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PRODUCT INFORMATION

Hand System 1.2 – 2.3

APTUS Hand

Contents

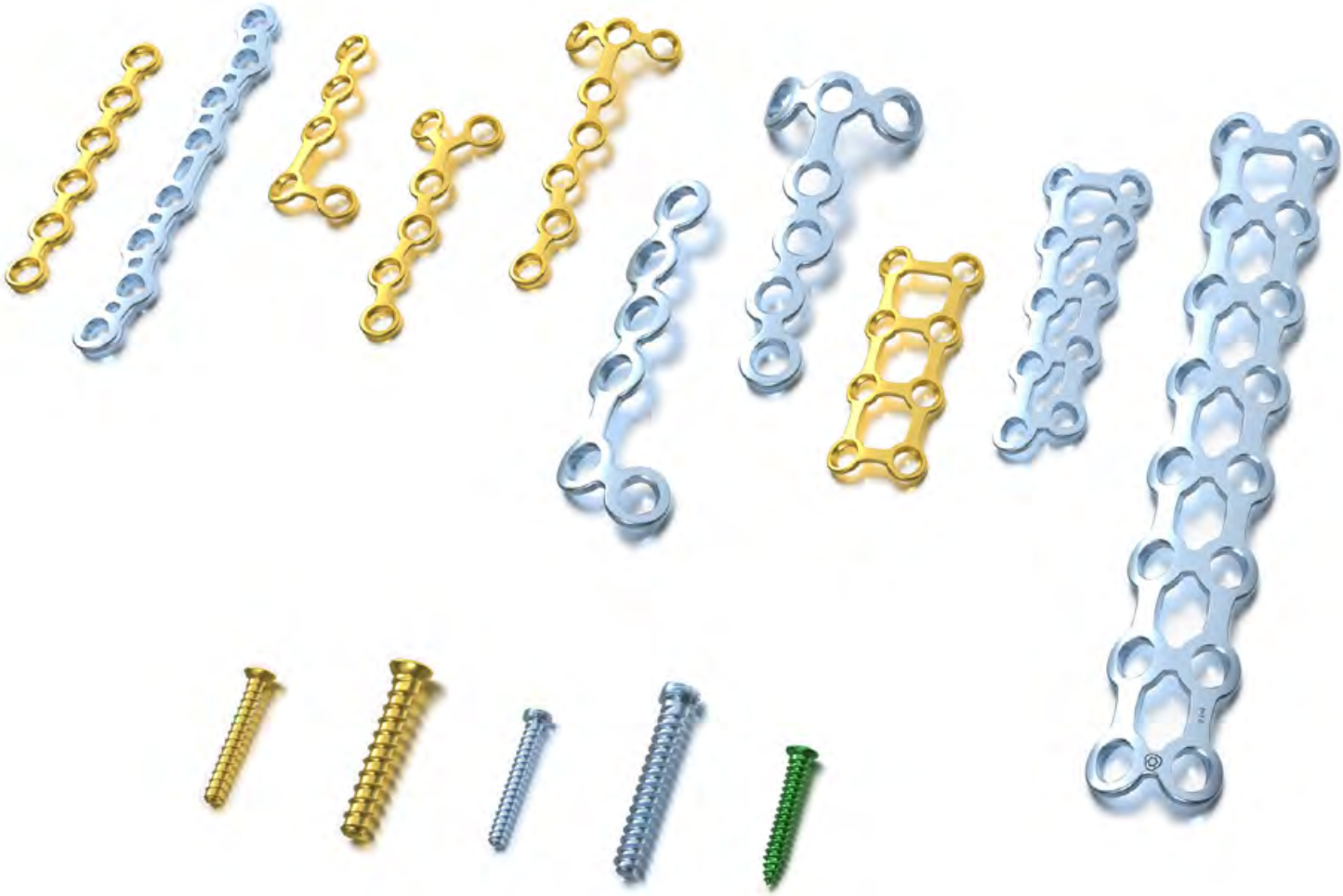
For further information regarding the APTUS product line visit www.medartisusa.com

APTUS Hand.
The Next Level of Versatility.

The hand is one of the most complex and most frequently utilized parts of the human musculoskeletal system.[1] It is composed of several closely balanced structures, e.g. bones, muscles, ligaments, tendons, joints and nerves. The goal of hand surgery is to minimize the impact of hand diseases and injuries on daily activities and to restore and obtain as much functionality as possible.

In collaboration with leading specialists, Medartis has developed the unique APTUS Hand System for treatment of fractures, osteotomies and arthrodesis of the hand.[2] In order to meet the requirements of the delicate structures of the hand, the various plate designs are adapted to the bone's shape. The implants portfolio offers different technologies, designs, and sizes to support early mobilization and active therapy.

With the introduction of TriLock, Medartis was the first company to offer a fully modular multidirectional and angular stable hand fixation system.



The APTUS Hand System offers a comprehensive selection of both basic and specialized plates for treatment of fractures, osteotomies and arthrodesis of the hand.

With 65 unique titanium plates the system stands out with a 1.2 multidirectional and angular stable locking system along with 1.5 self-drilling screws for hand osteosynthesis.

It also includes indication specific plates, a broad selection of hook plates for bony avulsions, and plates combining locking and compression in one step.

Color-coded instrumentation, a secure connection between screw and screwdriver, new forceps and clamps to support the surgical procedure and a modular storage solution complete the performance you expect.

Fixation Plates

General plate shapes – straight, L-/T-/Y-shape, and grid structure – are designed to match most bony anatomies and to support fracture reduction.[3]

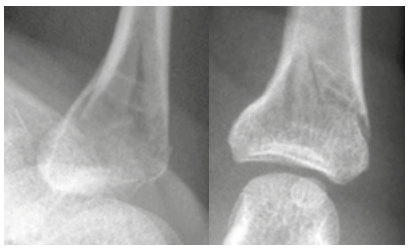
Low plate profile – with plate thicknesses of 0.6, 1.0 and 1.3 mm.

Two screw sizes are available within each plate system for adequate fragment fixation:

- 1.2 or 1.5 screws in 1.2/1.5 plates
- 2.0 or 2.3 screws in 2.0/2.3 plates

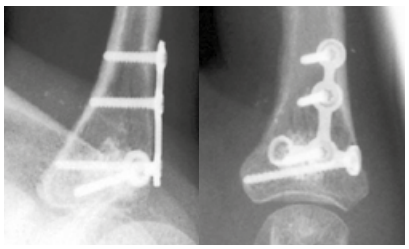
1.2/1.5 and 2.0/2.3 Fixation Plates

Extraarticular basis fracture of a proximal phalanx



Preoperative X-rays.

Intraoperative image.



Postoperative X-rays.

Clinical case published with the kind permission of: C. Ranft, Kiel, Germany

TriLock Plates

Internal fixator principle (locking system) allows initiation of mobilization in the early postoperative period.[4]

General plate shapes – straight, L-/T-/Y-shape, and grid structure – are designed to match most bony anatomies and to support fracture reduction.

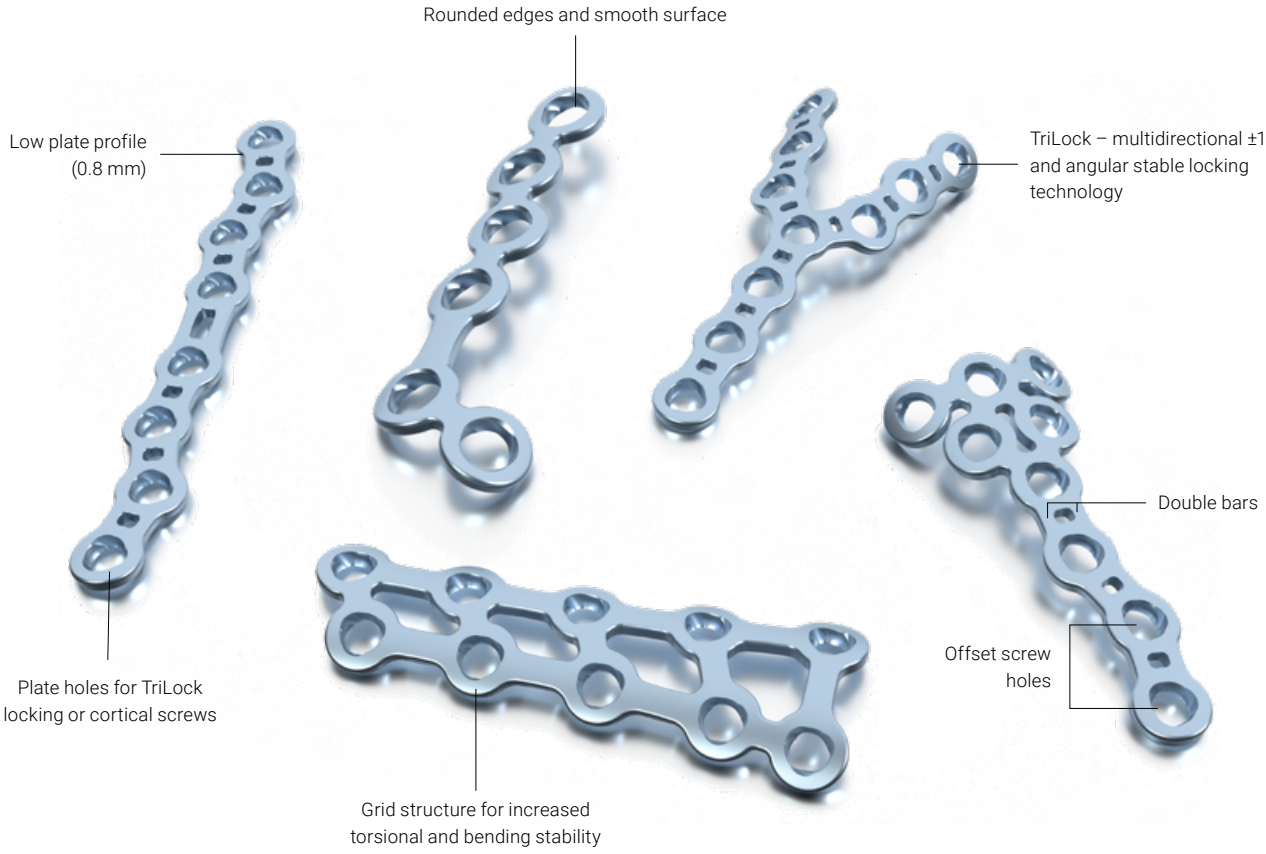
Fracture specific plate geometries – e.g. double-row T-plates – offer more screw options in the subchondral area, allowing for more reduction options of articular fracture fragments and fractures close to the joint.

Double bars between screw holes increase torsional stability.

Offset screw holes prevent crack formation during drilling and screw insertion.

Low plate profile – with plate thicknesses of 0.8, 1.0 and 1.3 mm.

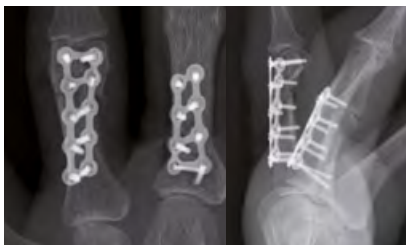
1.2/1.5 and 2.0/2.3 TriLock Plates



Fracture of the proximal phalanges III and IV

Preoperative X-rays.

Intraoperative image.



Postoperative X-rays.

Clinical case published with the kind permission of: D. Schaefer, Basel, Switzerland

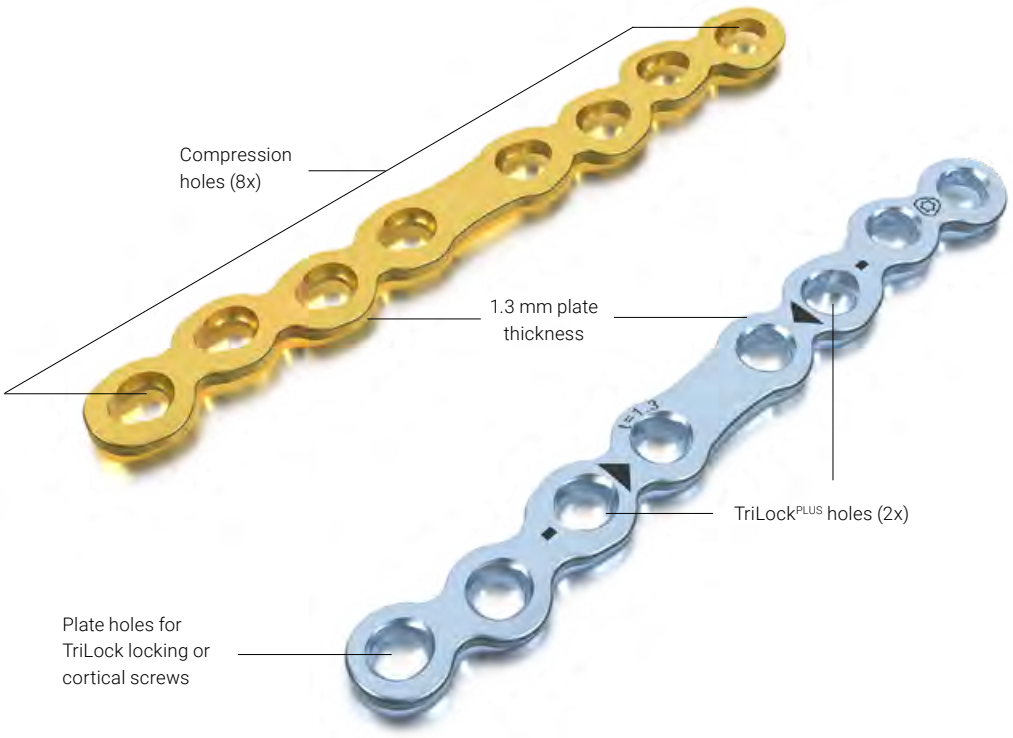
Compression Plates

TriLock^{PLUS} combines compression and locking in one step.

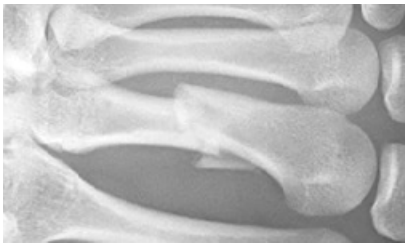
TriLock^{PLUS} holes allow up to 1 mm compression. With two opposing TriLock^{PLUS} holes on the plate up to 2 mm compresion can be achieved.

For adequate fixation the general plate geometries – straight, L-/Y-shape – may be additionally adapted (i.e. cut, bent) to different bone shapes and fracture location.

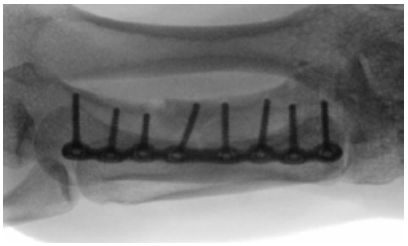
2.0/2.3 MC Compression and TriLock^{PLUS} Plates



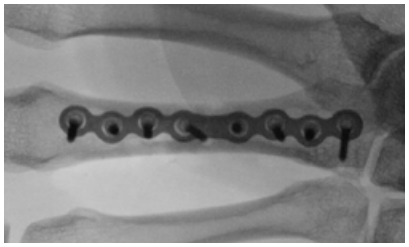
Metacarpal shaft fracture



Preoperative X-ray.



Postoperative lateral X-ray.



Postoperative AP X-ray.

Clinical case published with the kind permission of: F. Unglaub, Bad Rappenau, Germany.

Hook Plates

Hooks are pressed into the avulsed fragment to capture and reduce it to its original anatomical shape.[5]

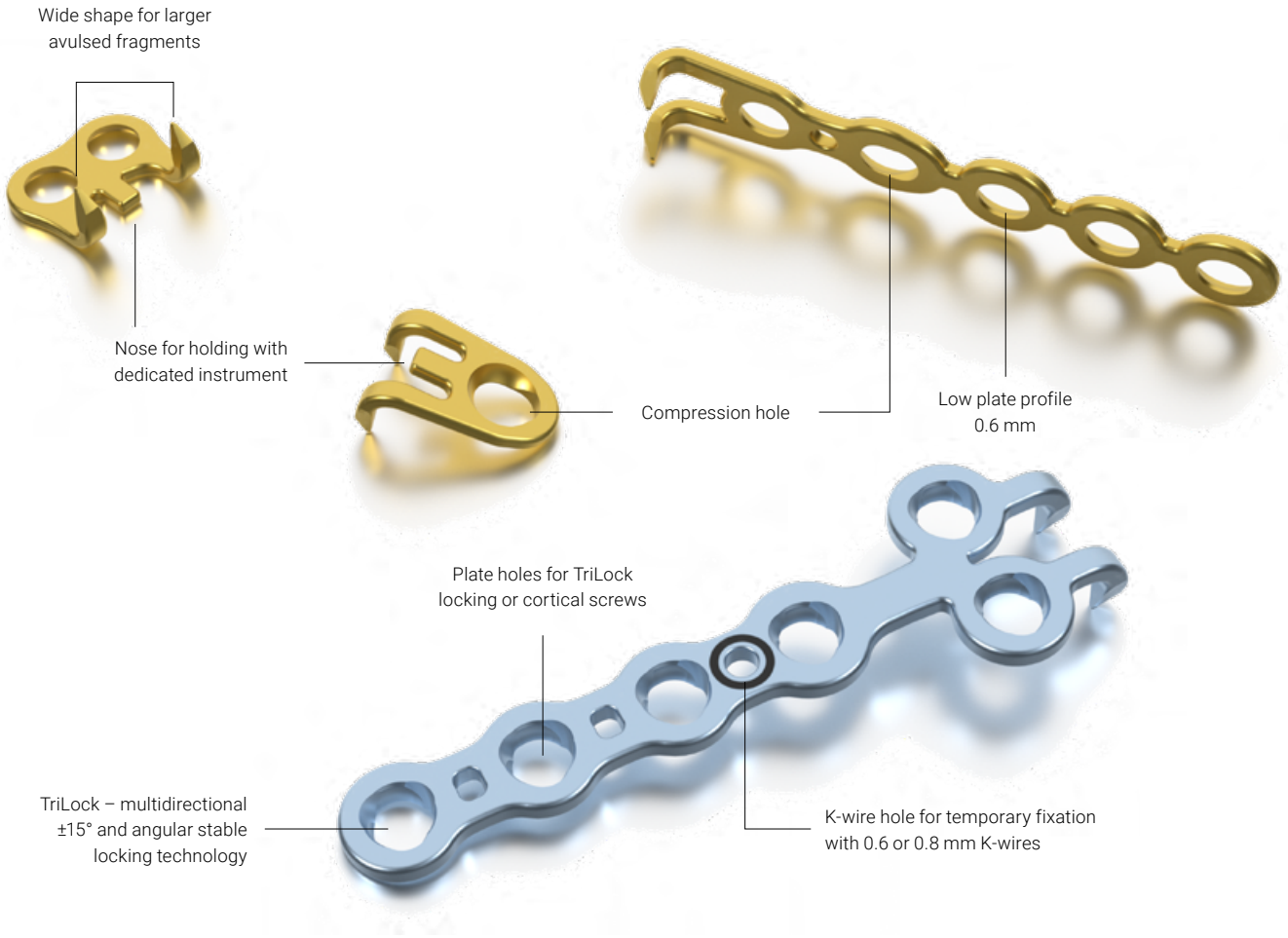
Dedicated holding instrument and K-wire holes support reduction of bony avulsion and plate positioning.

Long hook plates with several holes offer more fixation options.

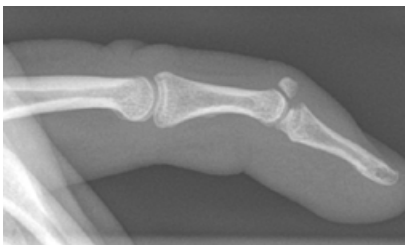
The combination of hooks and TriLock holes increases stability in case of bony avulsion and intraarticular fragments.

For adequate fixation the long hook plates may be additionally adapted (i.e. cut, bent) to different bone shapes and fracture location.

1.2/1.5 Fixation and TriLock Hook Plates

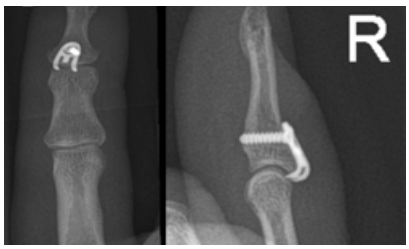


Fixation of Mallet fracture



Preoperative X-ray.

Intraoperative image.



Postoperative X-rays.

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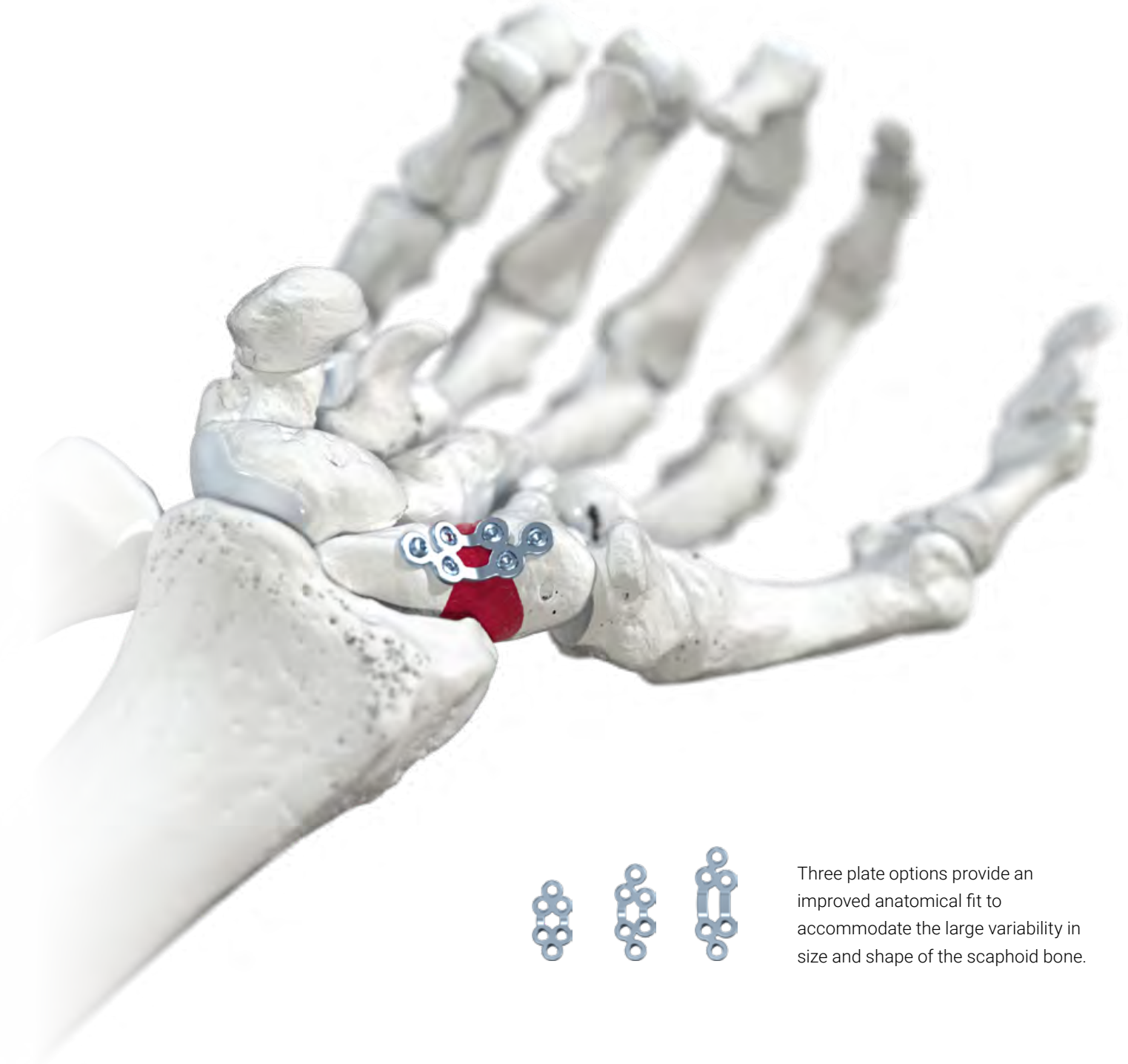
Scaphoid Plates

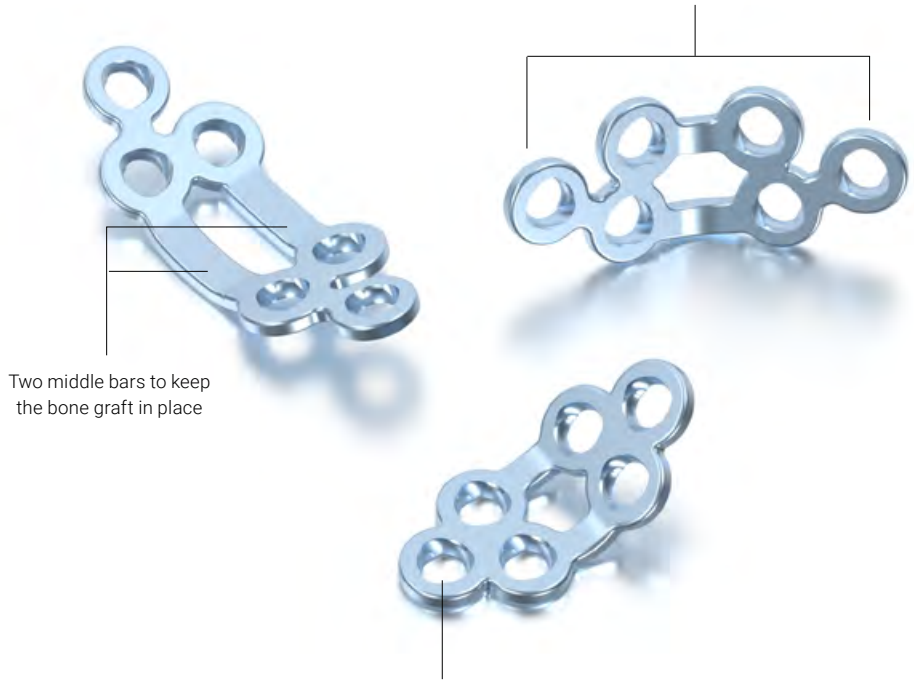
Scaphoid plates are designed to treat primarily non-unions.[6, 7, 8] In addition, they allow the treatment of multifragmentary, complex or very distal fractures of the scaphoid.



Three plate options provide an improved anatomical fit to accommodate the large variability in size and shape of the scaphoid bone.

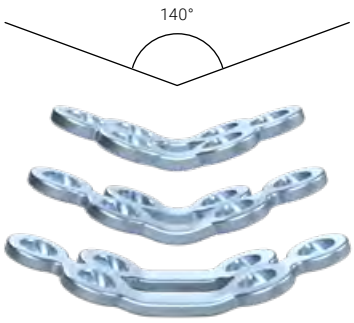
1.2/1.5 TriLock Scaphoid Plates

High degree of stability due to the grid structure
and up to three TriLock screws on each side of the non-union



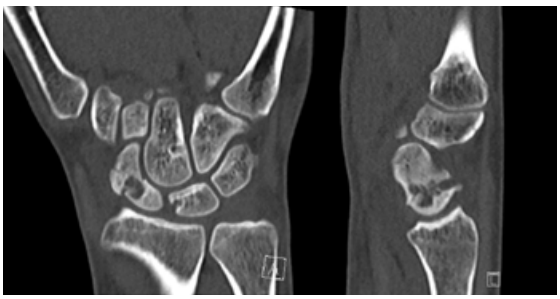
Two middle bars to keep
the bone graft in place

TriLock – multidirectional ±15° and
angular stable locking technology

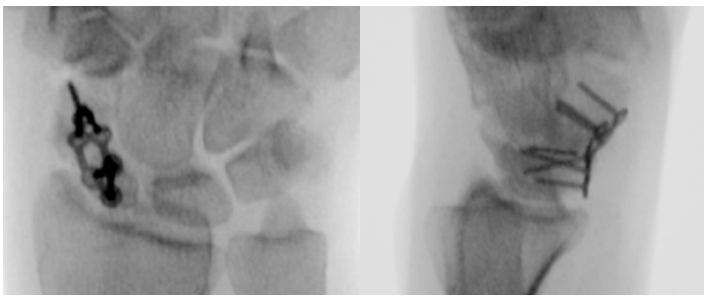


Anatomical plate shape with a 140° central bend

Non-union treated with the scaphoid plate



Preoperative X-rays.



Postoperative X-rays.

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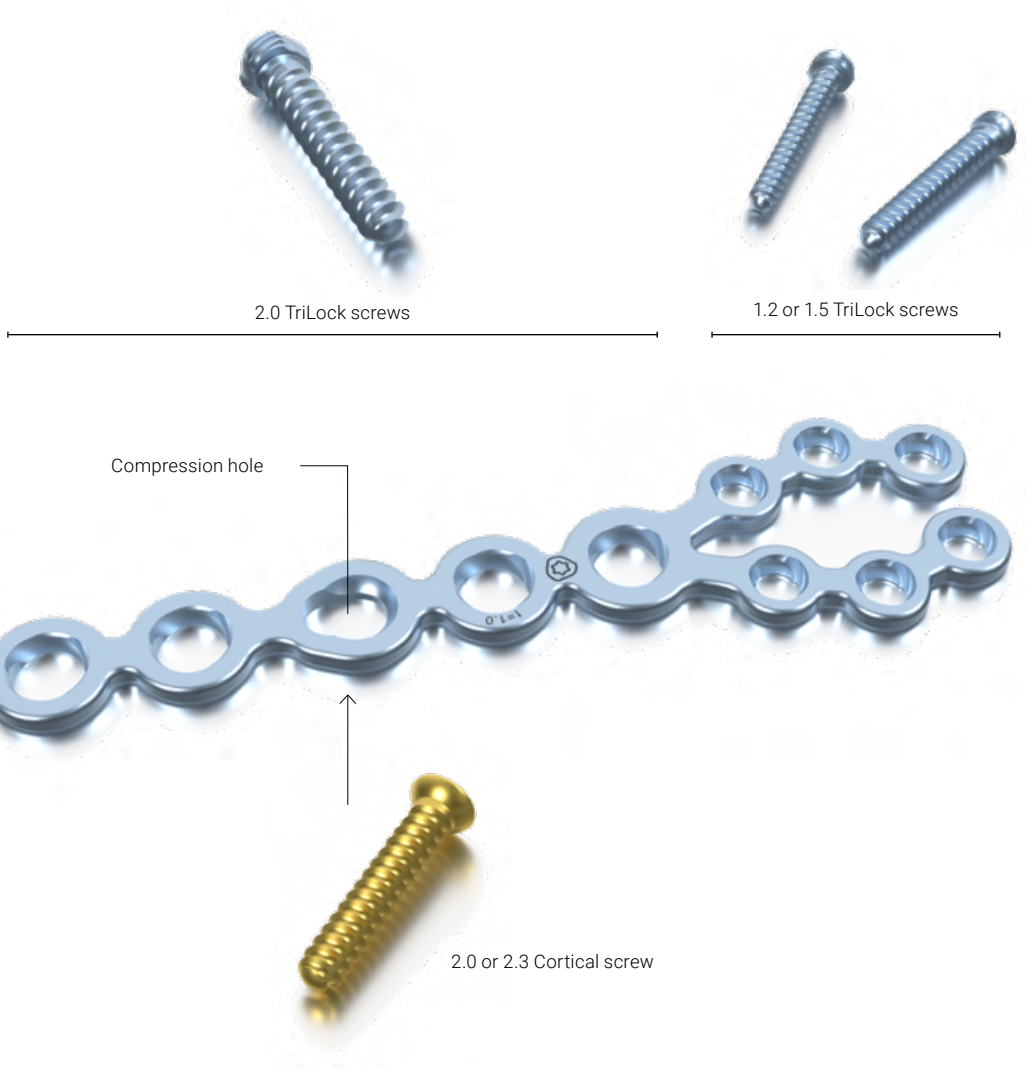
MC Head/Neck Plate

A combination of 1.5 and 2.0 TriLock screws enables fixation of comminuted fragments in the head/neck (1.2/1.5 screws) while maintaining necessary strength in the shaft (2.0/2.3 screws).

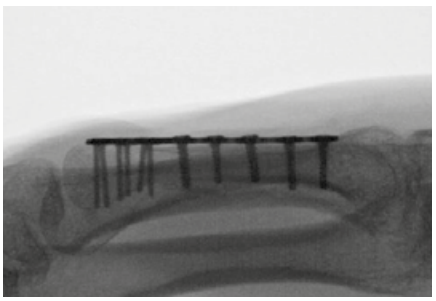
For an optimal fit in the head/neck region and shaft region the plate can be additionally adapted (i.e. cut, bent).

1.2–2.3 TriLock MC Head/Neck Plate

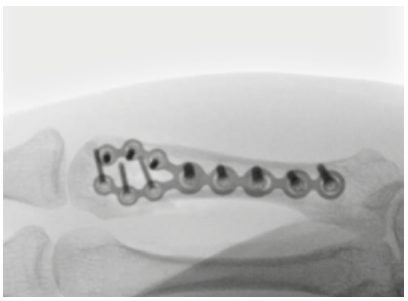


Metacarpal V head fracture

Preoperative X-ray.



Postoperative lateral X-ray.



Postoperative AP X-ray.

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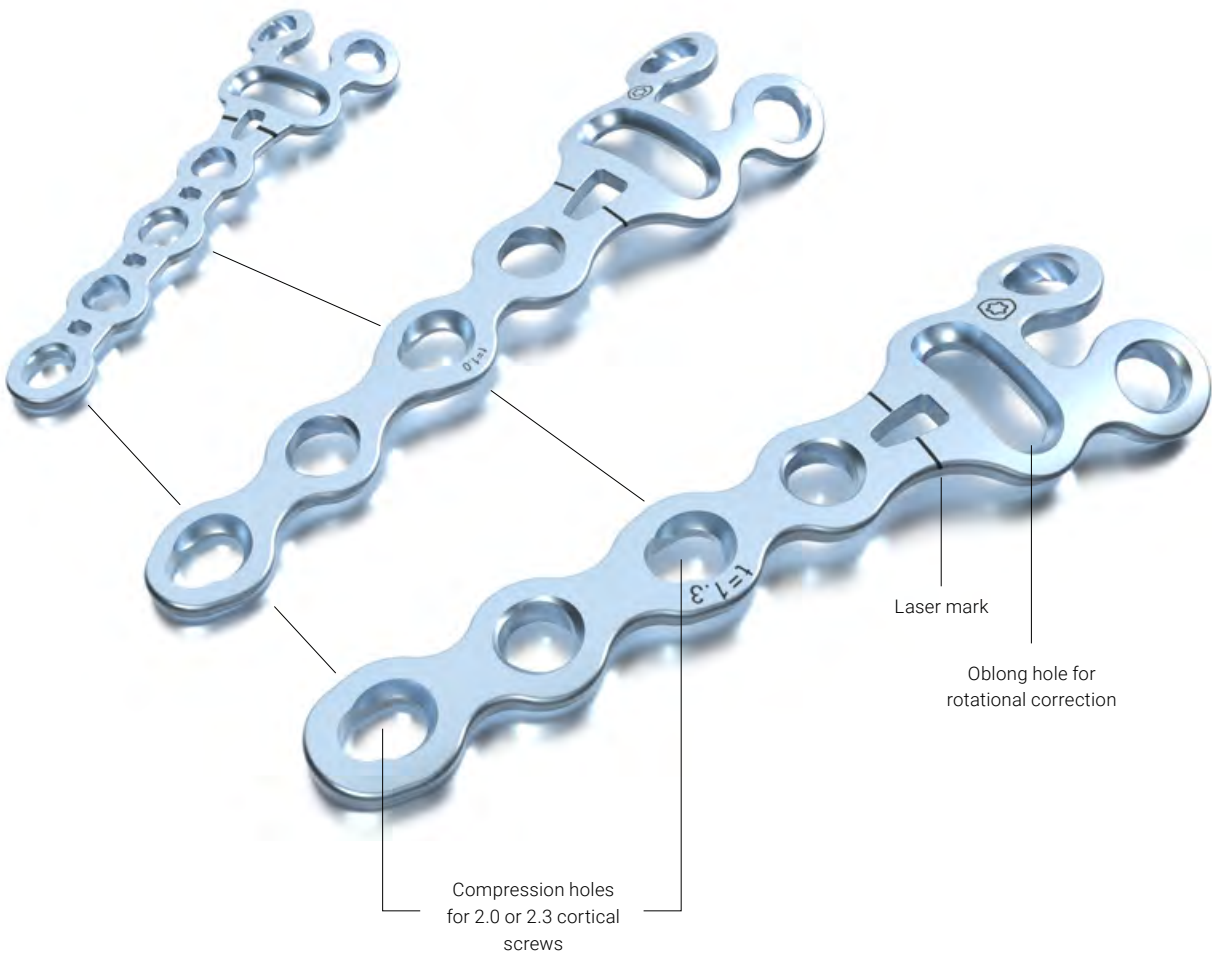
Rotation Correction Plates

- Laser mark supports positioning of the plate over the planned osteotomy site.
- Two compression holes allow for closing the osteotomy gap after rotational correction.
- Transversal oblong hole allows up to ± 25° of rotational correction and is close to the joint to perform the osteotomy near the metaphyseal area.
- Separate screw holes (“frog design") simplify contouring in the periarticular area.

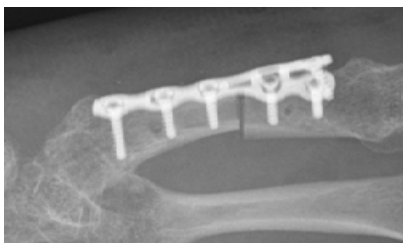
1.2/1.5 and 2.0/2.3 TriLock Rotation Plates



Rotational correction after malunion

Torsional deviation after carpometacarpal V arthrodesis following comminuted base fracture.

Intraoperative image.



Postoperative X-ray.

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Screws

Different screw diameters are available for each plate type:

	Cortical Screws				TriLock Screws			SpeedTip Screws
Diameter (mm)	1.2	1.5	2.0	2.3	1.2	1.5	2.0	1.5
Plate types	1.2/1.5 Fixation Plates 1.2/1.5 TriLock Plates		2.0/2.3 Fixation Plates 2.0/2.3 TriLock Plates 2.0/2.3 MC Compression Plates		1.2/1.5 TriLock Plates		2.0/2.3 TriLock Plates 2.0/2.3 TriLock^{PLUS} Plates	1.2/1.5 Fixation Plates 1.2/1.5 TriLock Plates

Cortical screw may be used for “screw-only” fracture fixation. The pitch and core diameter vary depending on screw length resulting in more stability, easier insertion and stable anchorage.

Emergency (cortical) screws also available:

- 1.8 cortical screw for 1.2/1.5 system
- 2.5 cortical screw for 2.0/2.3 system

Washers

Biconcave design distributes the forces over a larger bone surface around the screw head.

Washers

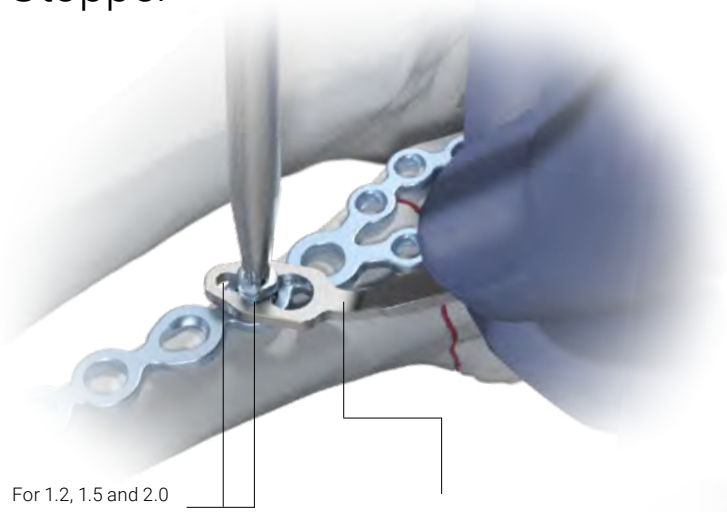
Instruments

General System Features

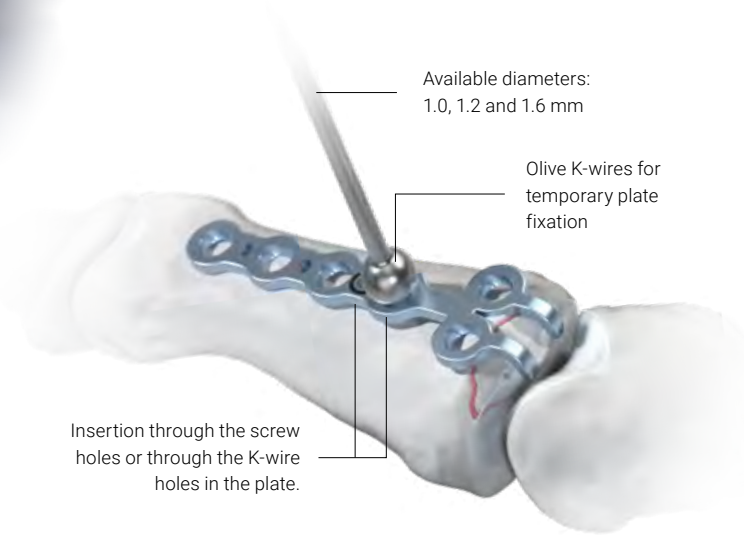
- Simple and easy-to-use instruments
- Color-coded instruments for easy identification in the operating room
- Finely adjusted ratcheting on reduction instruments

Clamps for Lag Screw Technique

Temporary Locking Stopper



Olive K-wires



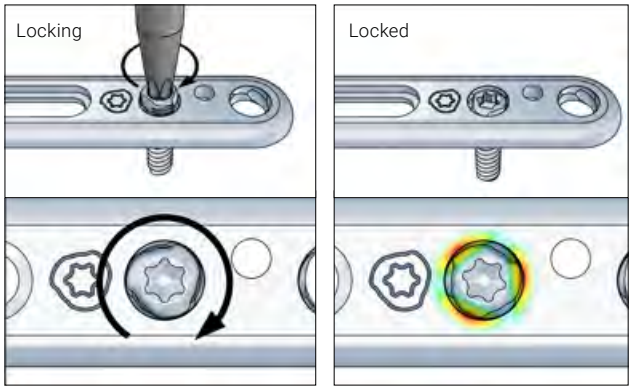
Technology

TriLock Locking Technology

TriLock is a multidirectional and angular stable locking technology.

Locking is achieved through:

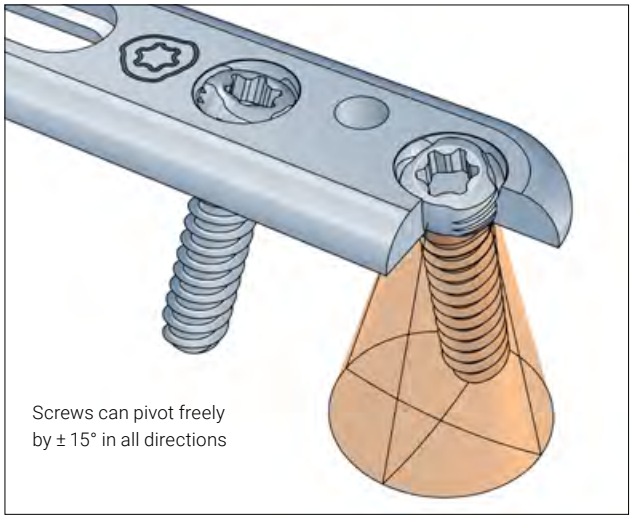
- Spherical three-point wedge locking, through radial bracing of the screw head in the plate without additional components



Spherical three-point wedge locking

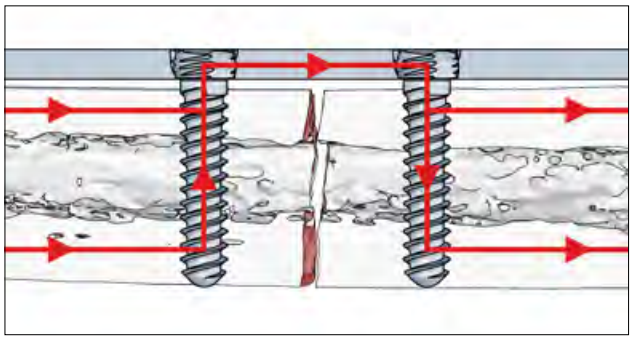
This locking technology enables:

- ± 15° multidirectional screw angulation to position screws based on the fracture pattern
- Re-locking a screw in the same plate hole at individual angles up to three times
- Fine tuning of fragments positioning due to the threadless locking technology
- No cold welding between plate and screws
- Flexibility in screw type selection based on indication and fracture — the same hole can be used for either locking or non-locking screws

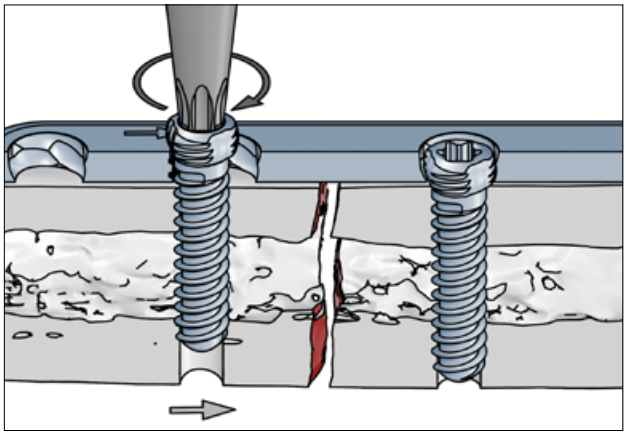


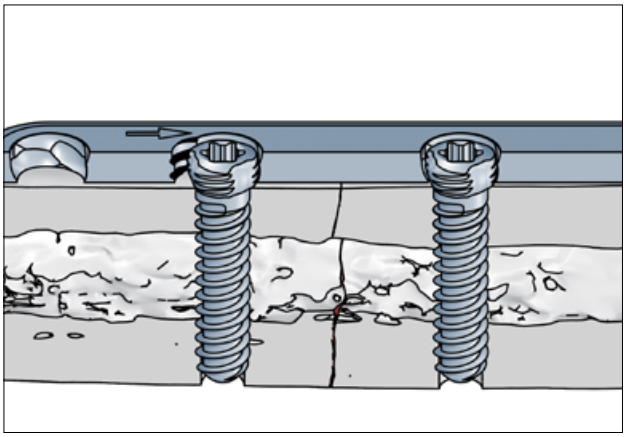
Internal fixator principle

Stable plate-screw construct allows for the bridging of unstable zones



TriLock^{PLUS}

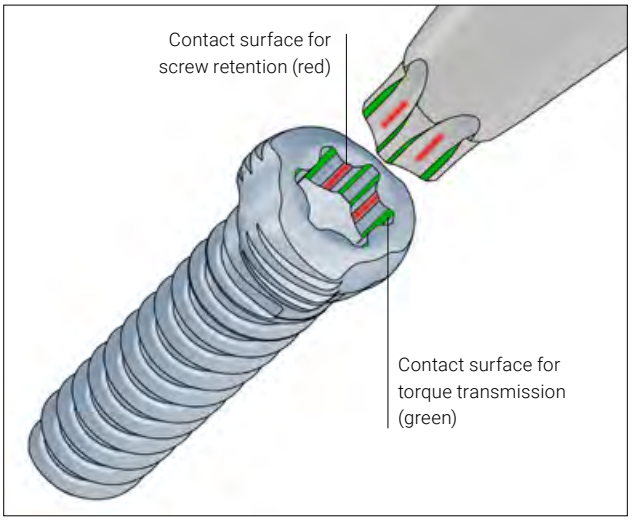


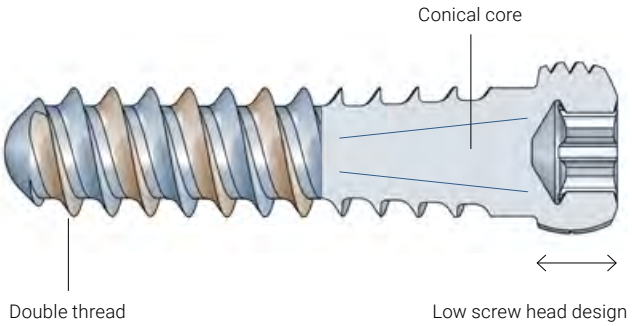


TriLock^{PLUS} screw holes offer the advantage of locking and compression in one step

Screw Features

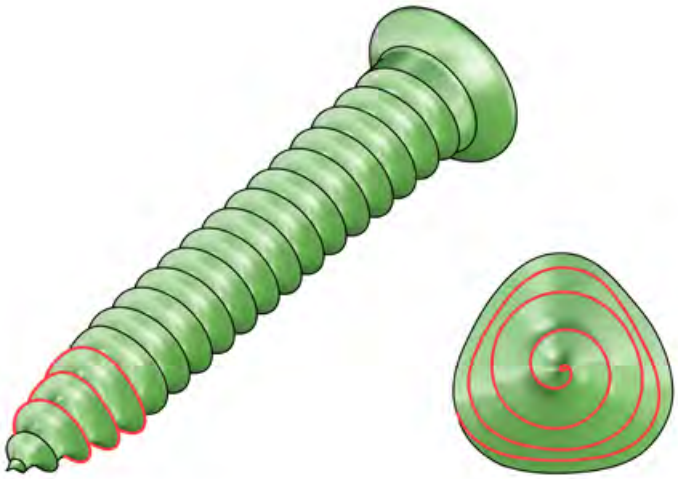
- HexaDrive screw head design:
  - HexaDrive interface with self-holding properties between screw and screwdriver
  - Increased torque transmission
  - Simplified screw pick-up due to the self-holding technology
- Atraumatic screw tip provides soft tissue protection when inserting screws bicortically
- Soft tissue protection due to smooth screw head design
- Double-threaded screws reduce screw insertion time
- Increased torsional, bending and shear stability due to conical core
- Precision cut thread profile for sharpness and self-tapping properties

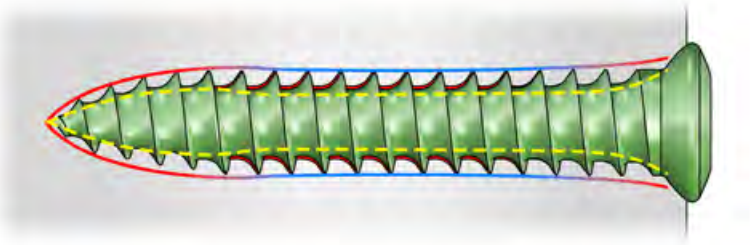




SpeedTip Thread Design

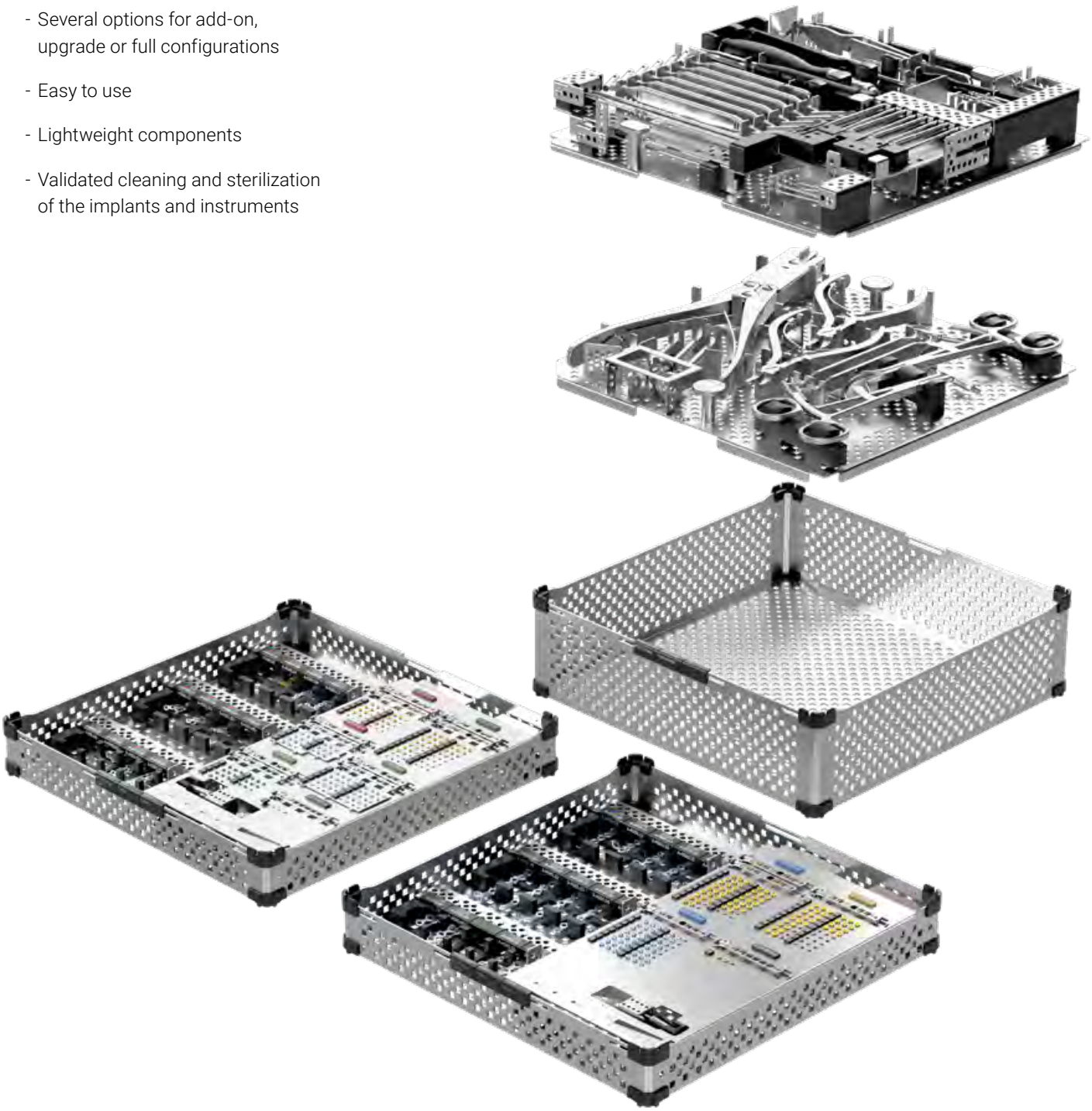
- Functionally unique cutting with immediate bite
- Immediate cutting of the bone with only slight axial pressure
- The triangular tip design permits simultaneous drilling, tapping, and compression of the bone tissue[9]
- The triangular tip design results in increased pull-stability[9]
- Reduced insertion torque thanks to the polygonal tip and tapered shaft





Storage

- Compact system
- Several options for add-on, upgrade or full configurations
- Easy to use
- Lightweight components
- Validated cleaning and sterilization of the implants and instruments



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