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For further information regarding the APTUS product line visit  
[www.medartis.com](http://www.medartis.com).

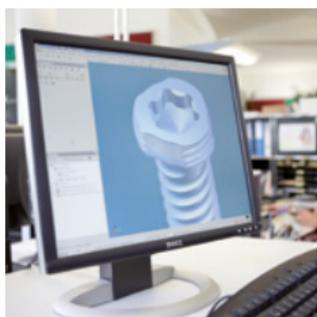
# Introduction Medartis

Medartis, headquartered in Basel, Switzerland, specializes in technical high-precision implant systems for surgical fixation of bone fractures and osteotomies.

Medartis develops, manufactures and sells titanium screws and plates, surgical instruments and system solutions for fracture fixation in the facial skull and the extremities.

Our motto is «Precision in fixation». Since the company's founding in 1997, we place the highest priority on maintaining stringent quality standards, continuous further development and innovation as well as comprehensive service provision.

Medartis is represented worldwide through its subsidiaries and a broad distributor network.

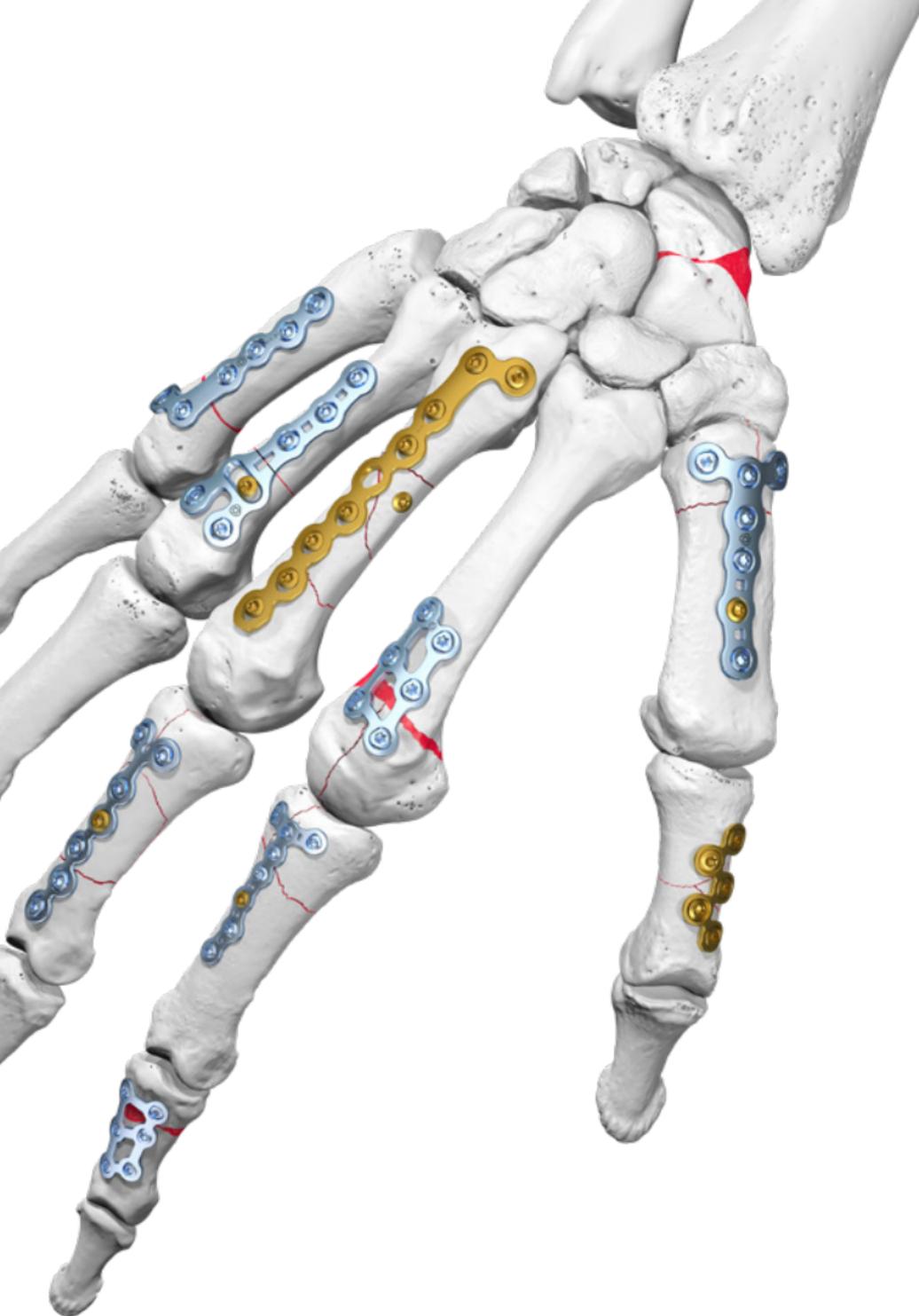


# Comprehensive Solutions for the Hand

## **APTUS Hand**

A broad portfolio of hand plates and screws to support the treatment of all fracture types and corrections.





### **APTUS Cannulated Compression Screws**

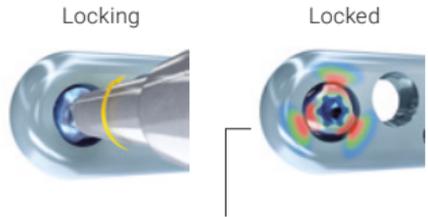
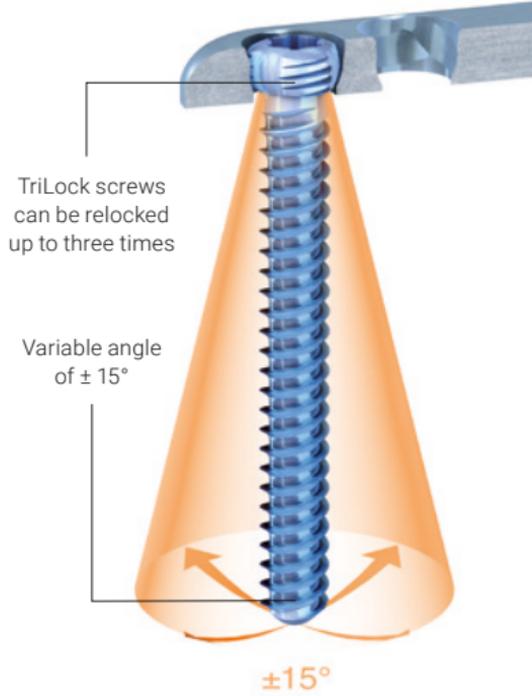
Comprehensive portfolio of cannulated screws and headed cannulated screws available with short thread, long thread or fully threaded in different diameters and lengths.

# APTUS Technologies

## TriLock locking technology

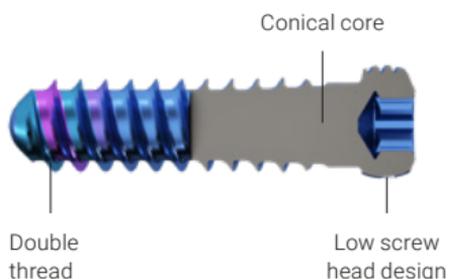
All APTUS systems are based on the multidirectional and angular stable TriLock locking technology.

- Patented TriLock locking technology
  - multidirectional locking of the screw in the plate
  - spherical three-point wedge-locking
  - friction locking through radial bracing of the screw head in the plate without additional tensioning components
- Screws can pivot freely by  $\pm 15^\circ$  in all directions for optimal positioning
- Fine-tuning capabilities of fracture fragments
- TriLock screws can be relocked in the same plate hole at individual angles up to three times
- Minimal screw head protrusion thanks to internal locking contour
- No cold welding between plate and screws



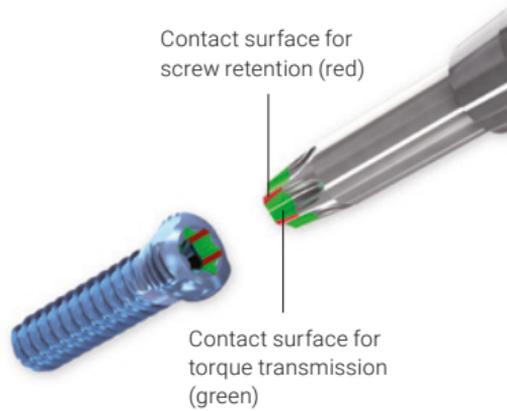
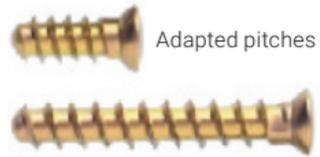
Patented TriLock locking technology – multidirectional locking of the screw in the plate

Minimal screw head protrusion



## Screw technology

- Patented HexaDrive screw head design
  - HexaDrive interface with self-holding properties between screw and screwdriver
  - increased torque transmission
  - simplified screw pick-up due to patented self-holding technology
- Soft tissue protection due to smooth screw head design
- Atraumatic screw tip offers soft tissue protection when inserting screws bicortically
- Increased torsional, bending and shear stability due to conical core
- Precision-cut thread profile for sharpness and self-tapping properties
- Adapted pitches of the screw thread in cortical screws depending on screw length
- Double-threaded TriLock screws reduce screw insertion time



## SpeedTip thread design

- Functionally unique cutting with immediate bite<sup>13</sup>
- Immediate cutting of the bone with only slight axial pressure
- The triangular tip design permits simultaneous drilling, tapping and compression of the bone tissue during insertion for increased pull-out stability<sup>14, 15</sup>
- Reduced insertion torque thanks to the polygonal tip and tapered shaft



## Plate Designs



### General features and benefits

- Anatomically precontoured and fracture-specific implant geometries for less or no intraoperative bending
- Rounded edges and a smooth surface for soft tissue protection
- Offset screw holes in numerous plates avoid screw collisions



- Color-coded implants for easy identification in the operating room:
  - gold = Fixation/compression plates and cortical screws (fixation)
  - blue = TriLock plates and TriLock screws (locking)
- Two screw sizes can be used for each plate thickness:
  - 1.2/1.5 screws for 1.2/1.5 plates with a plate thickness of 0.6 or 0.8 mm
  - 2.0/2.3 screws for 2.0/2.3 plates with a plate thickness of 1.0 or 1.3 mm

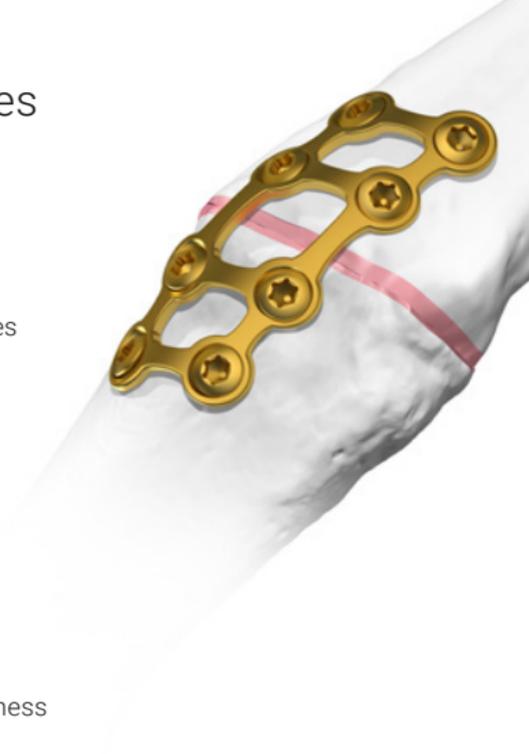
## 1.2 / 1.5 Fixation Plates

### Typical clinical findings

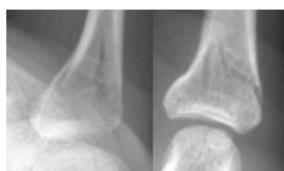
- Fractures in phalanges
- Unstable, non-comminuted fractures
- Simple intraarticular and extraarticular fractures
- For PIP arthrodesis

### Features and benefits

- Several design options: straight, L-/T-/Y-shape, and grid structure
- Low plate profile with 0.6 mm thickness
- L-, Y- and T-plates
  - reduction of periarticular and intraarticular fractures
- Broader bars in bridging zones
- Grid plates
  - increased torsional and bending stability



## Clinical Examples



Preoperative X-rays



Intraoperative image



Postoperative X-rays

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



Preoperative X-rays



Intraoperative image



Postoperative X-rays

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## 1.2 / 1.5 TriLock Plates

### Typical clinical findings

- Fractures in phalanges
- Comminuted fractures
- Simple and complex intraarticular and extraarticular fractures
- Fractures in osteoporotic bone
- For PIP arthrodesis

### Features and benefits

- Internal fixator principle for early mobilization
- Several design options: straight, T-shape, and grid structure
- Low plate profile with 0.8 mm thickness
- Double bars between screw holes for increased torsional stability
- Double row T-plate:
  - more screw options for support in the subchondral area
  - reduction of articular fracture fragments and fractures close to the joint
- Grid plates:
  - increased torsional and bending stability
  - for comminuted fractures in the metaphyseal and diaphyseal region
  - straight hole arrangement on one end of the plate to position the plate as close to the joint as possible



## Clinical Example



Preoperative X-rays



Intraoperative image



Postoperative X-rays

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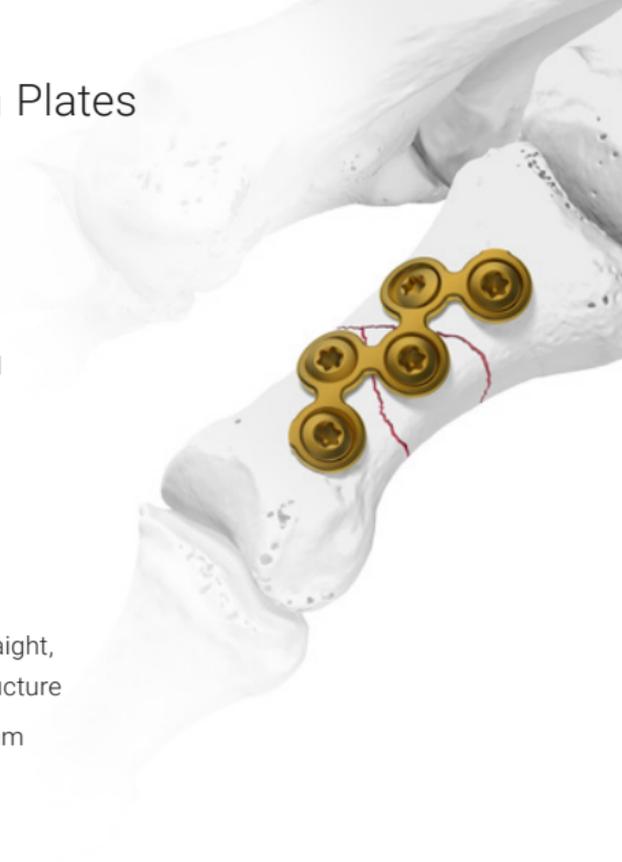
# 2.0 / 2.3 Fixation Plates

## Typical clinical findings

- Fractures in metacarpals and proximal phalanges
- Unstable, non-comminuted fractures
- Simple intraarticular and extraarticular fractures

## Features and benefits

- Several design options: straight, L-/T-/Y-shape, and grid structure
- Low plate profile with 1.0 mm thickness
- L-, Y- and T-plates
  - reduction of periarticular and intraarticular fractures
- Broader bars in bridging zones
- Grid plates
  - increased torsional and bending stability



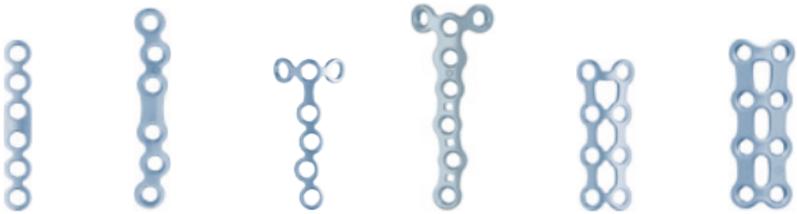
# 2.0 / 2.3 TriLock Plates

## Typical clinical findings

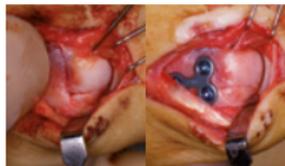
- Fractures in metacarpals and proximal phalanges
- Comminuted fractures
- Simple and complex intraarticular and extraarticular fractures
- Fractures in osteoporotic bone

## Features and benefits

- Internal fixator principle for early mobilization
- Several design options: straight, L-/T-/Y-shape, and grid structure
- Low plate profile with either 1.0 or 1.3 mm thickness
  - choice of construct stability
- L-, Y- and T-plates:
  - reduction of articular fracture fragments and fractures close to the joint
  - broader bars in bridging zones
- Grid plates:
  - increased torsional and bending stability
  - for comminuted fractures in the metaphyseal and diaphyseal region
  - straight and offset hole arrangements



## Clinical Example



Preoperative X-ray

Intraoperative images

Postoperative X-ray

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

# 2.0 / 2.3 MC Compression Plates

## Typical clinical findings

- Fractures in metacarpals only
- Extraarticular fractures
- Not for comminuted fractures
- Transverse fractures (compression plating)
- Oblique and spiral fractures (neutral plating)

## Features and benefits

- Several design options: straight, L-/Y-shape
- Low plate profile with 1.3 mm thickness
- Up to 2 mm compression possible
- Y- and T-plates
  - reduction of periarticular and intraarticular fractures
- Broader bars in bridging zones



## Clinical Example



Preoperative X-rays

Intraoperative image

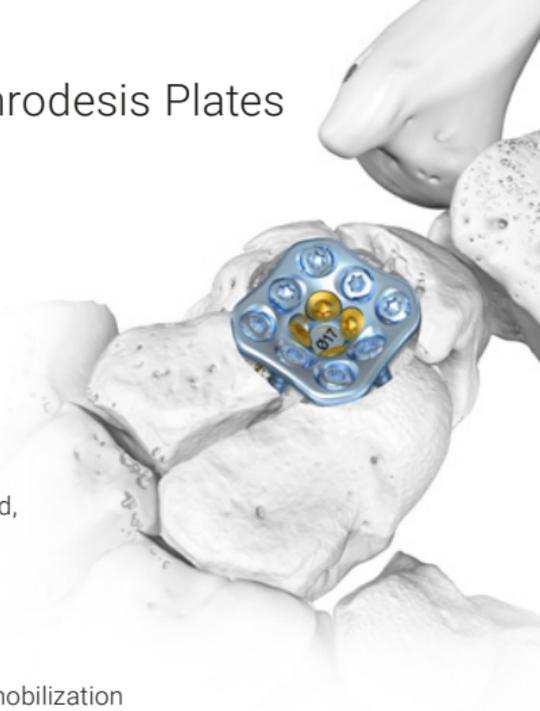
Postoperative X-rays

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## 2.0 / 2.3 TriLock Arthrodesis Plates

### Typical clinical findings

- 4CF plates
  - Osteoarthritis between radius, scaphoid and potentially midcarpal joint
- STT plate
  - Osteoarthritis between scaphoid, trapezium and trapezoid



### Features and benefits

- Internal fixator principle for early mobilization
- Options for compression and stable fixation of the carpal bones
  - compression using cortical screws
  - angular stable fixation using TriLock screws
- Concave shape of plates and corresponding reamers
  - minimal bone removal
  - simple handling without intraoperative tilting of the plates
  - at least two screws can be inserted in each carpal bone
- 4CF-plates
  - two sizes to meet individual anatomical requirements
  - straight and offset hole arrangements



## Clinical Examples



Intraoperative X-rays



Intraoperative image



Postoperative X-rays

Clinical example published with the kind permission of: Arnold-Peter Weiss, Providence, USA



Preoperative X-rays



Intraoperative image



Postoperative X-rays

Clinical case published with the kind permission of: Arnold-Peter Weiss, Providence, USA

# Special Plates

## Hook plate

### Typical clinical findings

- Bony avulsions (e.g. mallet fractures)

### Features and benefits

- Tap on plate for supported fragment reduction with holding instrument
- Compression hole



## Scaphoid plate

### Typical clinical findings

- Non-unions and multifragmentary fractures of the scaphoid

### Features and benefits

- High degree of stability due to grid structure and up to three TriLock screws on each side of the non-union
- Anatomically preshaped to correct humpback deformity
- Two middle bars to keep the bone graft in place



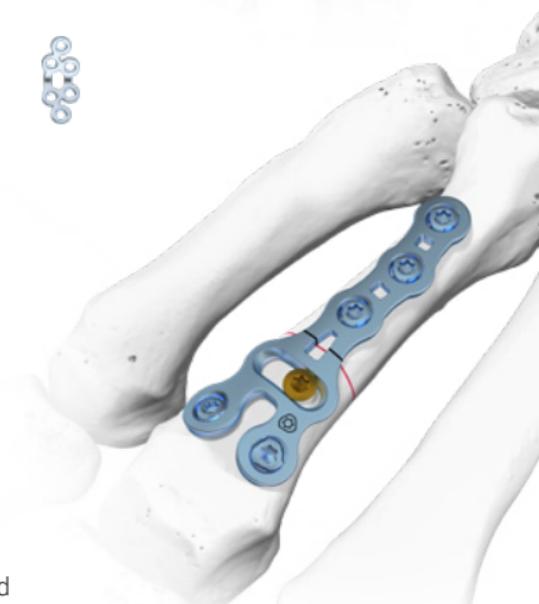
## Rotation correction plates

### Typical clinical findings

- For rotational corrections in phalanges and metacarpals

### Features and benefits

- Transversal oblong hole allows up to  $\pm 25^\circ$  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



## Condylar plates

### Typical clinical findings

- For lateral reduction of simple intraarticular fractures

### Features and benefits

- Lateral reduction of simple intraarticular fractures
- Compression holes



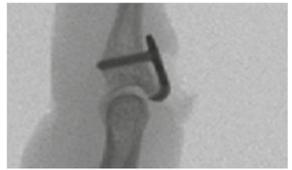
## Clinical Examples



Preoperative X-ray

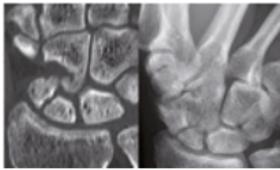


Intraoperative image

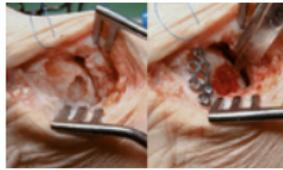


Postoperative X-ray

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Preoperative X-rays

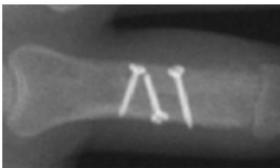


Intraoperative images



Postoperative X-rays

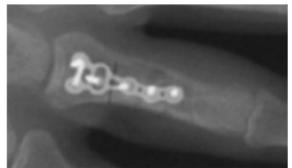
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Preoperative X-ray



Intraoperative image



Postoperative X-ray

Clinical example published with the kind permission of the author

# Screws and Washers

## Screws

- Choice of different screw diameter for each plate type:

	Cortical Screws				TriLock Screws	
Diameter (mm)	1.2	1.5	2.0	2.3	1.5	2.0
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 2.0/2.3 TriLock Arthrodesis Plates		1.2/1.5 TriLock Plates	2.0/2.3 TriLock Plates 2.0/2.3 TriLock Arthrodesis Plates

- Intraoperative adjustability of screw angle and fine-tuning capabilities
- Cortical screw for "screw-only" fracture fixation
- Emergency (cortical) screws available

## Washers

- Biconcave design
- For force distribution over a larger bone surface around the screw head.

# Cannulated Compression Screws: CCS and headed CCS 1.7, 2.2, 3.0

## Typical clinical findings

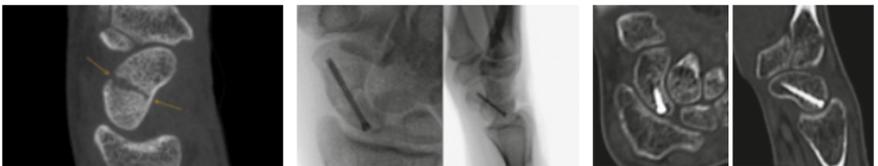
- Head / base / oblique fractures in phalanges
- DIP joint arthritis
- Transverse fracture in metacarpals
- Bennett fracture
- Scaphoid fracture
- Ulnar styloid fracture
- Radial styloid fracture

## Features and benefits

- Three different diameters: 1.7 mm, 2.2 mm and 3.0 mm
- Two different thread lengths
- Headed and headless screws
- Covering numerous areas of use in the hand
- Patented SpeedTip thread design
  - functionally unique cutting with immediate bite<sup>13</sup>
  - immediate cutting of the bone with only slight axial pressure
- The triangular tip design permits simultaneous drilling, tapping and compression of the bone tissue during insertion for increased pull-out stability<sup>14, 15</sup>
- Reduced insertion torque thanks to the polygonal tip and tapered shaft



## Clinical Examples



Preoperative X-ray

Intraoperative images

Postoperative X-rays

Clinical example published with the kind permission of: N. Schelhorn, R. Fricker, Switzerland

# Instruments

- Simple and easy to use
- Intuitive application
- Consistent and distinct color coding:

APTUS 1.2 = red 

APTUS 1.5 = green 

APTUS 2.0 = blue 

APTUS 2.3 = brown 

## Ergonomically designed and compact instrument kit

One plate holding and positioning instrument for each of the systems 1.2/1.5 and 2.0/2.3



One screwdriver/handle with screwdriver blade for each of the systems 1.2/1.5 and 2.0/2.3



Twist drills for core and gliding hole for all screw sizes 1.2, 1.5, 2.0 and 2.3



One drill guide for each of the systems 1.2/1.5 and 2.0/2.3



Specific drill guides for lag screw technique



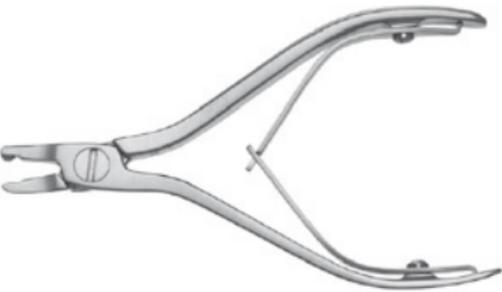
Countersinks for 1.2/1.5 and 2.0/2.3 screws



Depth gauge for one-handed use



One pair of plate bending pliers for all plate sizes



One pair of plate cutting pliers for all plate sizes



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# Medartis Loan Service and Contact Addresses

All APTUS systems are also available as a loan set:

24 hrs service (Monday–Friday): order today for delivery on the next working day\*

## Contact addresses

Contact us for further information regarding the APTUS product line:

<b>Medartis Headquarters Switzerland</b>	Phone: +41 (0)61 633 34 34 Fax: +41 (0)61 633 34 00 order@medartis.com
<b>Australia</b>	Phone: 1300 858 853/+61 (0)7 3326 8700 Fax: +61 (0)7 3862 2665 bookings@medartis.com
<b>Austria</b>	Phone: +43 (0) 5577 62 776 Fax: +43 (0) 5577 62 776 20 orders_at@medartis.com
<b>Brazil</b>	Phone: + 55 11 3624-7844 atendimento.br@medartis.com
<b>France</b>	Phone: +33 (0) 4 74 99 94 14 Fax: +33 (0) 4 74 99 00 19 commandes-fr@medartis.com
<b>Germany</b>	Phone: +49 (0) 7665 98 24 299 (loan service) Phone: +49 (0) 7665 98 24 0 Fax: +49 (0) 7665 98 24 10 orders_de@medartis.com
<b>Japan</b>	Phone: +81 3 4520 5048 Fax: +81 50 3737 5397 orders_jp@medartis.com
<b>Mexico</b>	Phone: (+52) 55 6388 7063 servicioclientes@medartis.com
<b>New Zealand</b>	Phone: 0800 548 001/+64 (9) 909 0416 Fax: +0800 548 002/+64 9 909 0419 bookings@medartis.com
<b>Spain</b>	Phone: +34 931446087 info.es@medartis.com
<b>Poland</b>	Phone: +48 (0) 71 359 56 18 Fax: +48 (0) 71 359 56 15 orders_pl@medartis.com
<b>UK</b>	Phone: +44 (0) 1924 47 66 99 Fax: +44 (0) 1924 47 20 00 orders_uk@medartis.com
<b>USA</b>	Phone: +1 574 376 2404 Fax: +1 574 966 1396 Toll Free: 877 406 BONE (2663) orders_us@medartis.com

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#### **MANUFACTURER & HEADQUARTERS**

Medartis AG | Hochbergerstrasse 60E | 4057 Basel / Switzerland

P +41 61 633 34 34 | F +41 61 633 34 00 | [www.medartis.com](http://www.medartis.com)

#### **USA**

Medartis Inc. | 1195 Polk Drive | Warsaw IN 46582

P +1 574 376 2404 | Toll free 877 406 BONE (2663) | F +1 574 966 1396

#### **SUBSIDIARIES**

Australia | Austria | Brazil | France | Germany | Japan | Mexico |

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