft tissue structures

**NOTE:** Particular attention should be paid to the course of the sural nerve and the peroneal tendons.

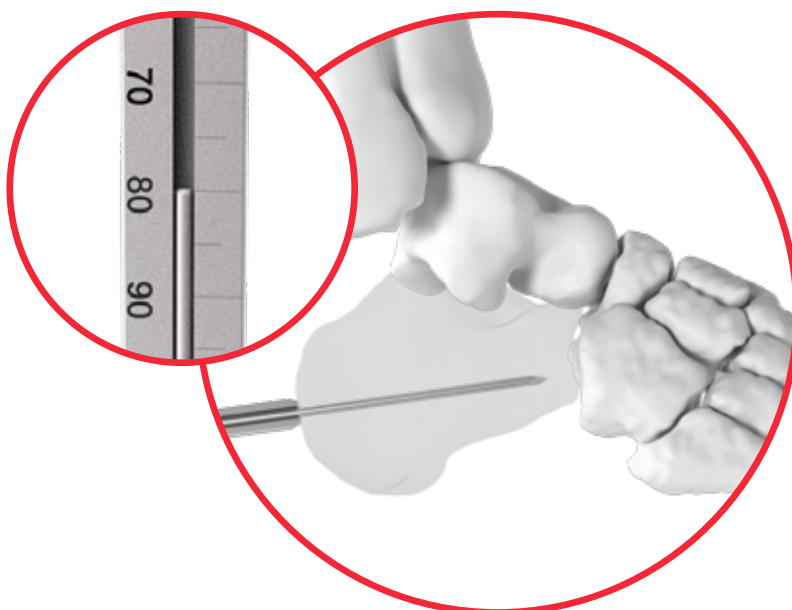
## ○ Temporary Fixation with K-wire

After placing a stab incision, provisionally fix the fracture segments using the guide wire, Steel, D=2.5mm, L=230mm, TR (35251-230) and control its correct position under fluoroscopy.



## ○ Identification of Screw Length

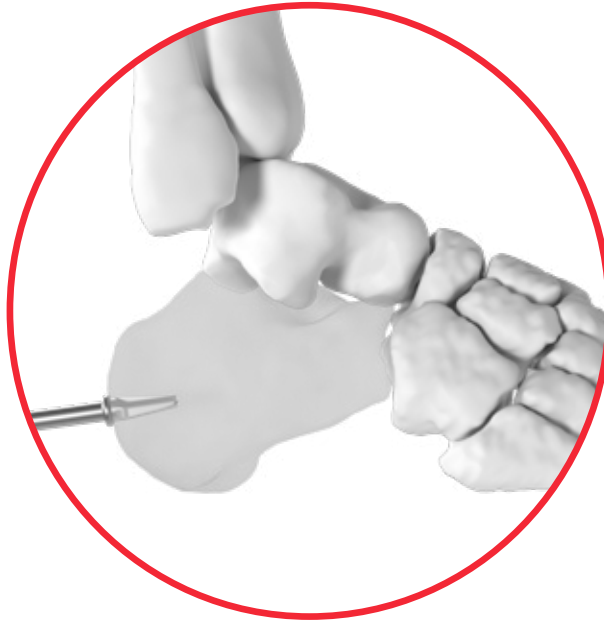
Place screw depth gauge (59321) over guide wire and insert it through the soft tissue down to the bone. Then read off the required length measurement at the end of the calibrated guide wire.



## ○ Countersink Drilling

Predrill the cortical bone using the countersink drill (*6360I-150*) over the guide wire until the depth stop collar reaches the surface of the bone.

**NOTE:** After countersink drilling, the drill (*61552-180*) can be used to pre-drill the full screw length, if needed, thereby easing screw insertion in very hard bone.



## ○ Placement of the Screw

Insert the Cannulated Cancellous Recon Screw (*3175I-XX*) over the guide wire using the T-Handle Zimmer Hall (*1U1125A*) and torque-shank T25 (*54254-150* or *54255-150*).



Finally, remove the guide wire and confirm correct screw position under fluoroscopy.



## ○ Postoperative Treatment

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

• General:	Partial weight bearing at week 4-6 Full weight bearing at week 6-10	
• Calcaneus:	Removable plaster cast to avoid pes equinus position Partial weight bearing (toe contact) Full weight bearing after week 10-16	15kg at week 0-6 30kg at week 6-10
• Distal Femur:	Knee bandage in ligament fixation Partial weight bearing (toe contact)	15kg at week 0-6 30kg at week 6-10
• Proximal Tibia:	Knee bandage in ligament fixation Partial weight bearing (toe contact) Full weight bearing at week 10-14	15kg at week 4-w8 30kg at week 6-10

Postoperative Treatment, Explantation

## ○ Explantation

Removal is possible, if desired by the patient.

(Removal should be performed only 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*).

## ○ Case Study

### Case 1:

Preoperative and postoperative X-ray images of calcaneal fracture treatment.



PRE-OP



POST-OP

### Case 2:

Preoperative and postoperative x-ray images of calcaneal fracture treatment.



PRE-OP



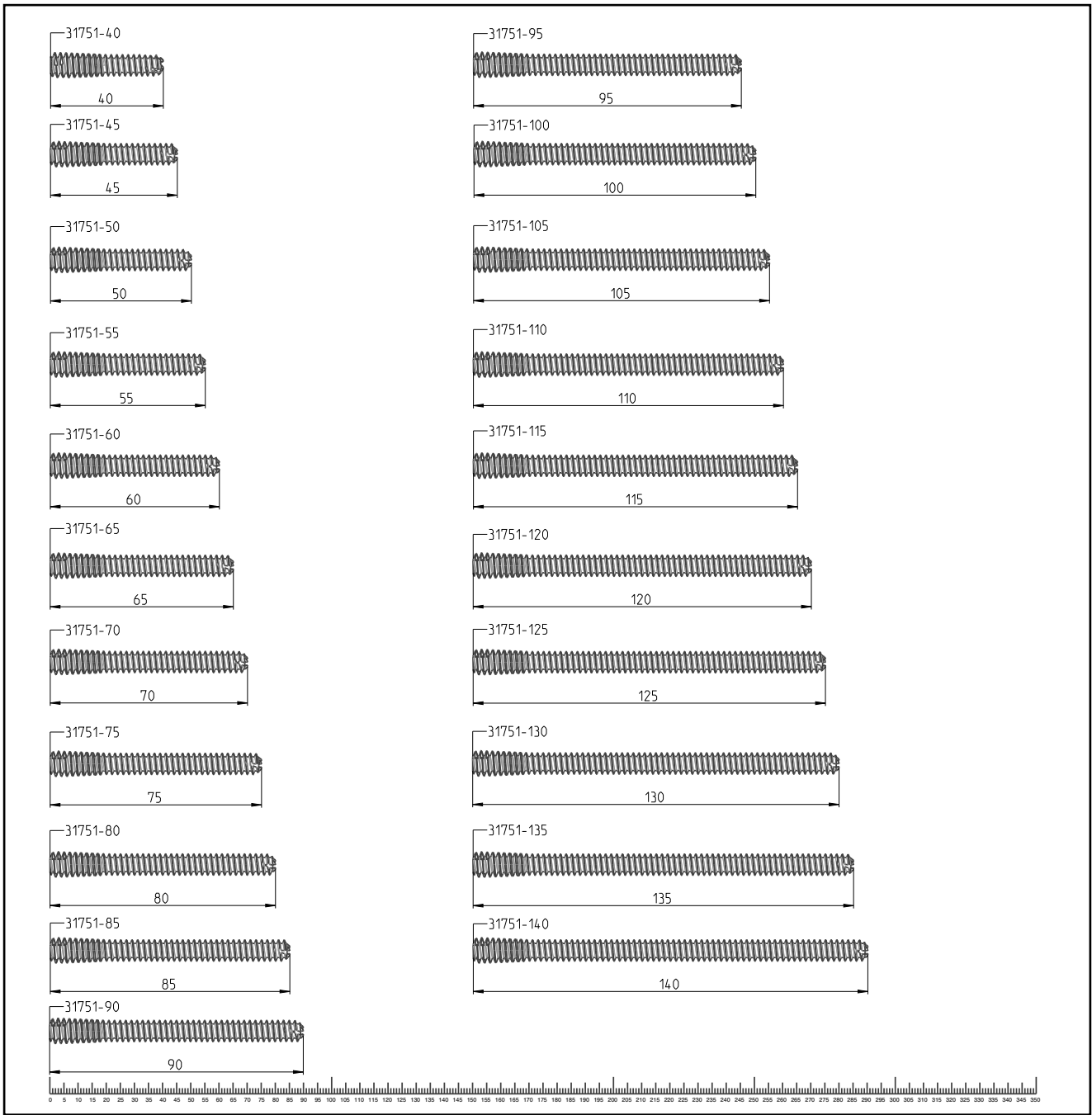
POST-OP



Information

3.

# Technical Information



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

Not true to scale

# ○ Type II Anodization

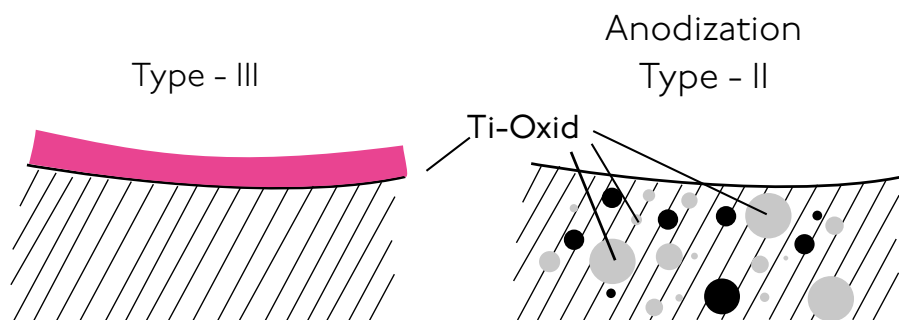
Chemical process - anodization in a strong alkaline solution\*

## 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 the 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

## Cannulated Recon Cancellous Screw



Description	Length (mm)	Article Number
Cannulated Recon Cancellous Screw, D=7.5mm	40	3175I-40
Cannulated Recon Cancellous Screw, D=7.5mm	45	3175I-45
Cannulated Recon Cancellous Screw, D=7.5mm	50	3175I-50
Cannulated Recon Cancellous Screw, D=7.5mm	55	3175I-55
Cannulated Recon Cancellous Screw, D=7.5mm	60	3175I-60
Cannulated Recon Cancellous Screw, D=7.5mm	65	3175I-65
Cannulated Recon Cancellous Screw, D=7.5mm	70	3175I-70
Cannulated Recon Cancellous Screw, D=7.5mm	75	3175I-75
Cannulated Recon Cancellous Screw, D=7.5mm	80	3175I-80
Cannulated Recon Cancellous Screw, D=7.5mm	85	3175I-85
Cannulated Recon Cancellous Screw, D=7.5mm	90	3175I-90
Cannulated Recon Cancellous Screw, D=7.5mm	95	3175I-95
Cannulated Recon Cancellous Screw, D=7.5mm	100	3175I-100
Cannulated Recon Cancellous Screw, D=7.5mm	105	3175I-105
Cannulated Recon Cancellous Screw, D=7.5mm	110	3175I-110
Cannulated Recon Cancellous Screw, D=7.5mm	115	3175I-115
Cannulated Recon Cancellous Screw, D=7.5mm	120	3175I-120
Cannulated Recon Cancellous Screw, D=7.5mm	125	3175I-125
Cannulated Recon Cancellous Screw, D=7.5mm	130	3175I-130
Cannulated Recon Cancellous Screw, D=7.5mm	135	3175I-135
Cannulated Recon Cancellous Screw, D=7.5mm	140	3175I-140

All implants are available sterile-packed optionally. Add „-S“ to the article number for sterile-packed implants (e.g. 37304-I2-S; 2103I-3-S). Delivery times, prices & minimum quantity vary from standard.

# Instruments

## Guide Wire



35261-230

Description	Article Number
Guide Wire, Steel, D=2.5mm, L=230mm, TR	35261-230

## Depth Gauge



59321

Description	Article Number
Depth Gauge 3.2mm, 6.5mm and 7.3mm Can. Screw	59321

## Spiral Drill



61552-180

Description	Article Number
Spiral Drill, Cannulated D=5.5mm/D=2.6mm, L=180mm	61552-180

## Cortical Counter Sink



6360I-I50

Description	Article Number
Cortical Counter Sink, L=150mm, Cannulated, AO-Connector	6360I-I50

## Torque-Shank



54254-I50

 T25



54255-I50

 T25

Description	Article Number
Torque-Shank, T25xI50, T25xI50	54254-I50
Torque-Shank, T25xI50, T25xI50, Cannulated	54255-I50

## T-Handle Zimmer Hall



Description	Article Number
T-Handle Zimmer Hall, Cannulated	1U1125A







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). All information herein is the intellectual property of I.T.S. GmbH.



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