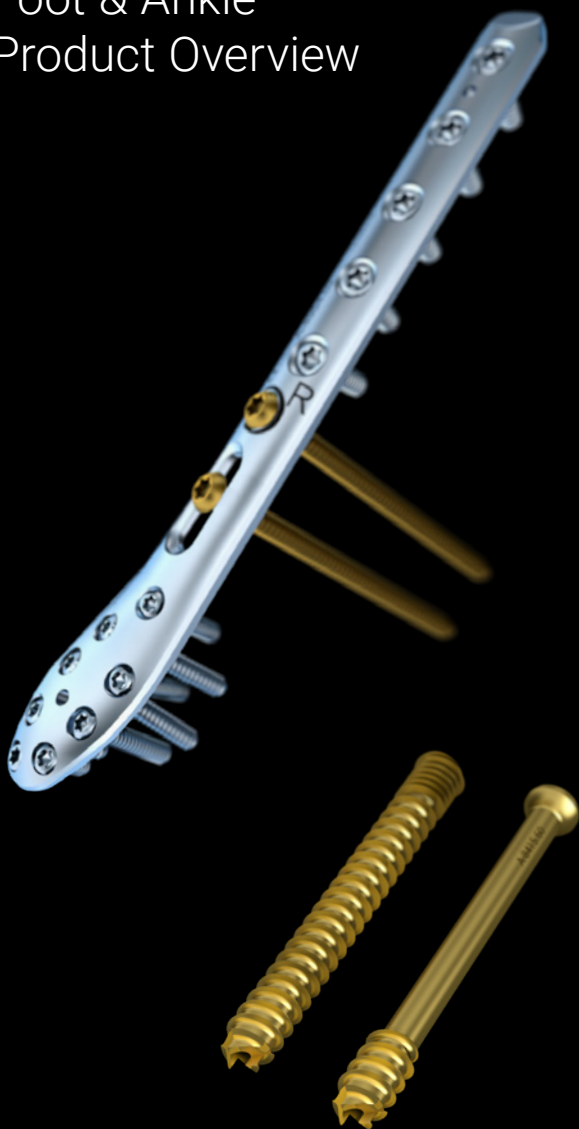


medartis

Foot & Ankle Product Overview



APTUS

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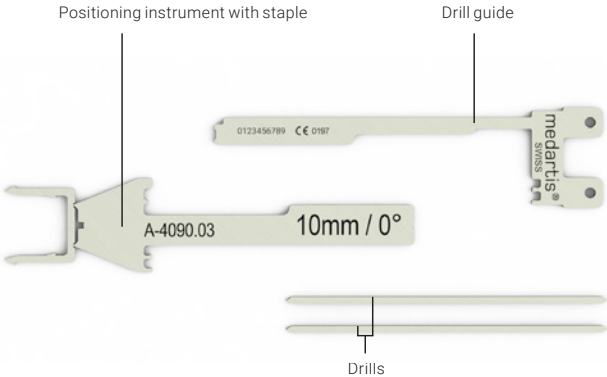
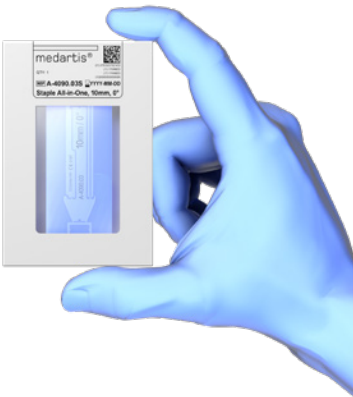
For further information on the APTUS product line, please visit
www.medartis.com.

- 1** Heidemann, W.; Terheyden, H.; Gerlach, K. L.; Analysis of the osseous/metal interface of drill free screws and self-tapping screws; Journal of Cranio-Maxillofacial Surgery (2001) 29, 69–74
- 2** Heidemann, W.; Terheyden, H.; Gerlach, K. L.; In-vivo-Untersuchungen zum Schrauben-Knochen-Kontakt von Drill-Free-Schrauben und herkömmlichen selbstschneidenden Schrauben; Mund Kiefer GesichtsChir 5 2001: 17–21
- 3** Spiegel, A.; Pochlatko, N.; Zeuner, H.; Lang, A.; Biomechanical Tests of Different Cannulated Compression Screws (on file; Medartis AG, Switzerland)
- 4** A. Spiegel, PhD, B. Langer, Medartis AG, Switzerland; S. Fabbri, Prof. M. de Wild, FHNW, Switzerland: Fatigue Testing of the Medartis APTUS Wing Plate (on file; Medartis AG, Switzerland)
- 5** Plaass et al.; Placement of Plantar Plates for Lapidus Arthrodesis: Anatomical Considerations. Foot & Ankle International (2015): 1071100715619607

APTUS Foot Fore- and Midfoot Staple All-in-One

Features and Benefits

- The All-in-One Staple kit includes all implants and specific instruments in one packaging
- Barbed legs can prevent migration of the staple
- Staple and drill guide design allows for compression



Staple All-in-One
8 mm, 0°



Staple All-in-One
8 mm, 26°



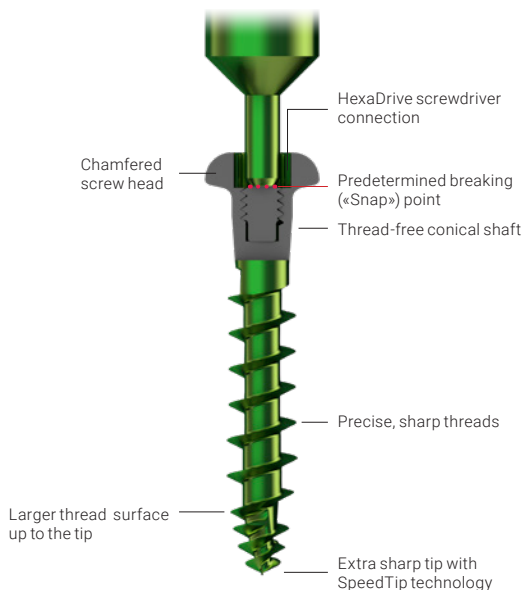
Staple All-in-One
10 mm, 0°



Staple All-in-One
10 mm, 26°

APTUS Foot Fore- and Midfoot 2.0 SpeedTip C-Snap, 2.0, 2.8 SpeedTip C

Features and Benefits



- C-Snap screws can be fully inserted or removed with a conventional screwdriver due to the HexaDrive screwdriver connection after snap off
- Extra sharp tip penetrates the bone exactly where the surgeon puts it
- Effortless insertion: Only the polygonal tip pushes bone material aside
- The triangular tip design permits simultaneous drilling, tapping and compression of the bone tissue during insertion for increased pull-out stability^{1,2}

Clinical Example



Preoperative X-ray



Postoperative X-ray



Clinical example published with the kind permission of: E. Orthner, Wels, Austria

APTUS

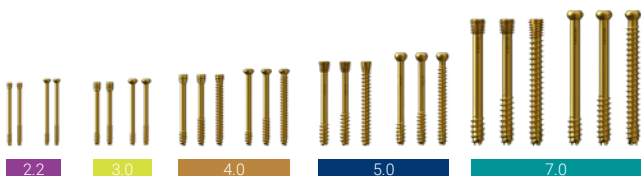
Cannulated Compression Screws

CCS 2.2, 3.0 and headed CCS 2.2, 3.0

Features and Benefits

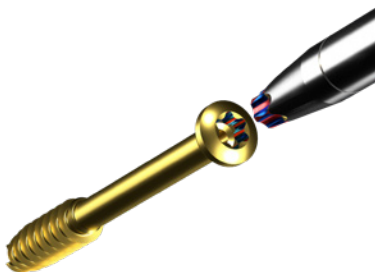
Comprehensive portfolio

- CCS and headed CCS
- 5 different diameters
- Short thread, long thread, fully threaded



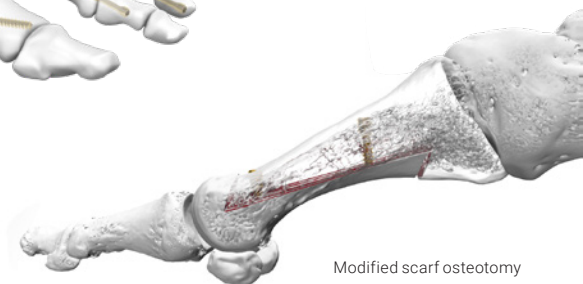
Consistent self-holding across all screw sizes

- HexaDrive for simplified screw pick-up and increased torque transmission



Sharp: SpeedTip thread design of CCS 2.2, 3.0 and headed CCS 2.2, 3.0

- Functionally unique cutting with immediate bite³
- Reduced insertion torque due to the polygonal tip



Modified scarf osteotomy

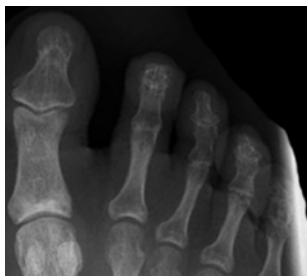
APTUS

Cannulated Compression Screws

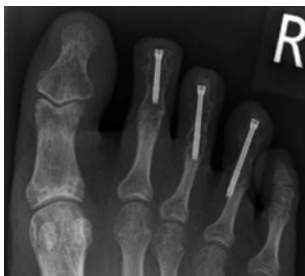
CCS 2.2, 3.0 and headed CCS 2.2, 3.0

Clinical Examples

DIP and PIP Arthrodesis – CCS 3.0



Preoperative X-ray



Postoperative X-ray

Clinical example published with the kind permission of: C. Plaass, Hannover, Germany

Akin and Chevron Osteotomy – CCS 2.2, CCS 3.0



Preoperative X-ray



Postoperative X-ray (6 weeks)

Clinical example published with the kind permission of: U. Hefti, Bern, Switzerland

Akin and Modified Scarf Osteotomy – CCS 2.2, 2.3 Cortical Screw



Preoperative X-ray

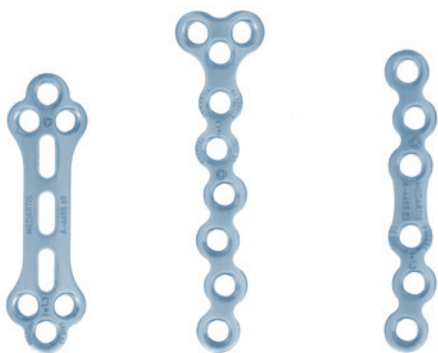


Postoperative X-ray

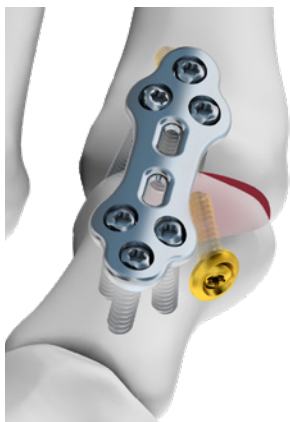
Clinical example published with the kind permission of: M. Wiewiorski, Winterthur, Switzerland

APTUS Foot Fore- and Midfoot 2.0 / 2.3, 2.8 Grid Plate, T Plate, Straight Plates

Features and Benefits

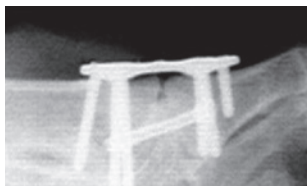


- Increased subchondral stability achieved by a double row of screws in the plate end area
- Offset screw holes in numerous plates avoid collisions between screws and prevent fracture propagation during drilling and screw insertion
- Plates may be cut and bent for a wide range of applications
- Low plate profile with minimal screw head protrusion, rounded edges and a smooth surface for soft tissue protection



Clinical Example

MTP-1 Fusion with Grid Plate



Intraoperative X-ray



Intraoperative image

Clinical example published with the kind permission of: C. Brumm, Schaffhausen, Switzerland

APTUS Foot Fore- and Midfoot 2.8 Wing Plates

Features and Benefits



- Well suited for high loads due to superior fatigue resistance⁴
- K-wire holes for 1.6 mm K-wires to assist with temporary plate fixation and verification of implant position
- Plates may be cut and bent for a wide range of applications
- Low plate profile with minimal screw head protrusion, rounded edges and a smooth surface for soft tissue protection



Clinical Example Talonavicular Arthrodesis



Preoperative X-ray



Postoperative X-ray



Postoperative X-ray

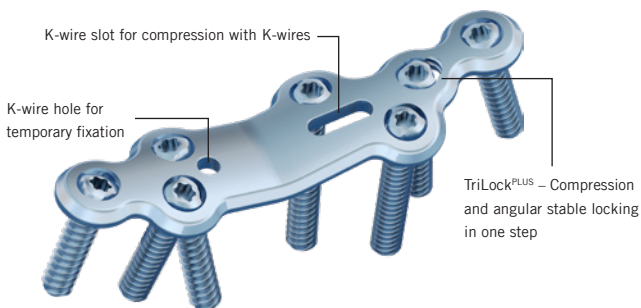
Clinical example published with the kind permission of: A. Schirm, St. Gallen, Switzerland

APTUS Foot

Hallux

2.8 TriLock MTP Fusion Plates

Features and Benefits



- Crossing lag screw can be placed if needed
- Additional proximal plate hole for increased primary stability in poor bone quality
- Three defined dorsiflexion angles (0°, 5°, 10°)
- Low anatomical plate profile with minimal screw head protrusion, rounded edges and a smooth surface for soft tissue protection



Clinical Example



Postoperative X-ray (6 weeks)



Postoperative X-ray (6 weeks)

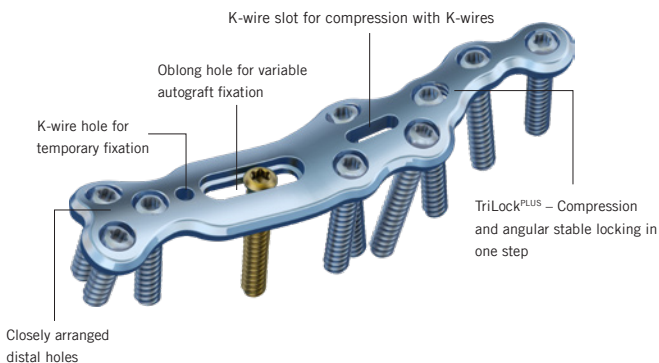
Clinical example published with the kind permission of: L. Drittenbass, Geneva, Switzerland

APTUS Foot

Hallux

2.8 TriLock MTP Revision Plates

Features and Benefits



- Oblong hole allows for graft fixation
- Closely arranged distal holes enable fixation even of small fragments
- Additional proximal TriLock holes add stability and allow for bridging of large bone defects
- Two defined dorsiflexion angles (5°, 10°)
- All plates with 10° valgus angles
- Low plate profile with minimal screw head protrusion, rounded edges and a smooth surface for soft tissue protection



Clinical Example



Preoperative X-ray



Postoperative X-rays (6 weeks)

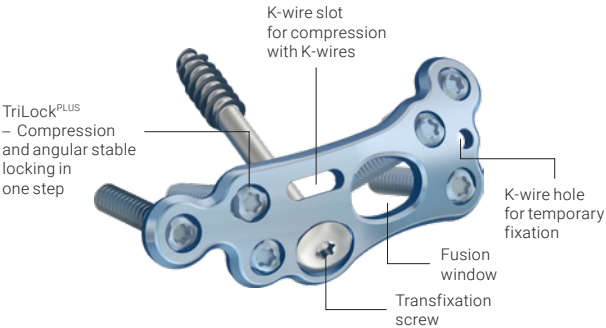
Clinical example published with the kind permission of: T. Schneider, Melbourne, Australia

APTUS Foot

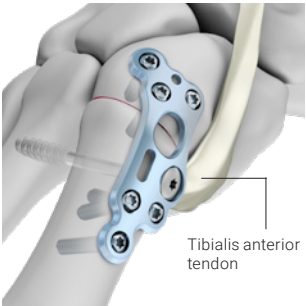
Hallux

2.8 TriLock TMT-1 Medial Fusion Plates

Features and Benefits



- Plate can also be used in a “classic Lapidus” as a 4.0 mm transfixation screw can be inserted through the plate into the 2nd metatarsal
- Plate design reduces contact with the tibialis anterior tendon



Clinical Example



Preoperative X-ray



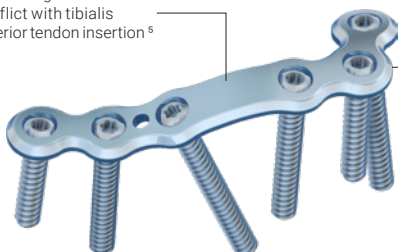
Postoperative X-ray (6 weeks)

Clinical example published with the kind permission of: V. Valderrabano, Basel, Switzerland

APTUS Foot Hallux 2.8 TriLock TMT-1 Plantar Fusion Plates

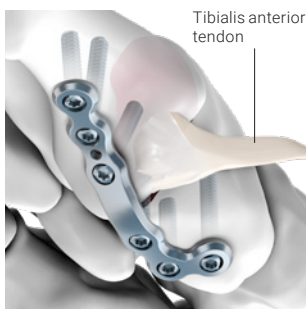
Features and Benefits

Plate design minimizes conflict with tibialis anterior tendon insertion ⁵



Optimized plate design allows for soft tissue friendly access

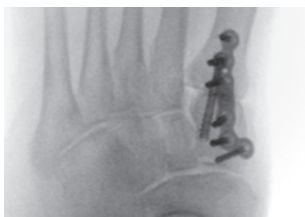
- Plantar placement of plate takes advantage of the tension band effect increasing compression in the arthrodesis
- Anatomical plate shape ⁵
- Low plate profile with minimal screw head protrusion, rounded edges and a smooth surface for soft tissue protection



Clinical Example



Intraoperative image



Postoperative X-ray (6 weeks)

Clinical example published with the kind permission of: C. Plaass, Hannover, Germany

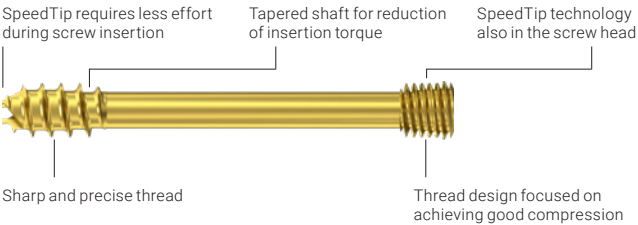
APTUS

Cannulated Compression Screws

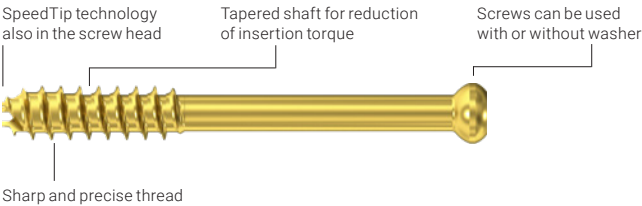
CCS and headedCCS 4.0, 5.0, 7.0

Features and Benefits

CCS

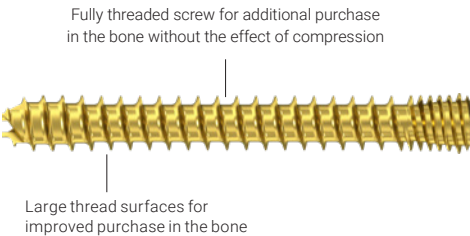


headedCCS



Thread Types

- Short and long threaded screws offer compression due to the Herbert principle
- Fully threaded screws



APTUS

Cannulated Compression Screws

CCS and headed CCS 4.0, 5.0, 7.0

Clinical Examples

Lisfranc Injury and Metatarsal IV Fracture – CCS 5.0



Preoperative X-rays



Postoperative X-rays

Lateral Column Lengthening – CCS 4.0, 7.0



Preoperative X-rays



Postoperative X-rays (3 months)

Clinical example published with the kind permission of: C. Plaass, Hannover, Germany

Triple Arthrodesis – CCS 5,0, 7.0



Preoperative X-rays (AP, Salzmann and lateral)



Postoperative X-rays (4 months)

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APTUS Foot

Calcaneus

3.5 TriLock Calcaneus Plates

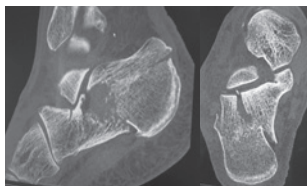
Features and Benefits



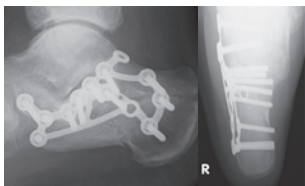
- Frame design distributes stresses uniformly across the plate
- Plate coverage of the calcaneus makes it possible to anchor the screws in dense bone structures
- The reduced subtalar joint can be kept in the alignment with up to five screws aiming towards the sustentaculum tali
- The alignment of the plate holes, which are based on the force direction, gives the plate a high degree of strength despite its low profile

Clinical Example

Fracture: Sanders Type II A



Preoperative X-rays

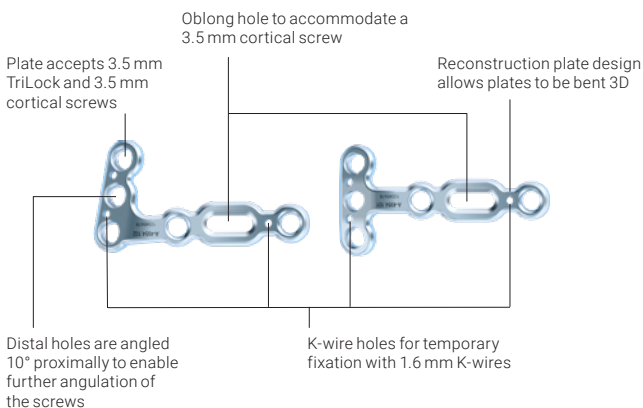


Postoperative X-rays

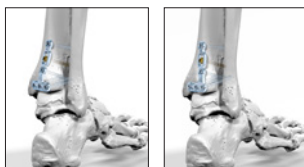
Clinical example published with the kind permission of: B. Hüttenmoser, Schaffhausen, Switzerland

APTUS Ankle 3.5 Distal Tibia T and L Plates

Features and Benefits



- Plates can be applied anteriorly or posteriorly with minimal bending
- Distal holes are angled at 10° to help avoid intraarticular penetration
- The oblong hole allows for plate positioning and pulling of the plate to the bone



Posterior fixation with T and L plates



Anterior fixation with T and L plates

Clinical Example



Preoperative X-rays



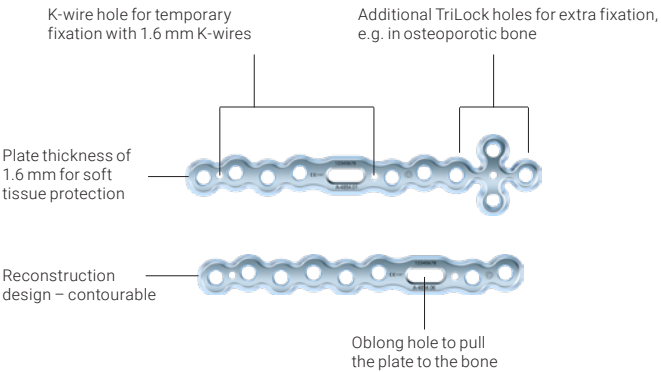
Postoperative X-rays (6 months)

Clinical example published with the kind permission of: T. Schepers, Amsterdam, Netherlands

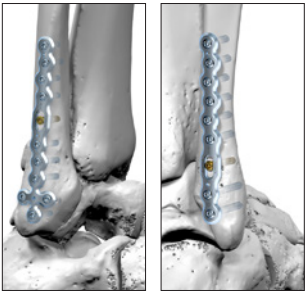
APTUS Ankle

2.8 Distal Fibula Plates (Standard and Straight)

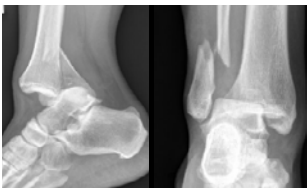
Features and Benefits



- 1.6 mm low profile plates
- Staggered screw hole geometry reduces the chance of screw collision
- Three screw holes in the distal plate end for extra fixation in osteoporotic bone



Clinical Example



Preoperative X-rays



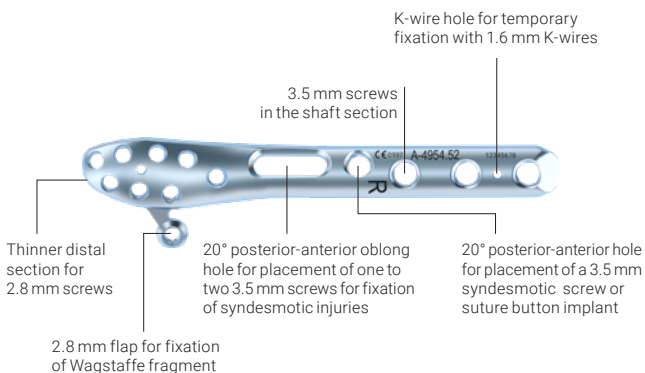
Postoperative X-rays (9 months)

Clinical example published with the kind permission of: J. Chow, Sydney, Australia

APTUS Ankle

2.8/3.5 Distal Fibula Plates, Lateral with and without Flap

Features and Benefits



- 2.8 mm screws in the head of the plate capture small comminuted fractures while 3.5 mm screws provide strength in the shaft
- Oblong and single syndesmotic screw hole
- Wagstaffe fragment fixation with flap



Clinical Example



Preoperative X-rays



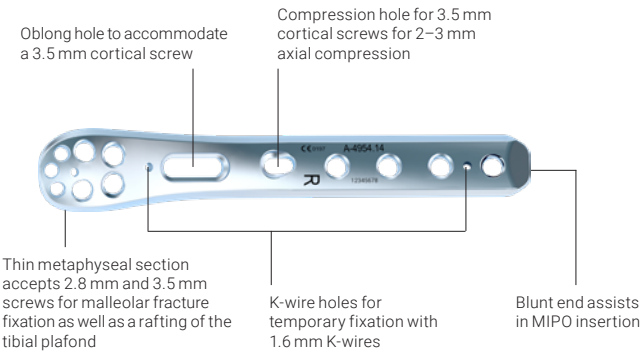
Postoperative X-rays (6 months)

Clinical example published with the kind permission of: J. Sebag, Port Saint Lucie, FL, USA

APTUS Ankle

2.8/3.5 Distal Tibia Plates, Medial

Features and Benefits



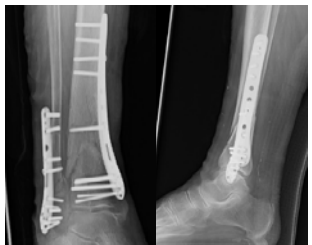
- Screw combination in the head allows for the capture of small comminuted as well as large fragments
- Compression hole for compression of 2–3 mm in a distal tibia osteotomy
- Three 2.8 mm screws in the head capture the malleolar fragments in Weber fractures



Clinical Example



Preoperative X-rays



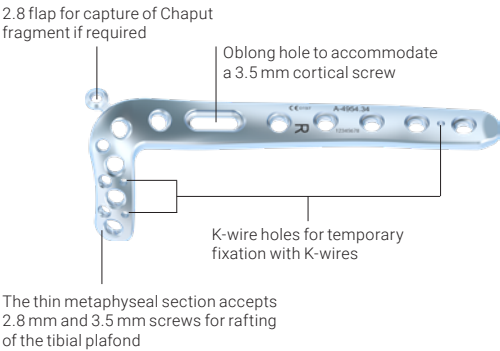
Postoperative X-rays

Clinical example published with the kind permission of: M. Schädel-Höpfner, Neuss, Germany

APTUS Ankle

2.8/3.5 Distal Tibia Plates, Anterolateral

Features and Benefits



- Lateral flap for more lateral coverage and the ability to capture Chaput fragment
- Double row of screws in the head allows for reconstruction and realignment of the plafond (rafting effect)



Clinical Example



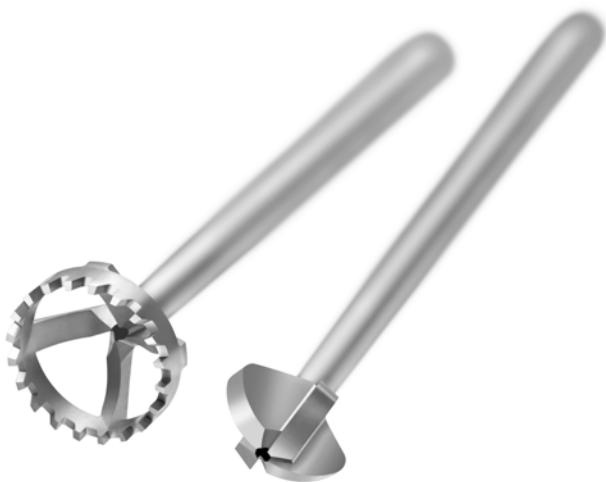
Preoperative X-rays



Postoperative X-rays

Clinical example published with the kind permission of: K. Genelin, Department of Orthopaedics and Traumatology, Medical University, Innsbruck, Austria

Cannulated MTP Reamers



- Five pairs of reamers to fit any MTP -1 joint
- Sharp cutting edges for precise bone shape
- Ring on cone reamers ensures even removal of metatarsal osteophytes
- Perfect add-on to the APTUS Foot portfolio

Clinical Example



Reaming of
cone reamer



Reaming of
cup reamer



Postoperative
X-ray

Clinical example published with the kind permission of: P. Rice, Melbourne, Australia

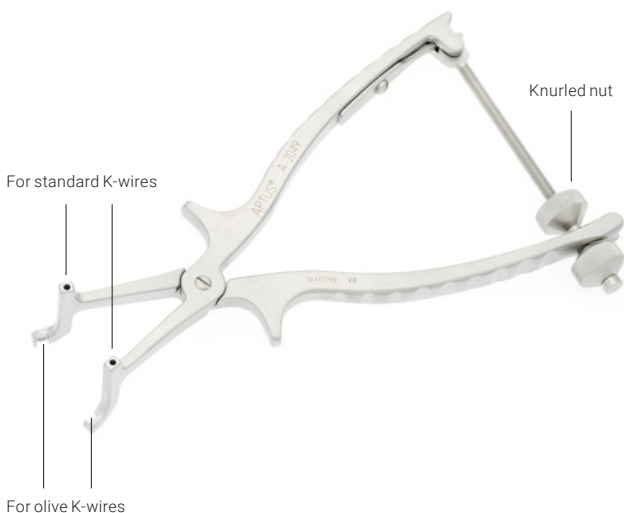
Self-Holding Drill Sleeve

- Enables single-handed drilling
- Can be locked in the TriLock contour of the plate at the selected angle
- Multidirectional $\pm 15^\circ$



Compression and Distraction Forceps

- For compression, e. g. during MTP-1 fusion, with 1.6 mm olive K-wires or 1.6 mm standard K-wires
- For distraction, e. g. during TMT-1 cartilage removal, with 1.6 mm standard K-wires
- Fine adjustment and fixation via knurled nut and a threaded spindle



Large Reduction Forceps



- Sized for distal tibia reduction and syndesmotic repair
- Pointed ball tips for grip in bone
- Ratchet handles for small incremental adjustments



MIPO Instrument for Tunnel Preparation



- Used to prepare the path for a plate next to the periosteal tissue
- AO coupling fits either the large screwdriver handle or the T-handle

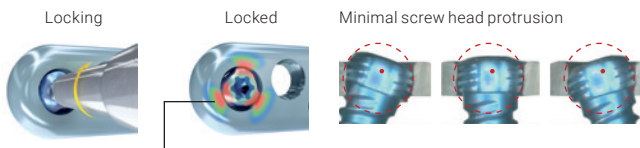
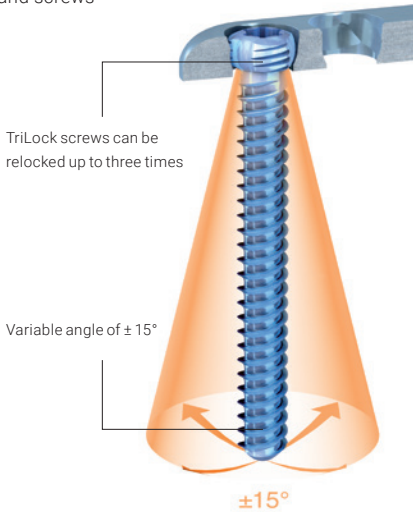


APTUS Technologies

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

TriLock Locking Technology

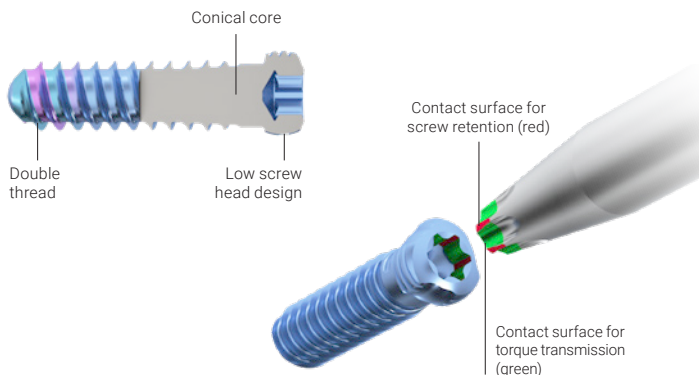
- Patented TriLock locking technology – multidirectional locking of the screw in the plate
 - Spherical three-point wedge-locking
 - Friction locking through radial bracing of the screw head in the plate without additional tensioning components
- TriLock^{PLUS} plate holes combine compression and angular stability in one step
- 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



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

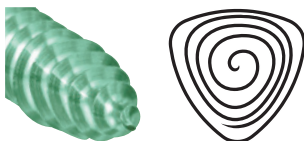
Screw Technology

- 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
- Double-threaded TriLock screws reduce screw insertion time



SpeedTip Thread Design

- Functionally unique cutting with immediate bite³
- 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^{1,2}
- Reduced insertion torque thanks to the polygonal tip and tapered shaft





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All technical data subject to alteration.

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