medartis®

PRECISION IN FIXATION

PRODUCT INFORMATION

Hallux System 2.8

APTUS® Foot

Hallux System 2.8

Contents

For further information regarding the APTUS product line visit:
www.medartis.com/products

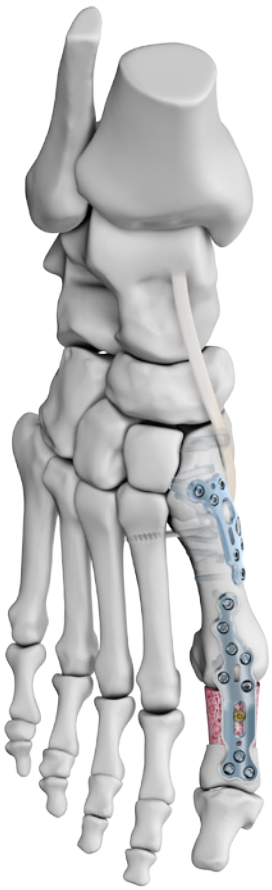
The New Hallux System 2.8

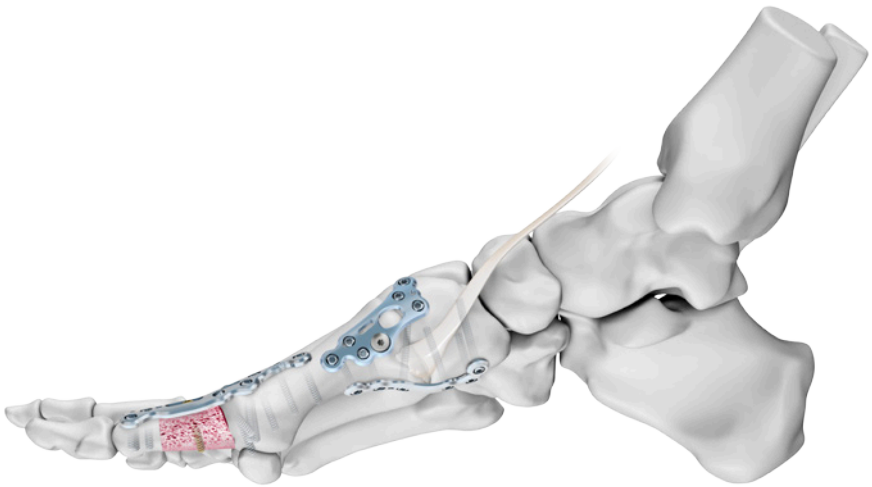
Precision and Innovation

Hallux Valgus procedures constitute the largest proportion of interventions within elective foot surgery. Patients' expectations for successful outcomes in Hallux treatments are very high. Implants are expected to fulfill the requirements of modern procedures and support a smooth and effective implantation.

The APTUS Hallux system was developed in association with a team of internationally renowned foot surgeons. The plate designs were confirmed using statistical analysis of CT datasets and were thoroughly verified on anatomical specimens. The new implants rely on already proven as well as newly developed technologies: TriLock permits multidirectional screw positioning and angular stability. The new TriLock^{PLUS} enables the surgeon to combine compression and locking in one step. Further advantages are low plate profiles as well as slots for the compression with olive K-wires.

The HexaDrive screw head design with its patented self-retaining mechanism allows for secure connection between screw and screwdriver. Together with an intuitive and well thought-through set of instruments, this system is user-friendly, providing a positive end-user experience.





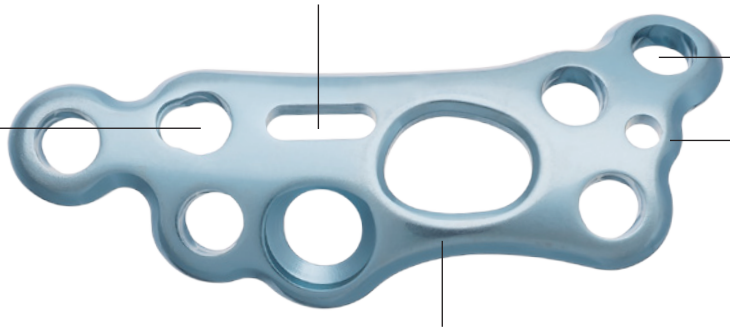
→ www.medartis.com/products/aptus/foot

General Plate Features

TriLock^{PLUS} – Compression **and** angular stable locking

K-wire slot for compression with K-wires

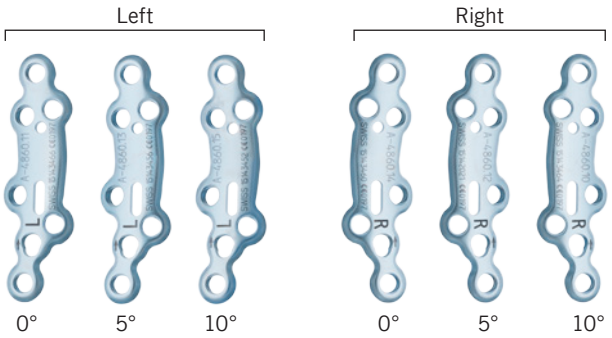
TriLock – multidirectional angular stable locking



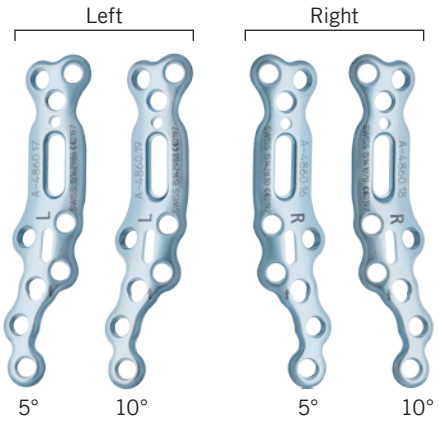
Rounded plate edges offer protection of the soft tissues

Plate shape derived from the results of extensive anatomical analyses

MTP Fusion Plates



MTP Revision Plates



TMT-1 Medial

TMT-1 Plantar

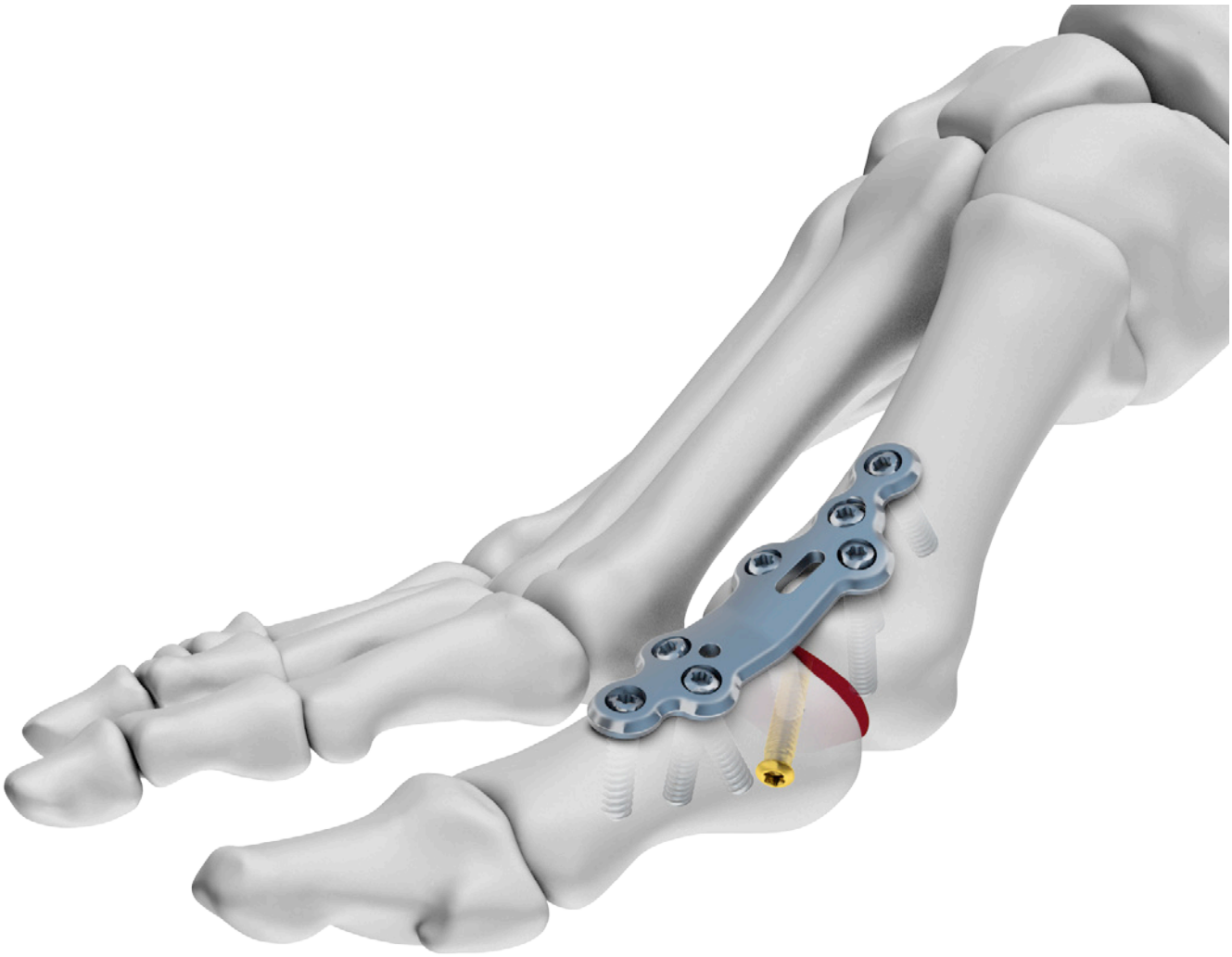
Grid Plates

→ www.medartis.com/products/aptus/foot

MTP Fusion Plates

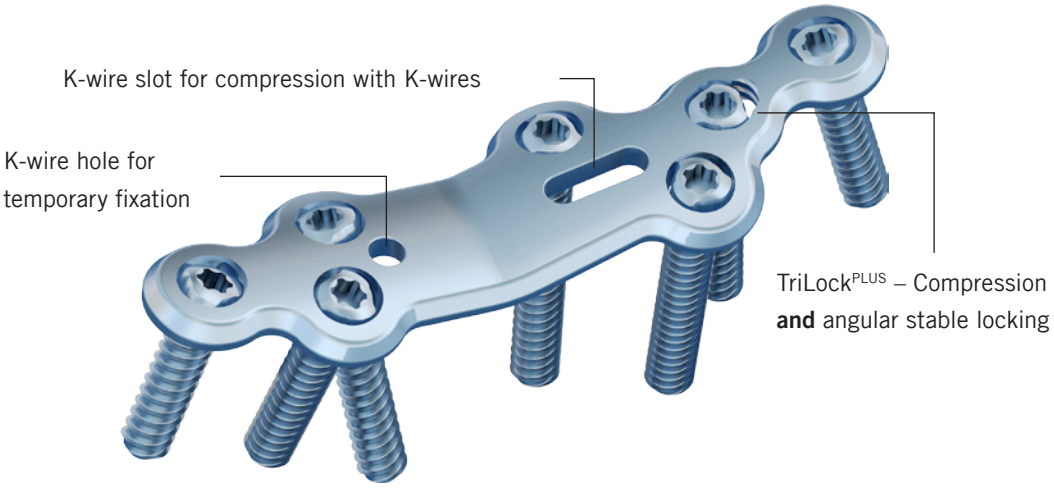
Clinical Benefits

- Reduced likelihood of collisions of transverse screws
- Improved anatomical fit
- Additional proximal plate hole for increased primary stability in poor bone quality

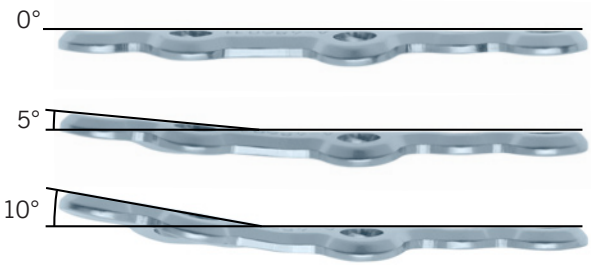


→ www.medartis.com/products/aptus/foot

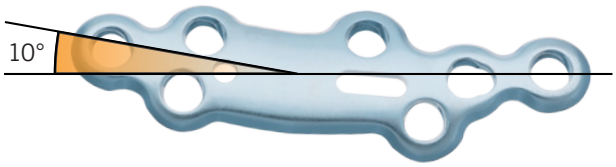
Plate Features



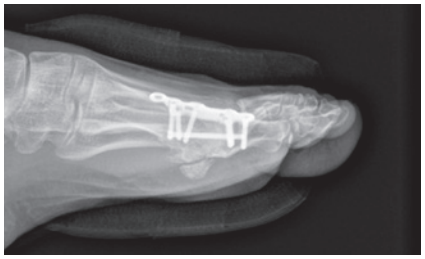
Three Defined Dorsiflexion Angles



10° Valgus Angle



Intraoperative image



Postoperative X-ray (6 weeks)

Postoperative X-ray (6 weeks)

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

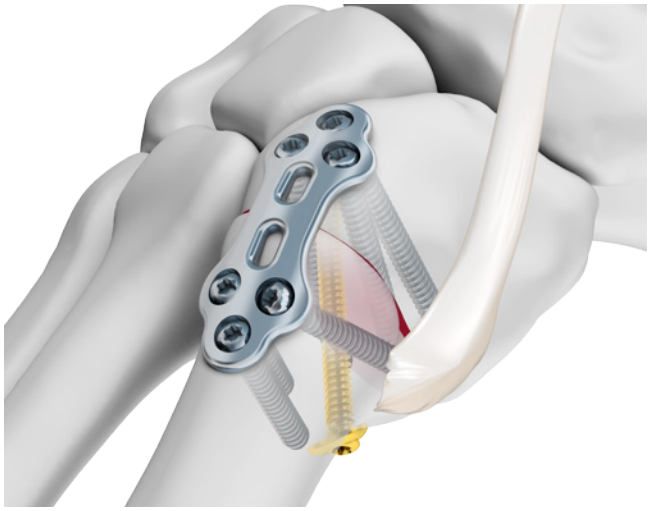
Grid Plates

Versatile indications and proven application

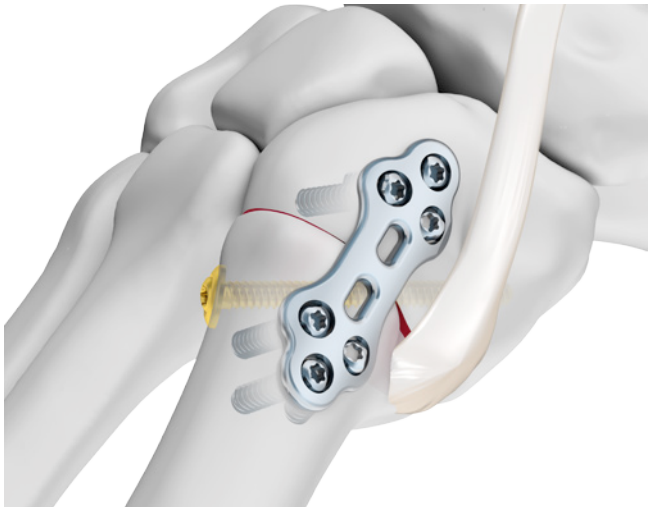
Clinical Benefits

- Generic shape allows for many applications and plate positions*
- Low plate profile
- Able to be contoured to the individual anatomy*

TMT-1 Fusion

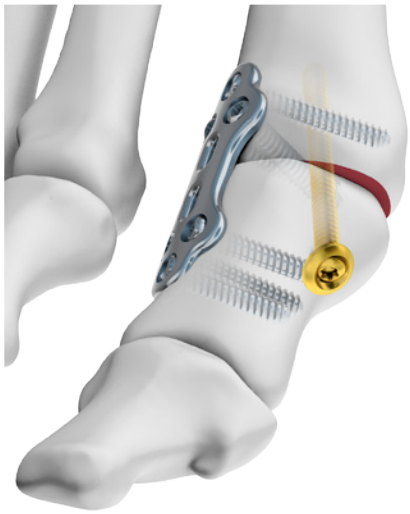


Dorsal

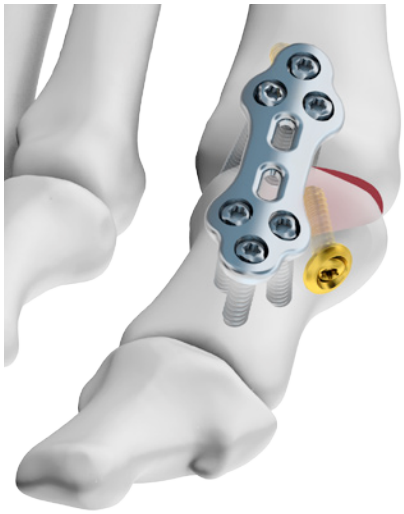


Medial

MTP-1 Fusion



Lateral



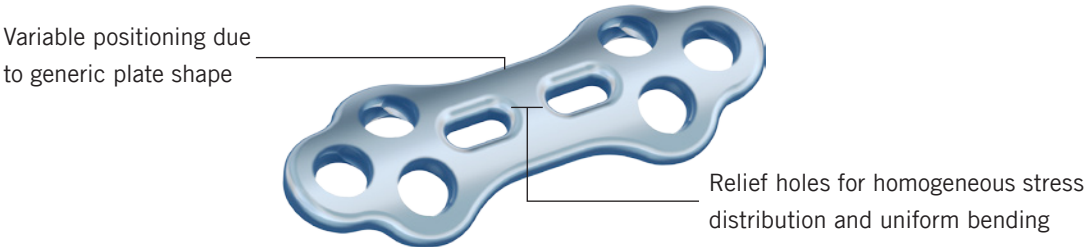
Dorsal

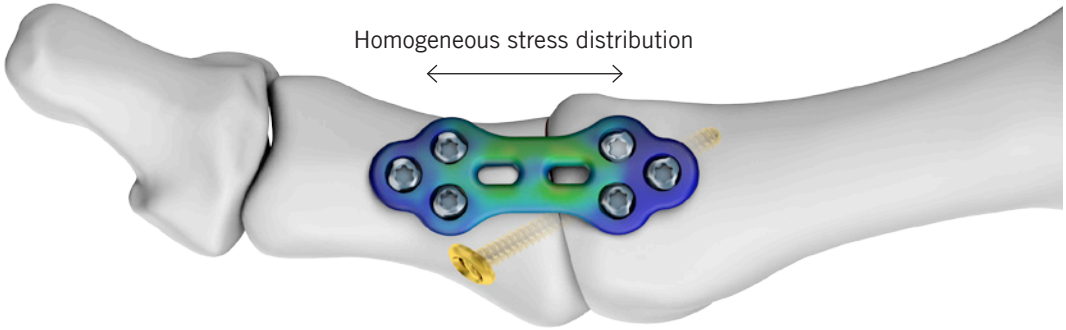
Medial

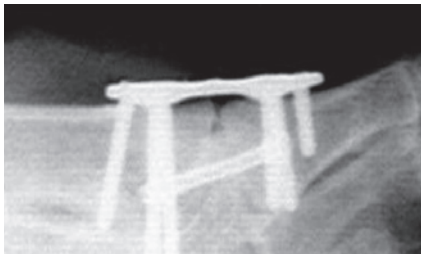
* Based on the indications in the surgical technique

→ www.medartis.com/products/aptus/foot

Plate Features







Case 1
MTP-1 Fusion – Intraoperative X-ray

MTP-1 Fusion – Intraoperative image

Case 2
TMT-1 Fusion – Intraoperative X-ray

Clinical cases published with the kind permission of:
Case 1: C. Brumm, Schaffhausen, Switzerland Case 2: C. Plaass, Hannover, Germany

→ www.medartis.com/products/aptus/foot

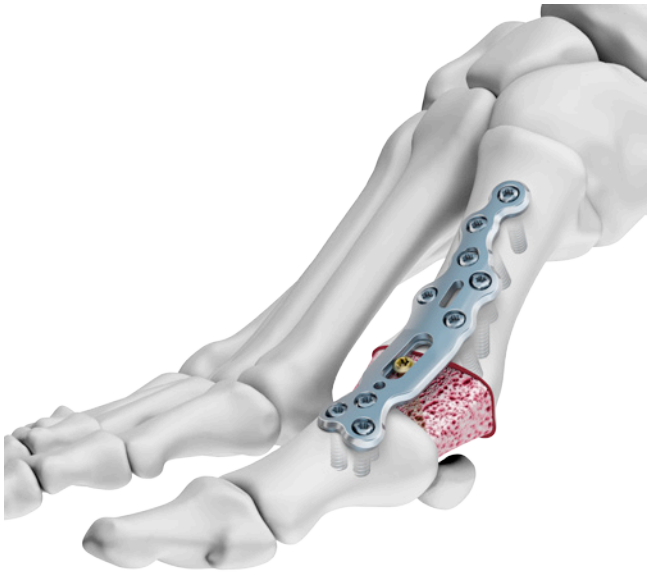
MTP Revision Plates

Stability and flexibility for complex revisions

Clinical Benefits

- Oblong hole allows for variable autograft fixation
- Closely arranged distal holes enable treatment even of small fragments
- Stable bridging of bone defects

Conversion of prosthesis to arthrodesis
The proximal TriLock hole adds stability and allows for bridging of large bone defects

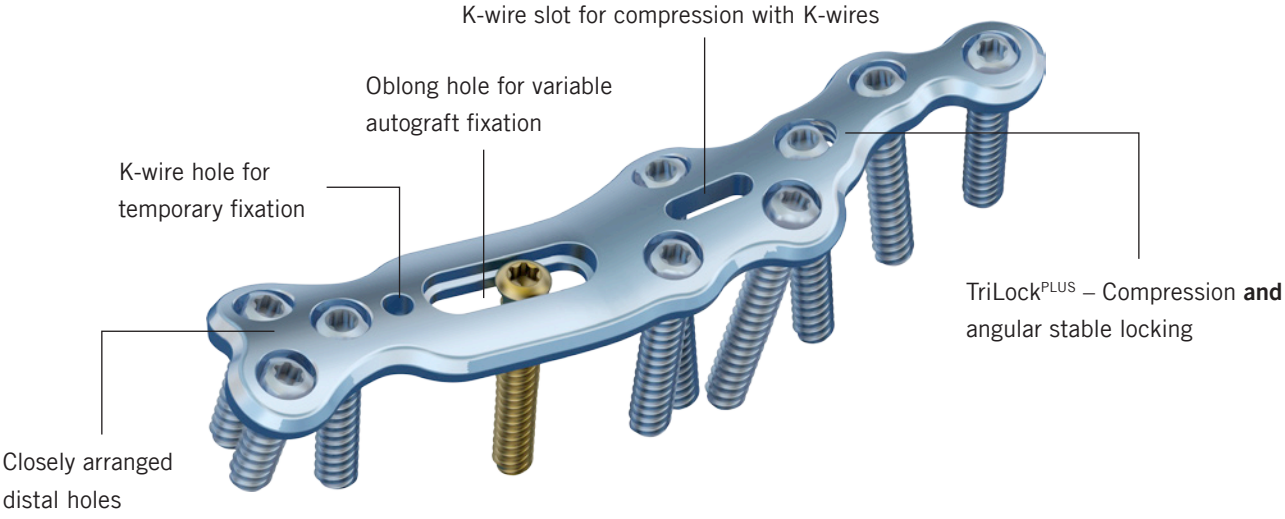


Revisions following metatarsal 1 head necrosis
The oblong hole allows fixation of the autograft at the required position

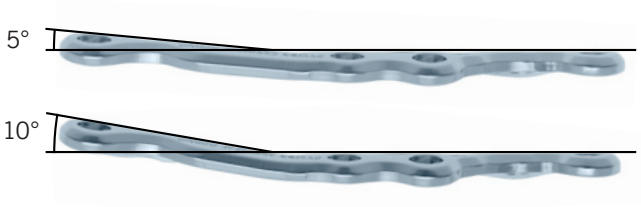
Revisions following Keller-Brandes procedures
Closely arranged distal holes enable stability even of small bone fragment

→ www.medartis.com/products/aptus/foot

Plate Features

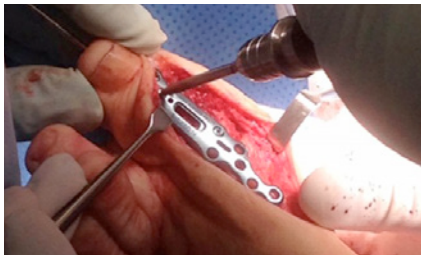


Two Defined Dorsiflexion Angles



10° Valgus Angle

Preoperative X-ray



Intraoperative image

Postoperative X-ray (6 weeks)

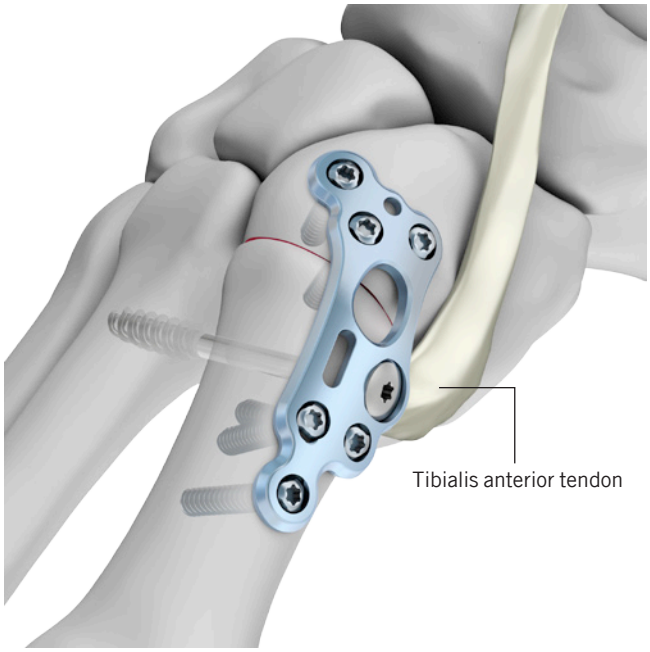
Clinical case published with the kind permission of: T. Schneider, Melbourne, Australia

→ www.medartis.com/products/aptus/foot

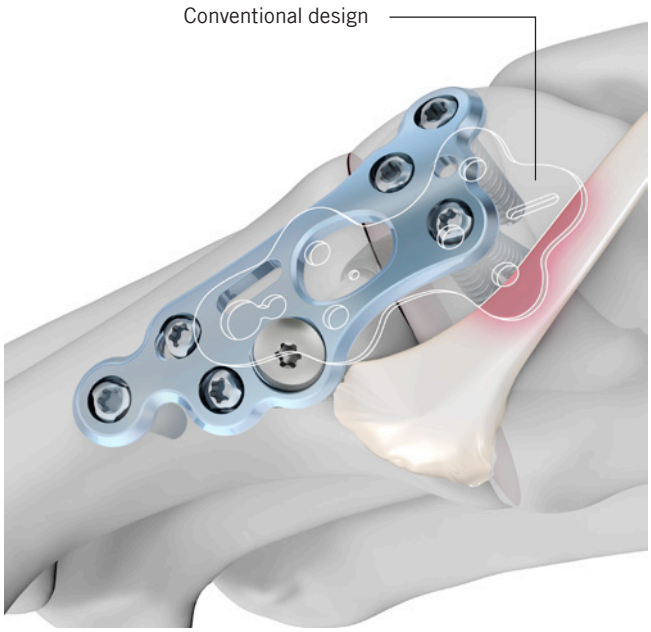
TMT-1 Medial Fusion Plates

Less tendon contact in classic or modified Lapidus arthrodesis

Clinical Benefits

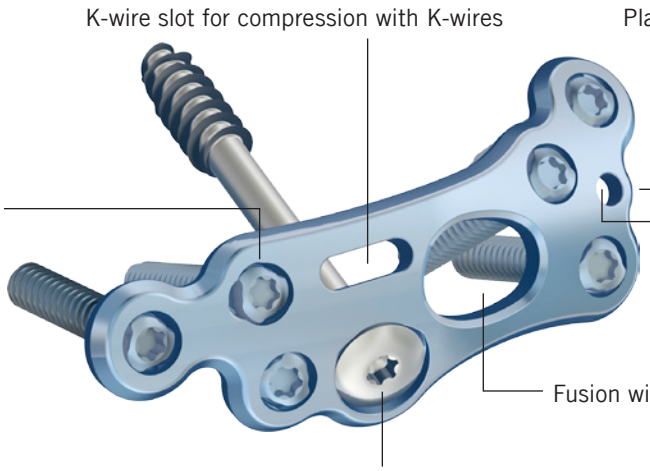


An optional transfixation screw additionally stabilizes the arthrodesis in the plane of the intermetatarsal angle. This corresponds to the classic treatment concept of the Lapidus arthrodesis.



The correct position of the dorsomedial plate is outside the tibialis anterior tendon. Unlike conventional designs, this may prevent possible irritations.

Plate Features



Preoperative X-ray

Intraoperative image

Postoperative X-ray (6 weeks)

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

→ www.medartis.com/products/aptus/foot

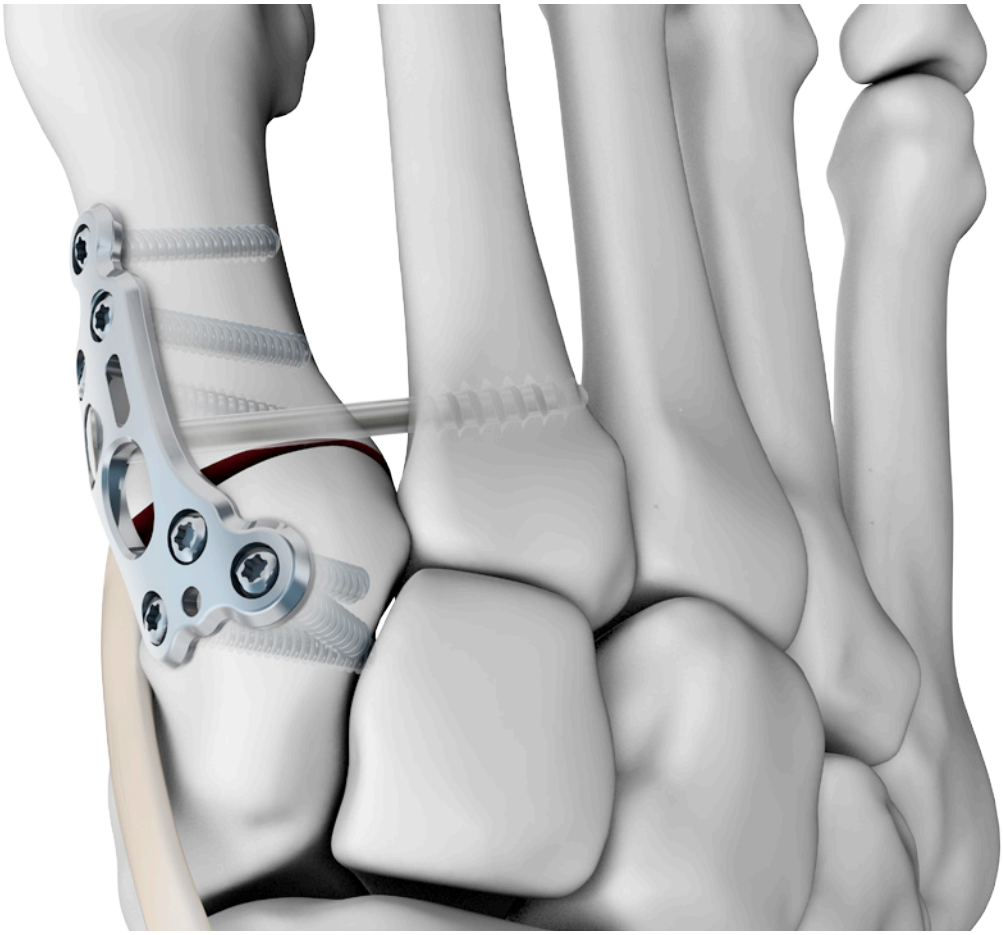
The Classic Lapidus Arthrodesis

Revival of a classic

Further to a fusion of the TMT-1 joint, the classic Lapidus arthrodesis consists of a stabilizing fusion based on the metatarsal 1 and the metatarsal 2. By means of a specific hole in the APTUS TMT-1 medial fusion plate, a 4.0 transfixation screw is placed into the base of the metatarsal 2. This gives the surgeon the option and the benefit of a plate fixation and the stability of a classic Lapidus (screw) arthrodesis.

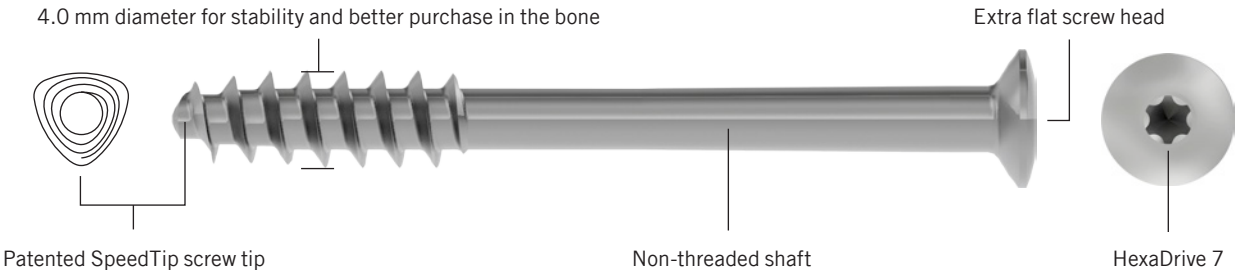
Clinical Benefits of the 4.0 Transfixation Screw

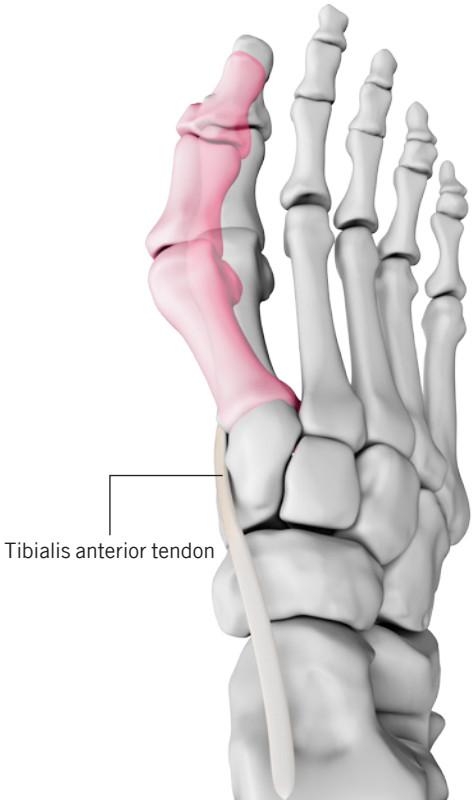
- Supports the position of the intermetatarsal angle IMA (intraoperative)
- Additional stability to maintain the restored IMA (postoperative)
- Also applicable as a single lag screw
- Compatible with 2.8 instruments, as the SpeedTip tip design widens the drilled hole [1, 2]



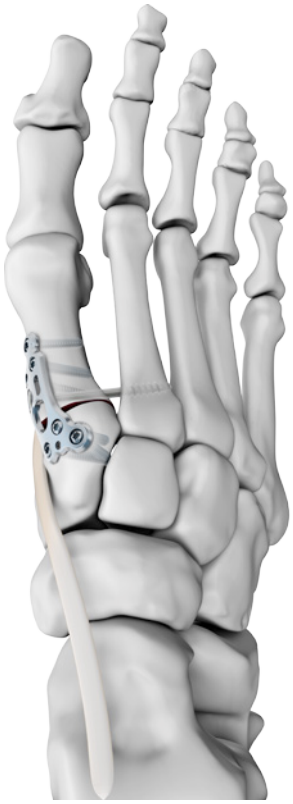
→ www.medartis.com/products/aptus/foot

Screw Features





Hallux Valgus is defined by an opening of the intermetatarsal angle towards medial



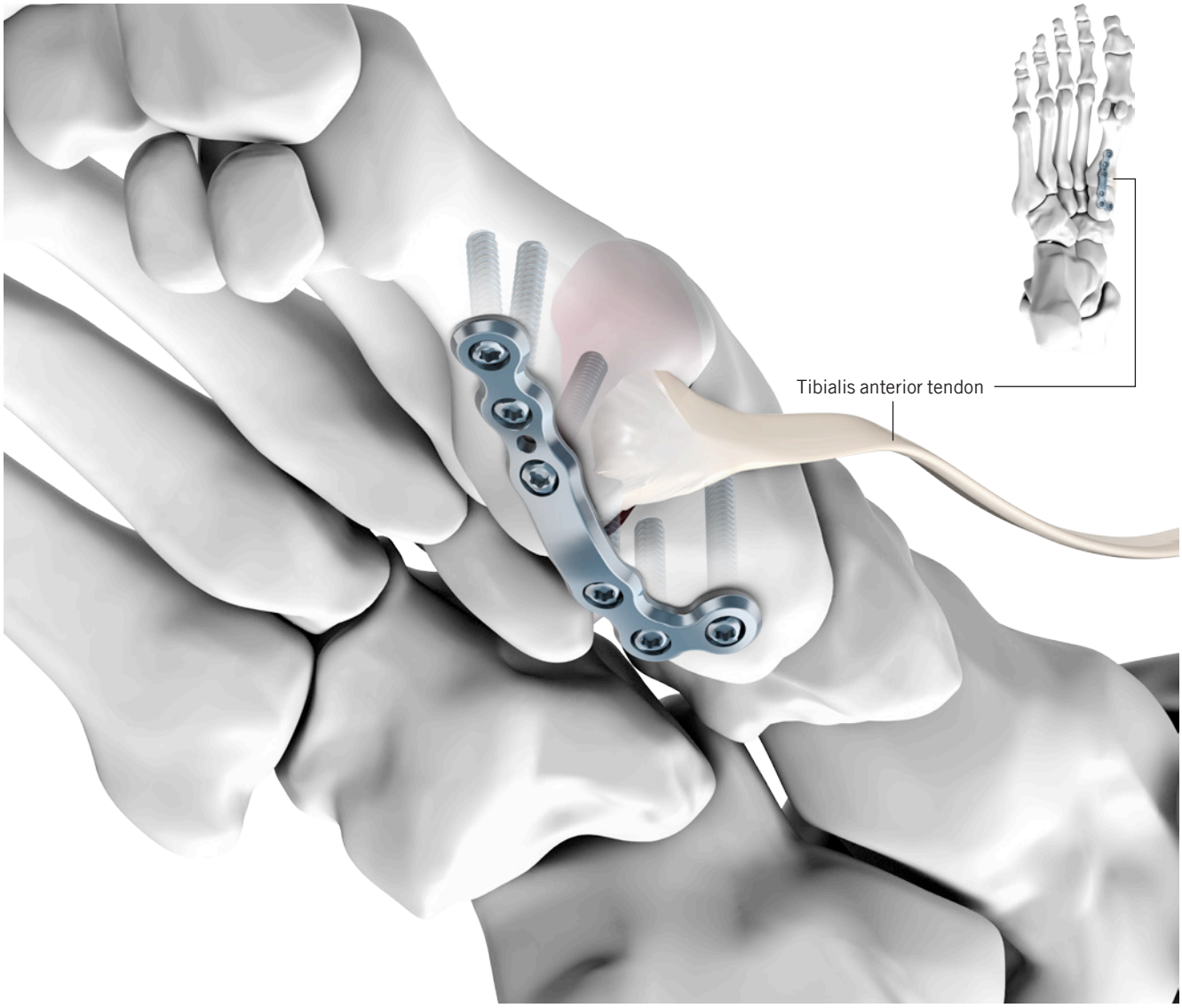
The TMT-1 medial plate with a 4.0 transfixation screw combines the advantages of a stable plate fixation with the stability of a classic Lapidus arthrodesis

→ www.medartis.com/products/aptus/foot

TMT-1 Plantar Fusion Plates

Clinical Benefits

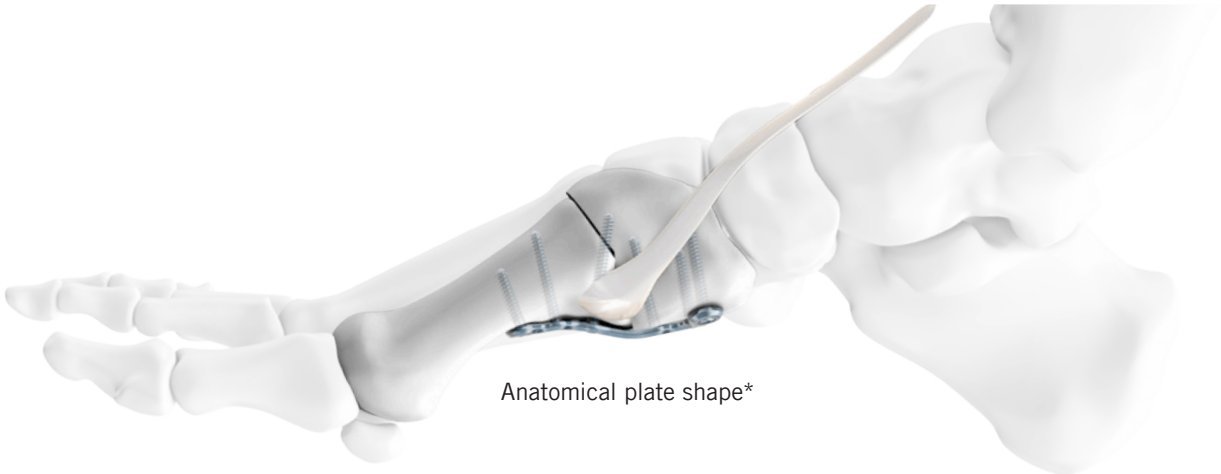
- Screw alignment along with the TriLock multidirectionality allow soft tissue friendly access
- Plate positioning minimizes overlapping with the insertion of the tibialis anterior tendon*
- Anatomical plate shape makes bending almost unnecessary*



*Plaass et al.: «Placement of Plantar Plates for Lapidus Arthrodesis Anatomical Considerations»
Seven plantar plate designs were analyzed on 29 anatomic specimens with regard to plate position towards the tibialis anterior tendon, general plate design as well as the necessity of further bending. The APTUS plantar fusion plate achieved the best result.

→ www.medartis.com/products/aptus/foot

Plate Features



Intraoperative image

6 weeks postoperatively

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

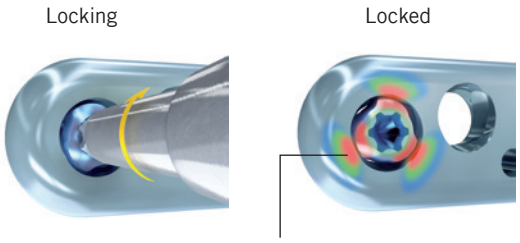
→ www.medartis.com/products/aptus/foot

Technology, Biomechanics, Screw Features

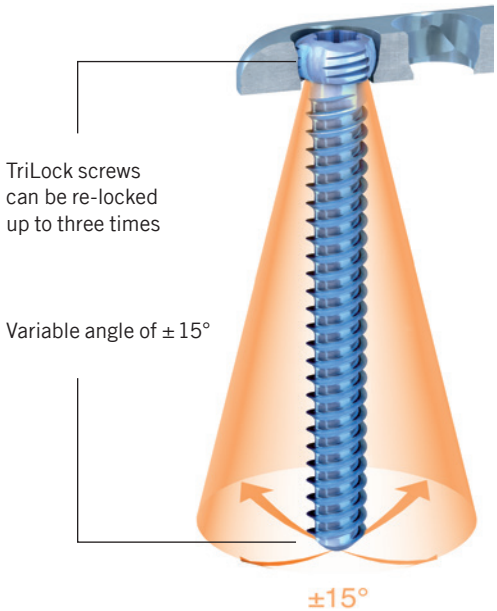
Multidirectional and angular stable TriLock® locking technology

TriLock® Technology

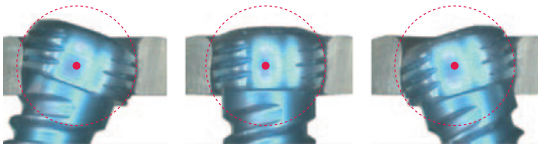
- Patented TriLock locking technology – multidirectional locking of the screw in the plate
  - Spherical three-point wedge-locking
  - Friction locking through radial bracing of the screw head in the plate – without additional tensioning components
- Screws can pivot freely by ± 15° in all directions for optimal positioning
- Fine tuning capabilities of fracture fragments
- TriLock screws can be re-locked in the same screw 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

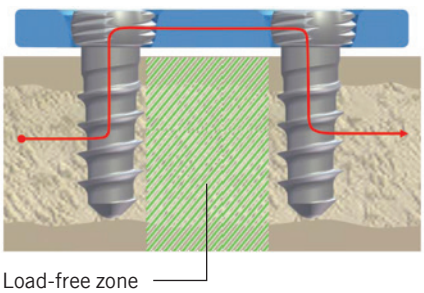


Minimal screw head protrusion



Biomechanics

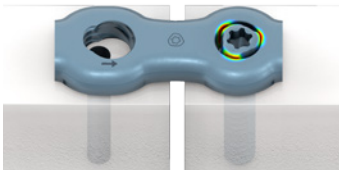
- Internal fixator principle
  - Stable plate – screw construct allows the bridging of unstable zones
  - Improved vascularization of the periosteum due to low contact of the plate



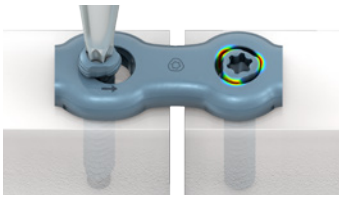
→ www.medartis.com/products/aptus/foot

TriLock^{PLUS} Technology

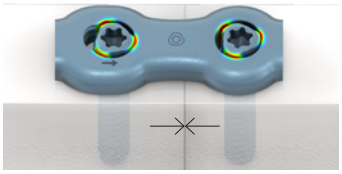
Excentric drilling of a core hole by means of the TriLock^{PLUS} drill guide



Insertion of the TriLock screw into the pre-drilled hole

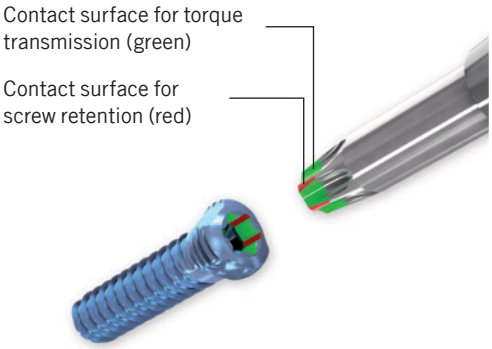


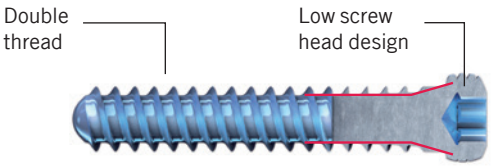
The fracture respectively the osteotomy gap is reduced as the screw head engages the plate. Compression and simultaneous locking is achieved. The maximum compression is 1 mm.



Screw Features

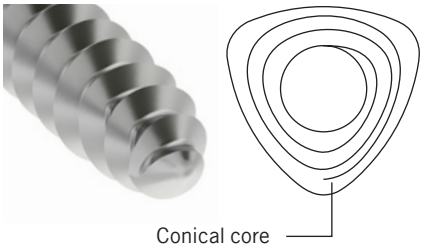
- Patented HexaDrive screw head design
  - Secure connection between screw and screwdriver
  - Increased torque transmission
  - Simplified screw pick-up due to patented self-holding technology
- Soft tissue protection due to smooth screw head design
- Atraumatic screw tip offers soft tissue protection 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 Technology of the 4.0 Transfixation Screw

- The triangular tip design widens the drilled hole
- Tapping and compression of the bone tissue during insertion for increased pull-out stability [1, 2]
- Reduced insertion torque
- Fully compatible with the 2.8 instruments



→ www.medartis.com/products/aptus/foot

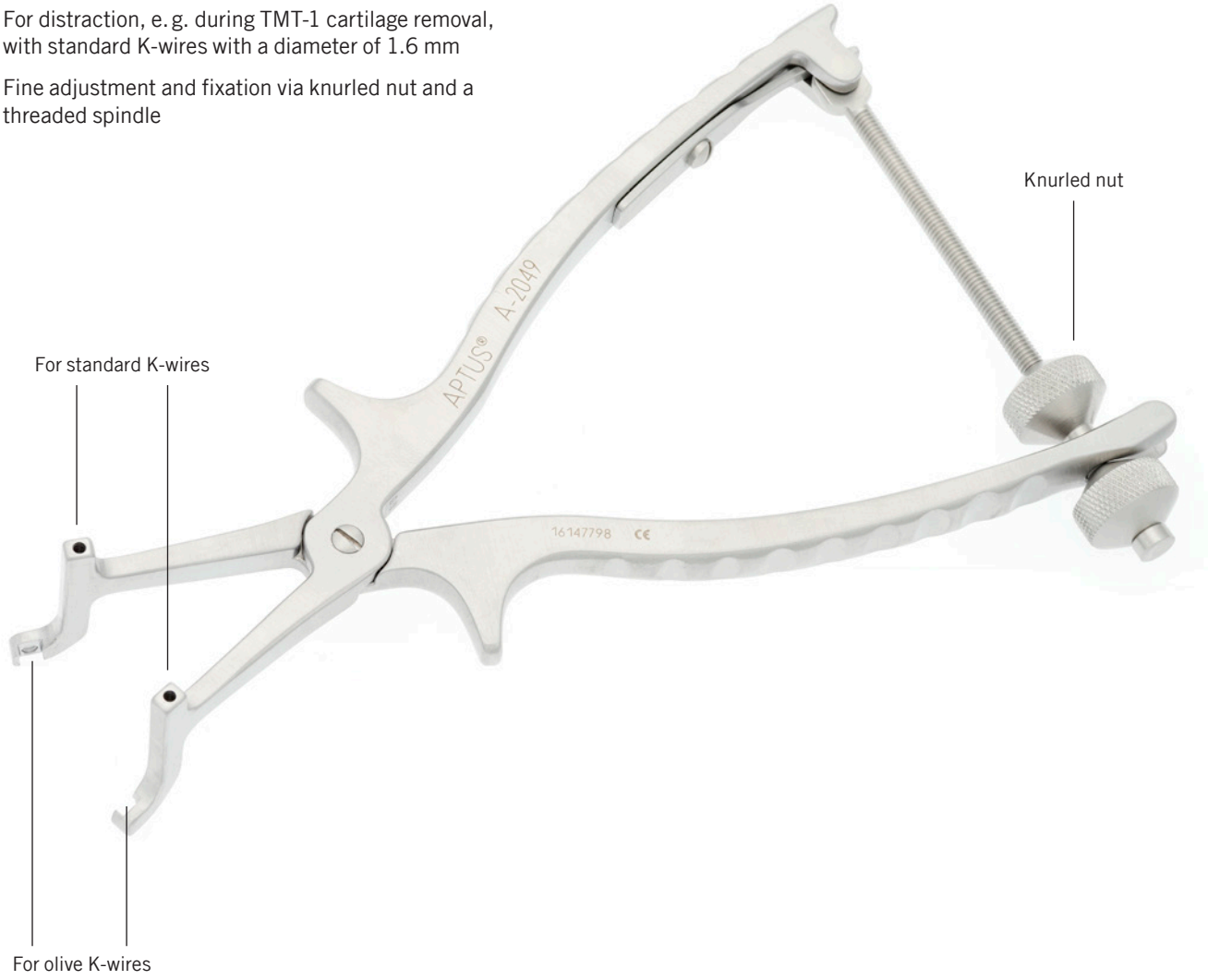
Instruments

Self-Holding Drill Sleeve

- Can be locked in the TriLock contour of the plate
- Multidirectional ±15°
- Enables single-handed drilling

Compression and Distraction Forceps

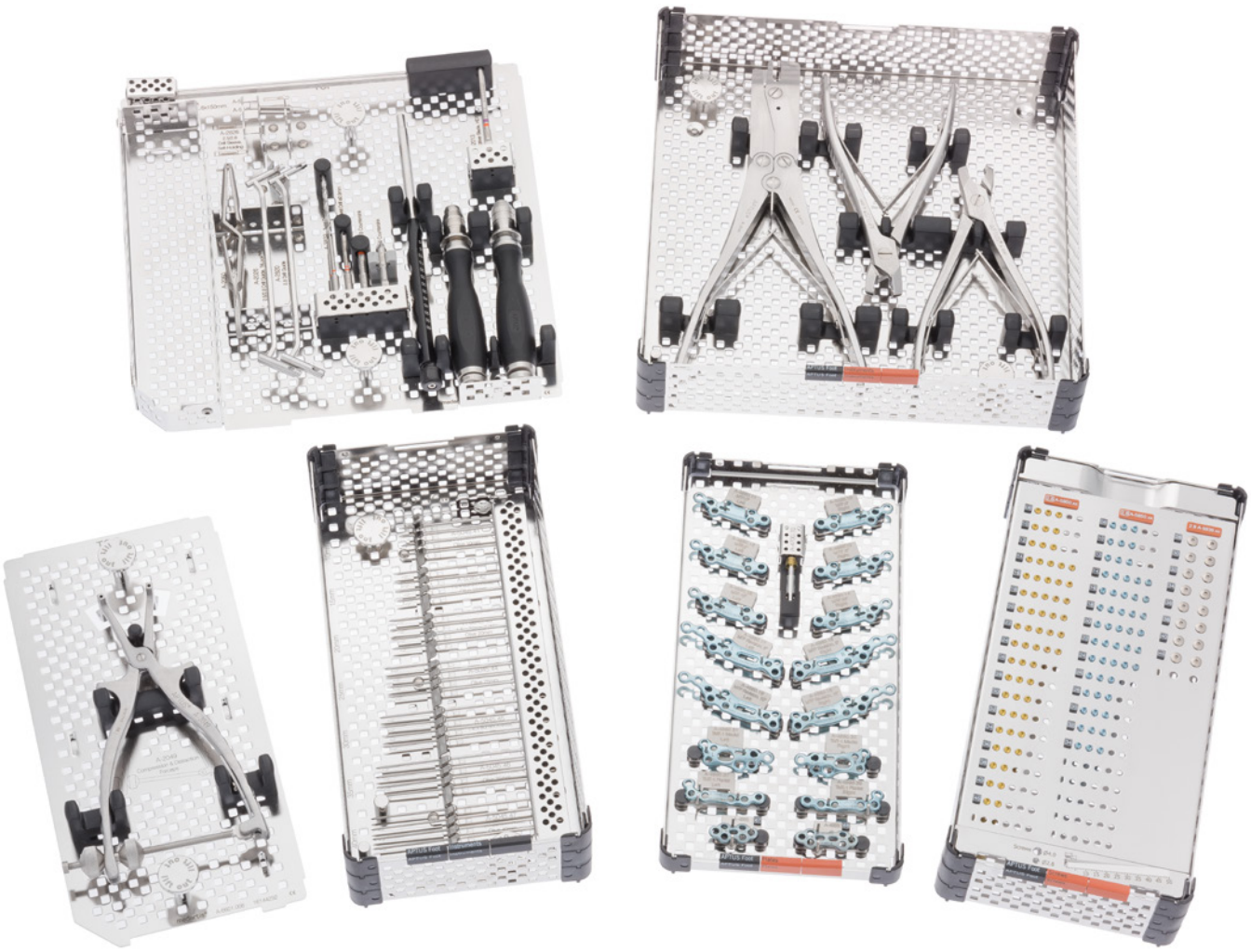
- For compression, e. g. during MTP-1 fusion, with olive K-wires or standard K-wires, both with a diameter of 1.6 mm
- For distraction, e. g. during TMT-1 cartilage removal, with standard K-wires with a diameter of 1.6 mm
- Fine adjustment and fixation via knurled nut and a threaded spindle



→ www.medartis.com/products/aptus/foot

Storage

- Completely modular
- Compact system
- Easy to handle
- Clear storage overview of implants and instruments
- Validated cleaning and sterilization



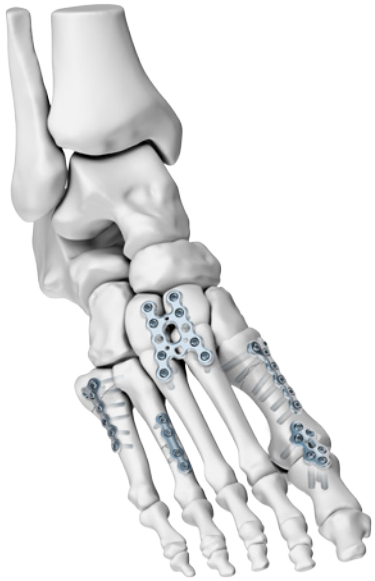
Example of equipped cases

→ www.medartis.com/products/aptus/foot

Portfolio Overview

Hallux System 2.8

- Indication-specific implants for TMT-1 and MTP-1 arthrodesis
- Anatomical 3D plate shapes
- K-wire slots for compression with K-wires
- TriLock^{PLUS}: Compression and angular stable locking



Fore- and Midfoot System 2.0 / 2.3, 2.8

- Generic plate shapes for maximum flexibility
- Rounded edges
- Available in two set configurations

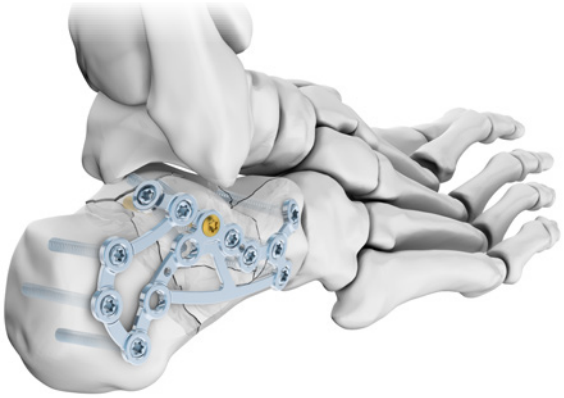
MTP Reamers

- Precise reaming – easy to handle

→ www.medartis.com/products/aptus/foot

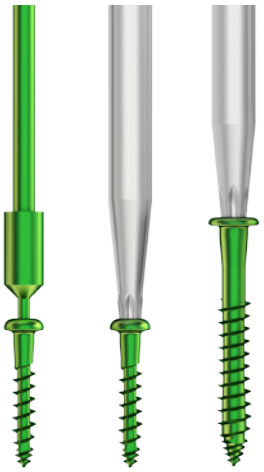
Calcaneus System 3.5

- The Calcaneus plates ensure a high degree of stability by following the intra calcaneal directions of force
- The subtalar joint is supported with up to 5 screws
  The sustentaculum tali can be reached with up to 3 screws
- Screws are positioned in areas with the best bone quality
- Plates may be cut and contoured for a wide range of indications

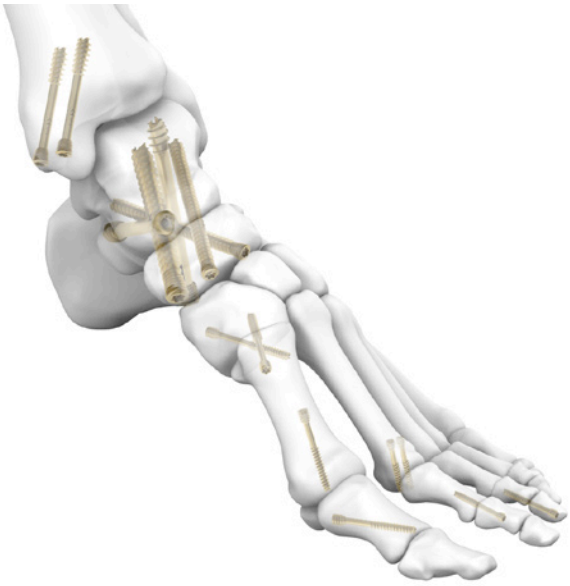


SpeedTip C Screws 2.0, 2.8

- Self-drilling screws for various osteotomies such as Weil, Chevron, Akin
- HexaDrive screwdriver connection also for snap-off screws
- Patented SpeedTip technology for accurate screw insertion



SpeedTip CCS* Screws 2.2, 3.0, 5.0, 7.0



* Cannulated Compression Screw

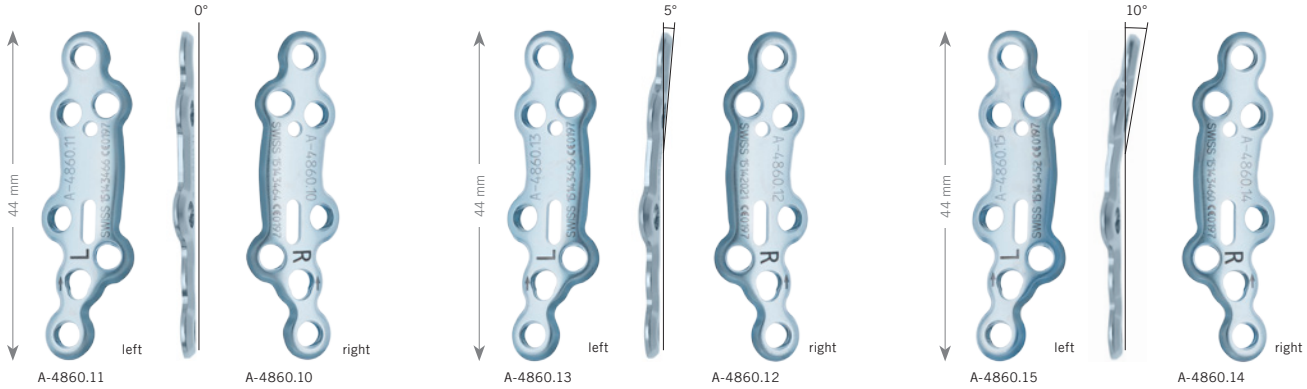
→ www.medartis.com/products/aptus/foot

Ordering Information

2.8 TriLock MTP Fusion Plates

Material: Titanium (ASTM F67)

Plate thickness: 1.6 mm

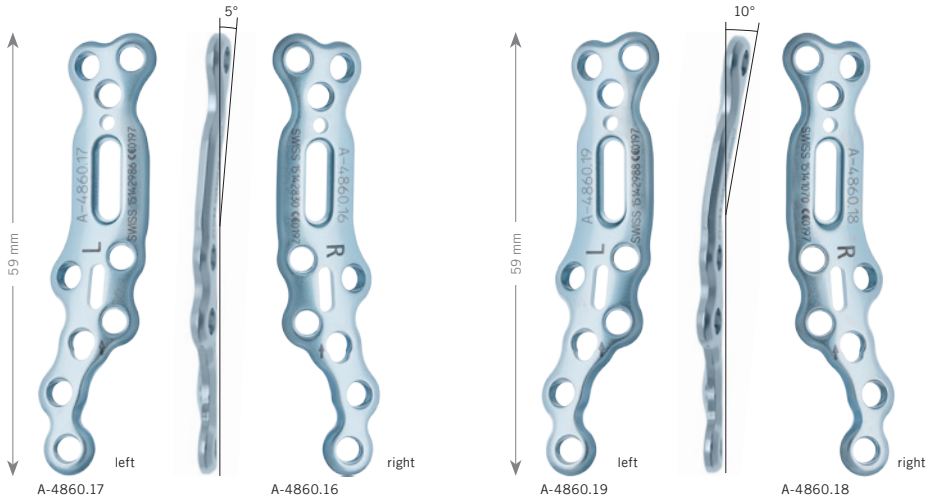


Art. No.	Description	Holes	Pieces/Pkg
A-4860.10	0° dorsiflexion, right	7	1
A-4860.11	0° dorsiflexion, left	7	1
A-4860.12	5° dorsiflexion, right	7	1
A-4860.13	5° dorsiflexion, left	7	1
A-4860.14	10° dorsiflexion, right	7	1
A-4860.15	10° dorsiflexion, left	7	1

2.8 TriLock MTP Revision Plates

Material: Titanium (ASTM F67)

Plate thickness: 2.0 mm

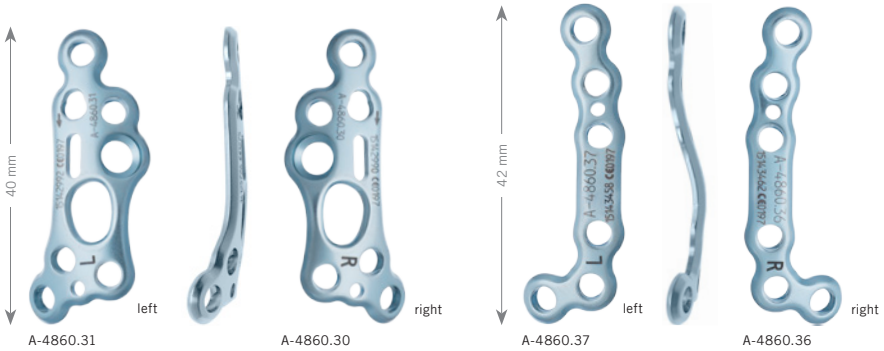


Art. No.	Description	Holes	Pieces/Pkg
A-4860.16	5° dorsiflexion, right	9	1
A-4860.17	5° dorsiflexion, left	9	1
A-4860.18	10° dorsiflexion, right	9	1
A-4860.19	10° dorsiflexion, left	9	1

2.8 TriLock TMT-1 Fusion Plates

Material: Titanium (ASTM F67)

Plate thickness: 1.6 mm



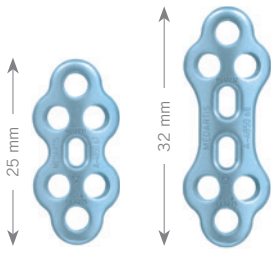
A-4860.31 A-4860.30 A-4860.37 A-4860.36

Art. No.	Description	Holes	Pieces/Pkg
A-4860.30	medial right	7	1
A-4860.31	medial left	7	1
A-4860.36	plantar right	6	1
A-4860.37	plantar left	6	1

2.8 TriLock Grid Plates

Material: Titanium (ASTM F67)

Plate thickness: 1.6 mm



A-4850.67 A-4850.68

Art. No.	Description	Holes	Pieces/Pkg
A-4850.67	Grid	6 (3+3)	1
A-4850.68	Grid	6 (3+3)	1

Scale: 1:1

→ www.medartis.com/products/aptus/foot

2.8 Cortical Screws, HexaDrive 7

Material: Titanium (ASTM F136)

Length	Art. No.	Pieces/Pkg	Art. No.	Pieces/Pkg
8 mm	A-5800.08/1	1	A-5800.08	5
10 mm	A-5800.10/1	1	A-5800.10	5
12 mm	A-5800.12/1	1	A-5800.12	5
14 mm	A-5800.14/1	1	A-5800.14	5
16 mm	A-5800.16/1	1	A-5800.16	5
18 mm	A-5800.18/1	1	A-5800.18	5
20 mm	A-5800.20/1	1	A-5800.20	5
22 mm	A-5800.22/1	1	A-5800.22	5
24 mm	A-5800.24/1	1	A-5800.24	5
26 mm	A-5800.26/1	1	A-5800.26	5
28 mm	A-5800.28/1	1	A-5800.28	5
30 mm	A-5800.30/1	1	A-5800.30	5
32 mm	A-5800.32/1	1	A-5800.32	5
34 mm	A-5800.34/1	1	A-5800.34	5
36 mm	A-5800.36/1	1	A-5800.36	5
38 mm	A-5800.38/1	1	A-5800.38	5
40 mm	A-5800.40/1	1	A-5800.40	5
45 mm	A-5800.45/1	1	A-5800.45	5

2.8 TriLock Screws, HexaDrive 7

Material: Titanium (ASTM F136)

Length	Art. No.	Pieces/Pkg	Art. No.	Pieces/Pkg
8 mm	A-5850.08/1	1	A-5850.08	5
10 mm	A-5850.10/1	1	A-5850.10	5
12 mm	A-5850.12/1	1	A-5850.12	5
14 mm	A-5850.14/1	1	A-5850.14	5
16 mm	A-5850.16/1	1	A-5850.16	5
18 mm	A-5850.18/1	1	A-5850.18	5
20 mm	A-5850.20/1	1	A-5850.20	5
22 mm	A-5850.22/1	1	A-5850.22	5
24 mm	A-5850.24/1	1	A-5850.24	5
26 mm	A-5850.26/1	1	A-5850.26	5
28 mm	A-5850.28/1	1	A-5850.28	5
30 mm	A-5850.30/1	1	A-5850.30	5
32 mm	A-5850.32/1	1	A-5850.32	5
34 mm	A-5850.34/1	1	A-5850.34	5
36 mm	A-5850.36/1	1	A-5850.36	5
38 mm	A-5850.38/1	1	A-5850.38	5
40 mm	A-5850.40/1	1	A-5850.40	5
45 mm	A-5850.45/1	1	A-5850.45	5

4.0 Transfixation Screws, HexaDrive 7

Material: Titanium (ASTM F136)

Length	Art. No.	Pieces/Pkg
28 mm	A-5936.28/1	1
30 mm	A-5936.30/1	1
32 mm	A-5936.32/1	1
34 mm	A-5936.34/1	1
36 mm	A-5936.36/1	1
38 mm	A-5936.38/1	1
40 mm	A-5936.40/1	1
45 mm	A-5936.45/1	1

2.5/2.8 Concave Washer

Material: Titanium (ASTM F136)

2:1

Art. No.	Pieces/Pkg
A-4700.70/1	1

Art. No.	Pieces/Pkg
A-4700.70	5

Twist Drill ∅ 2.35 mm

Art. No.	Stop	Length	Drill Shaft End	Pieces/Pkg
A-3832	50 mm	101 mm	AO Quick Coupling	1

Twist Drill ∅ 2.9 mm (for Gliding Hole)

Art. No.	Stop	Length	Drill Shaft End	Pieces/Pkg
A-3834	10 mm	61 mm	AO Quick Coupling	1

Countersinks for Cortical Screws

A-3835

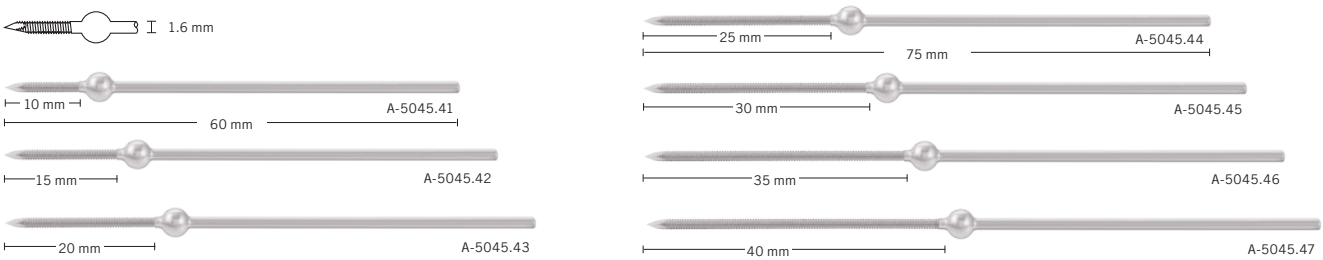
A-3930

Art. No.	Description	∅	Length	Shaft End	Pieces/Pkg
A-3835	for 2.8 cortical screws	3.7 mm	45 mm	AO Quick Coupling	1
A-3930	for 4.0 transfixation screws	6.0 mm	45 mm	AO Quick Coupling	1

K-Wires, Stainless Steel

Art. No.	Description	∅	Length	Pieces/Pkg
A-5040.41	trocar	1.6 mm	150 mm	10
A-5042.41	lancet	1.6 mm	150 mm	10

1.6 Olive K-Wires, Stainless Steel



Length	Thread length	∅	Art.No.	Pieces/Pkg	Art.No.	Pieces/Pkg
60 mm	10 mm	1.6 mm	A-5045.41/1	1	A-5045.41/4	4
65 mm	15 mm	1.6 mm	A-5045.42/1	1	A-5045.42/4	4
70 mm	20 mm	1.6 mm	A-5045.43/1	1	A-5045.43/4	4
75 mm	25 mm	1.6 mm	A-5045.44/1	1	A-5045.44/4	4
80 mm	30 mm	1.6 mm	A-5045.45/1	1	A-5045.45/4	4
85 mm	35 mm	1.6 mm	A-5045.46/1	1	A-5045.46/4	4
90 mm	40 mm	1.6 mm	A-5045.47/1	1	A-5045.47/4	4

Scale: 1:1

→ www.medartis.com/products/aptus/foot

Drill Guides

A-2026

A-2820

Art. No.	System Size	Description	Length	Pieces/Pkg
A-2026	2.5/2.8	TriLock[PLUS]	146 mm	1
A-2820	2.8		145 mm	1

Drill Sleeve

1:1

Art. No.	System Size	Description	Length	Pieces/Pkg
A-2826	2.5/2.8	self-holding	34 mm	1

Depth Gauge

A-2837

A-2837.1

Art. No.	System Size	Description	Length	Pieces/Pkg
A-2837	2.8		189 mm	1
A-2837.1	2.8	caliper	189 mm	1

Handle with Quick Connector

Art. No.	Description	Length	For Shaft End	Pieces/Pkg
A-2073	with twist cap	124 mm	AO Quick Coupling	1

Screwdriver Blade, Self-Holding

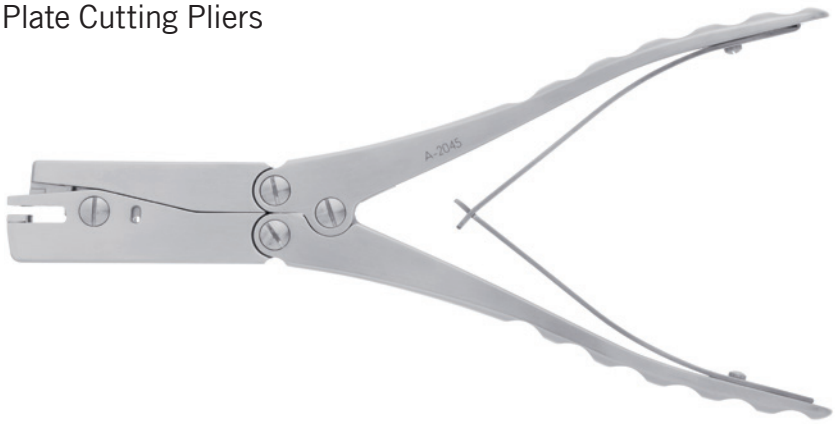
1:1

Art. No.	System Size	Interface	Length	Shaft End	Pieces/Pkg
A-2013	2.5/2.8	HD7	75 mm	AO Quick Coupling	1

Plate Holding Forceps

Art. No.	System Size	Length	Pieces/Pkg
A-2050	2.0–3.5	122 mm	1

Plate Cutting Pliers



Art. No.	System Size	Length	Pieces/Pkg
A-2045	2.0–3.5	218 mm	1

Plate Bending Pliers

Art. No.	System Size	Description	Length	Pieces/Pkg
A-2047	2.0–2.8	with Pins	158 mm	1

Compression and Distraction Forceps for K-Wires

Art. No.	Description	Length	Pieces/Pkg
A-2049	for 1.6 mm K-wires/ olive K-wires	163 mm	1

Scale: 1:2

→ www.medartis.com/products/aptus/foot

Plate and Bone Holding Forceps

Art. No.	Length	Pieces/Pkg
A-7012	140 mm	1

Reduction Forceps

Art. No.	Description	Length	Pieces/Pkg
A-7001	«Apart»	130 mm	1

Bone Elevator Mini-Hohmann

Art. No.	Width	Length	Pieces/Pkg
A-7006	6 mm	160 mm	1

Periosteal Elevator

Art. No.	Width	Length	Pieces/Pkg
A-7007	6 mm	185 mm	1

Hook

Art. No.	Description	Length	Pieces/Pkg
A-7009	«Tönnis»	150 mm	1

Publications

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. Plaass, C., Claassen, L., Daniilidis, K., Fumy, M., Stukenborg-Colsman, C., Schmiedl, A., & Ettinger, S.
Placement of Plantar Plates for Lapidus Arthrodesis Anatomical Considerations
Foot & Ankle International (2015): 1071100715619607.

MANUFACTURER & HEADQUARTERS

Medartis AG | Hochbergerstrasse 60E | 4057 Basel/Switzerland

P +41 61 633 34 34 | F +41 61 633 34 00 | www.medartis.com

SUBSIDIARIES

Australia | Austria | France | Germany | Mexico | New Zealand | Poland | UK | USA

For detailed information regarding our subsidiaries and distributors, please visit www.medartis.com

CE
0197