

Surgical Technique

2.7mm

Distal-Radius-System





This surgical technique alone does not provide sufficient background for immediate use of the described system. An instruction by a qualified surgeon who is experienced in handling the system is therefore strongly recommended.

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Product Information

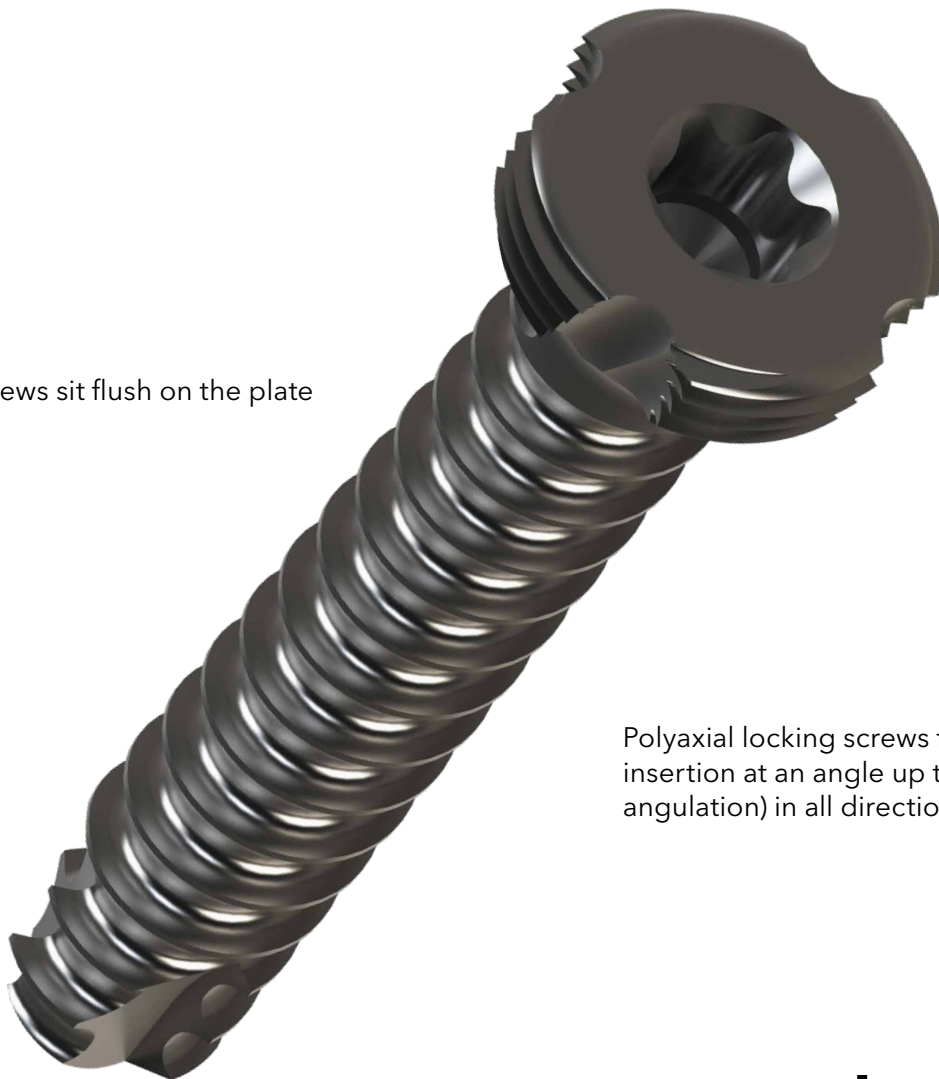
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Self-retaining T7 screw drive

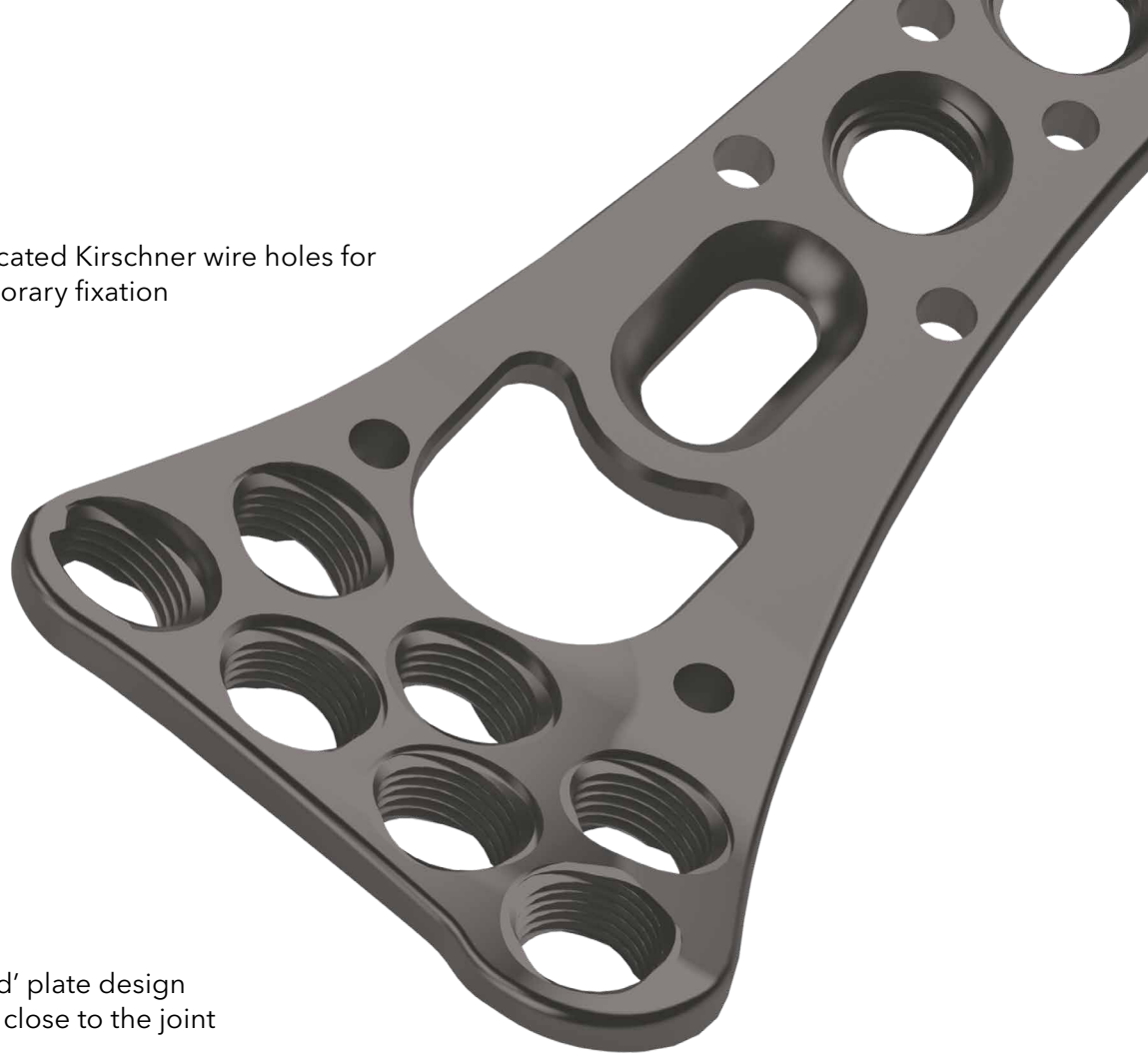
Screws sit flush on the plate

Polyaxial locking screws for multidirectional insertion at an angle up to 15° (off-axis screw angulation) in all directions

Type II anodization for a simplified implant removal after fracture healing

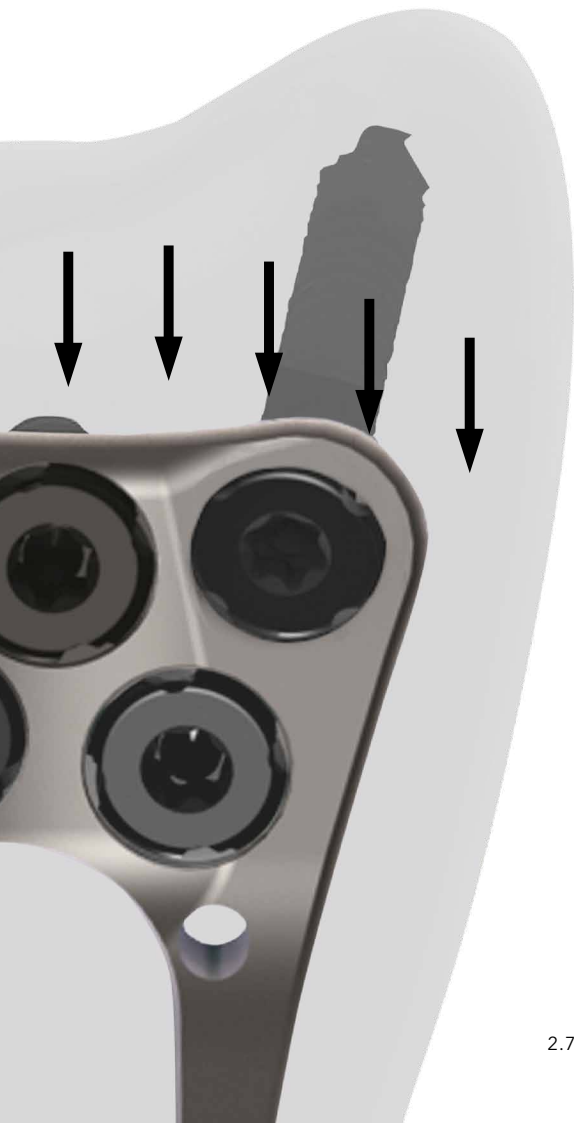


Dedicated Kirschner wire holes for temporary fixation



Anatomical 'Watershed' plate design for optimal placement close to the joint space

Rounded edges, the slim plate profile and the smooth coated surface reduce the risk of irritation of the surrounding soft tissue



Two distal rows of screws for a stable fracture support

Features & Benefits

The anatomical plate design is especially adapted to the 'Watershed' line and allows for an optimal placement of the distal screws to fix the fragment line and support the subchondral surface while reducing the risk of flexor tendon irritations.

Two distal rows of screws provide a stable fracture support, with the first row stabilizing the central articular surface and the second row stabilizing the dorsal portion.

Rounded edges, the slim plate profile, the smooth coated surface as well as screws that sit flush on the plate reduce the risk of irritation of the surrounding soft tissue.

The polyaxial locking screws enable multidirectional insertion at an angle up to 15° (off-axis screw angulation) in all directions and therefore provide the necessary intraoperative flexibility to individually consider particular fracture patterns.

The T7 screw drive ensures optimal force transmission, reduces the risk of deformation of the screw drive and allows for self-retention of the screw on the screwdriver.

The special surface coating of the plates and screws (Type II anodization) favours a simplified removal of the implants after fracture healing.

Dedicated Kirschner wire holes in the plate allow for temporary Kirschner wire fixation to facilitate the positioning of the plate on the bone.

The optimized plate design as well as the reasoned set configuration with polyaxial locking screws and cortical screws only, lead to a considerable reduction in the number of implants while providing excellent intraoperative flexibility. The single screw diameter and single screw drive for all required screws reduces the number of instruments.

Clinical Case

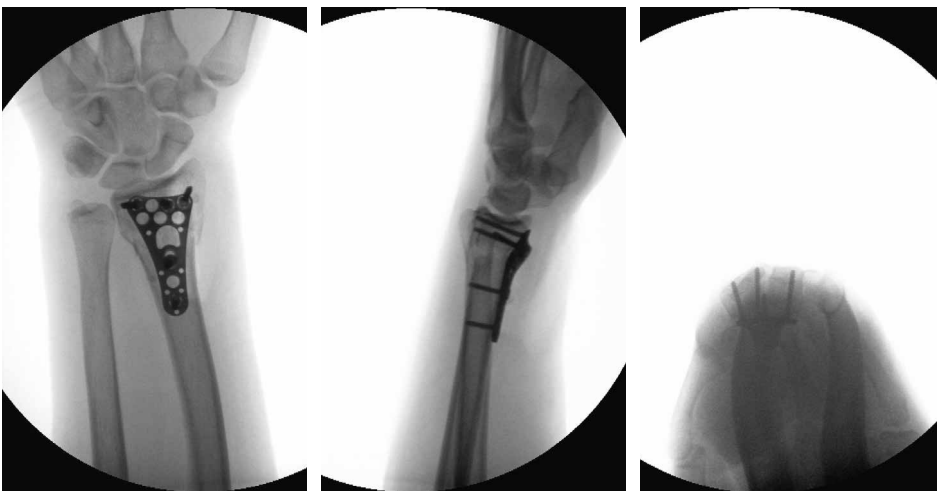
(PROVIDED BY THE DEPARTMENT OF ORTHOPEDICS AND TRAUMA SURGERY, UNIVERSITY OF FREIBURG MEDICAL CENTER)



1. PREOPERATIVE X-RAYS



2. PREOPERATIVE CT SCANS



3. INTRAOPERATIVE X-RAYS



4. POSTOPERATIVE X-RAYS

39-year-old male patient
Fracture of the left distal radius resulting from a fall

Indications

The 2.7mm Distal-Radius-System is indicated for the treatment of intra- and extra-articular fractures and osteotomies of the distal radius.

Surgical Technique

1. Preparation

Make a longitudinal incision approximately 5cm radial to the tendon of the Flexor Carpi Radialis (FCR). Incise the forearm fascia between FCR and the vascular nerve bundles. Move towards the Pronator Quadratus. Make an L-shaped incision to the fascia of the Pronator Quadratus and push the muscle from the distal radius towards the ulna.

2. Selection of the plate

Select the required plate length and width and check the marking on the plate to ensure that the plate for the desired side was selected („R” for right or „L” for left). The plate features a prominent distal lip on the ulna’s side.



3. Positioning of the plate

After the reduction of the fracture, position the plate at the volar surface of the radius. If necessary, perform a temporary fixation with Kirschner wires through the dedicated holes in the plate.



Confirm the correct positioning of the plate with the image intensifier.



Use the double drill sleeve and the drill Ø1.9mm to prepare a screw hole through the long hole in the shaft of the plate.



Determine the required length of the screw with the depth gauge for 2.7mm screws.



Insert the corresponding 2.7mm cortex screw and tighten it with the T7 screwdriver. If necessary, adjust the position of the plate before final tightening.



4. Insertion of the locking screws

Prepare additional screw holes for 2.7mm polyaxial locking screws using the drill Ø1.9mm. Start with the most proximal screw hole.

The drill Ø1.9mm must always be used in conjunction with a drill guide to prevent direct contact with the surrounding tissue, to prevent damage to the plate and to ensure proper alignment of the screw hole. To do so, the methods described under points a. and b. can be applied.

a. Polyaxial drill guide

Except for the long hole, all plate holes can be used with polyaxial locking screws. To drill a screw hole in a variable angle (up to 15° in all directions), insert the polyaxial drill guide in the respective plate hole and use the drill Ø1.9mm to drill a screw hole in the desired angle.



b. Monoaxial drill guide

Screw holes are prepared at a predefined angle using the drill sleeve with scale and the drill Ø1.9mm. Insert the drill sleeve with scale into the desired plate hole and use the drill Ø1.9mm to prepare a screw hole with the predefined angle. The required screw length can be read at the laser marking on the drill Ø1.9mm and the scale on the drill guide.

After screw hole preparation, remove the drill guide.



Determine the screw length using the depth gauge for 2.7mm screws.



Insert the appropriate 2.7mm polyaxial locking screw and tighten it with the T7 screwdriver.



Repeat the steps described above until a stable fixation of the fracture is achieved and finally check that all screws are tightened.

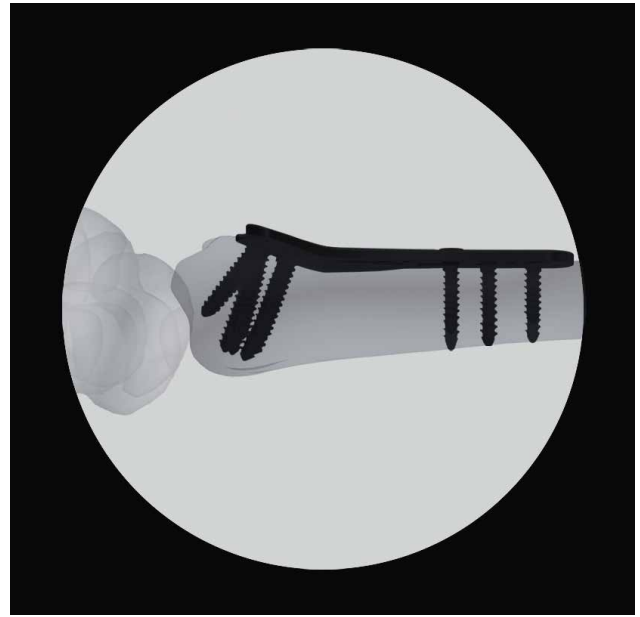


5. Control of the fracture treatment



Use the image intensifier to check the correct anatomical reduction of the fracture, the correct plate position and the correct lengths and angulations of the inserted screws.

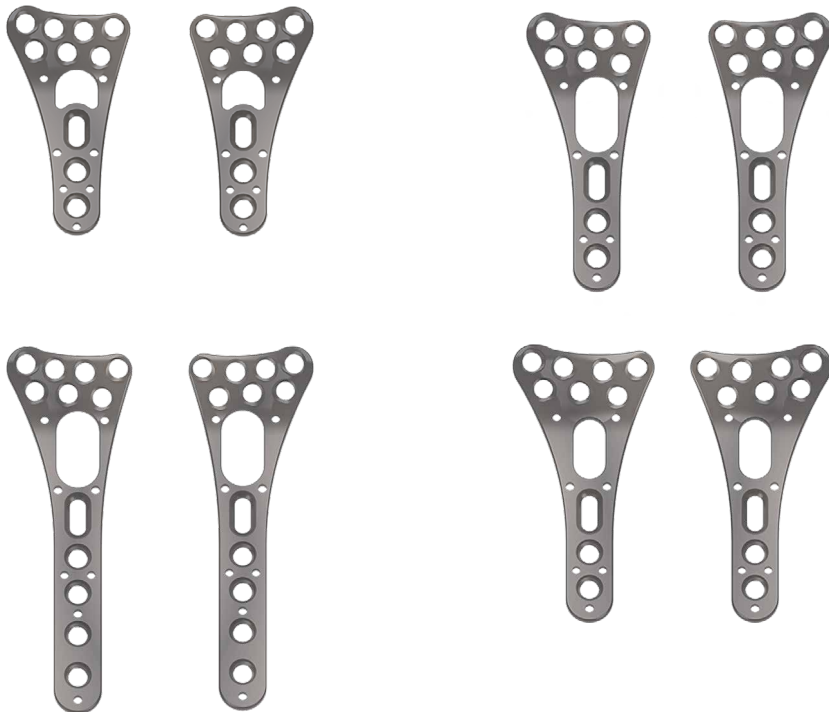
An additional sky view x-ray is recommended to ensure that the distal screws do not penetrate the joint space.



Implants

PLATES*

Article No.	Head Holes	Shaft Holes	Length in mm	Width in mm	Right/Left
150-6600-202	7	3	44	23,5	R
150-6600-203	7	3	44	23,5	L
150-6600-204	7	3	53	23,5	R
150-6600-205	7	3	53	23,5	L
150-6600-206	7	5	70	23,5	R
150-6600-207	7	5	70	23,5	L
150-6600-214	7	3	53	27	R
150-6600-215	7	3	53	27	L



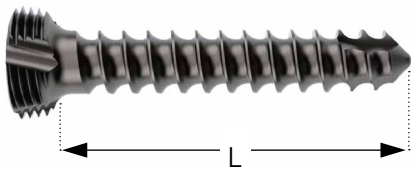
* Titanium - 6% Aluminium - 4% Vanadium Alloy (Ti6Al4V); anodized according to VH-TYPE II
 All plates are also available sterile packed. The article number is extended by an „S“.

SCREWS*

Polyaxial Locking Screws Ø2.7mm

150-6127-008PTXL-

150-6127-036PTXL

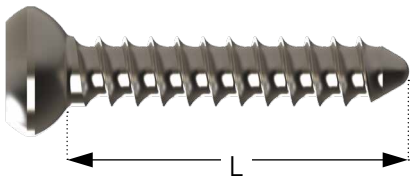


T7

Cortex Screws Ø2.7mm

150-6127-010TX-

150-6127-040TX



T7

Polyaxial Locking Pins Ø1.9mm

150-6019-016STL-

150-6019-024STL



T7

The screw length is measured exclusive screw head.

* Titanium - 6% Aluminium - 4% Vanadium Alloy (Ti6Al4V); anodized according to VH-TYPE II
All screws are also available sterile packed. The article number is extended by an "-S".

Instruments

Kirschner wire w. trocar point
004-0331-016



Screwdriver shaft T7, w. AO-conn.
150-7100-004



Screwdriver handle w. AO-coupling
150-7100-005



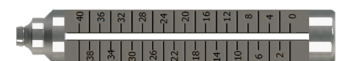
Drill Ø1.9mm, w. AO-conn.
150-7100-010



Drill guide f. drill Ø1.9mm, polyaxial
150-7100-017



Drill guide f. drill Ø1.9mm, w. scale
150-7100-019



Double drill sleeve 2.7 / 2.0mm
005-0222-021



Depth gauge f. 2.7mm screws
150-7100-031



Dismantling

Steps for reprocessing

- 1) Disassembling
- 2) Manual cleaning*
- 3) Automated cleaning with manual pre-cleaning and ultrasonic cleaning
- 4) Visual inspection and function control check
- 5) Assembling
- 6) Steam sterilization

* For detailed instructions on manual cleaning, automatic cleaning and steam sterilization, please refer to mahe medical document "Instructions for Use – Surgical Instruments".

Double drill sleeve 2.7 / 2.0mm (005-0222-021)

1)



2)



Depth gauge f. 2.7mm screws (150-7100-031)

1)



2)





mahe medical gmbh
Friedrich-Wöhler-Str. 10
78576 Emmingen
Germany

Distribution:
Synmedics GmbH
Huschbergerstr. 6
40212 Düsseldorf
Germany

Phone: +49 211 868 1550 0
Fax: +49 211 868 1550 1
Email: info@synmedics.com
www.synmedics.com