

Benchmark

Bone Fixation Plates on the market

placas de fixação óssea no mercado

INTRODUÇÃO

Análise de mercado de Placas de Fixação Óssea entre várias empresas internacionais responsáveis pelos métodos e dispositivos médicos mais qualificados e inovadores da área.

Com esta pesquisa pretende-se compreender as características fulcrais que cada empresa valoriza no momento de criação de placas de fixação óssea, nomeadamente geometrias, espessuras, diâmetros dos parafusos escolhidos e outras complementaridades essenciais à elevada qualidade deste produto cirúrgico.

Neste documento, será possível avaliar, de forma global, diferentes intervenções a nível estrutural. De facto, as diversas abordagens corroboram a possibilidade de transformar e readaptar a geometria de uma placa de fixação óssea, alcançando ou elevando os níveis de performance necessários.

Serão analisadas 4 áreas corporais, tratando-se da zona do calcâneo (osso do calcanhar), do pulso, das falanges e metatarsos do pé e das falanges e metacarpos da mão, e, por fim, de ossos do crânio.

2
LATERAL WALL
CALCANEAL
PLATES

8
WRIST PLATING
SYSTEM

11
HAND & FOOT
PLATING SYSTEM

16
FACIAL PLATING
SYSTEM

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C
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Lateral Wall Calcaneal Plates by



ACUMED® CALCANEAL PLATING SYSTEM

Dimensions: S,M and L plates can also be customized

Thickness: 1.27mm (for mini plates) and 0.5mm (for Locking Calcaneal Plates)

Screw dimensions: Ø 2.7, 3.0, 3.5 or 4.0mm

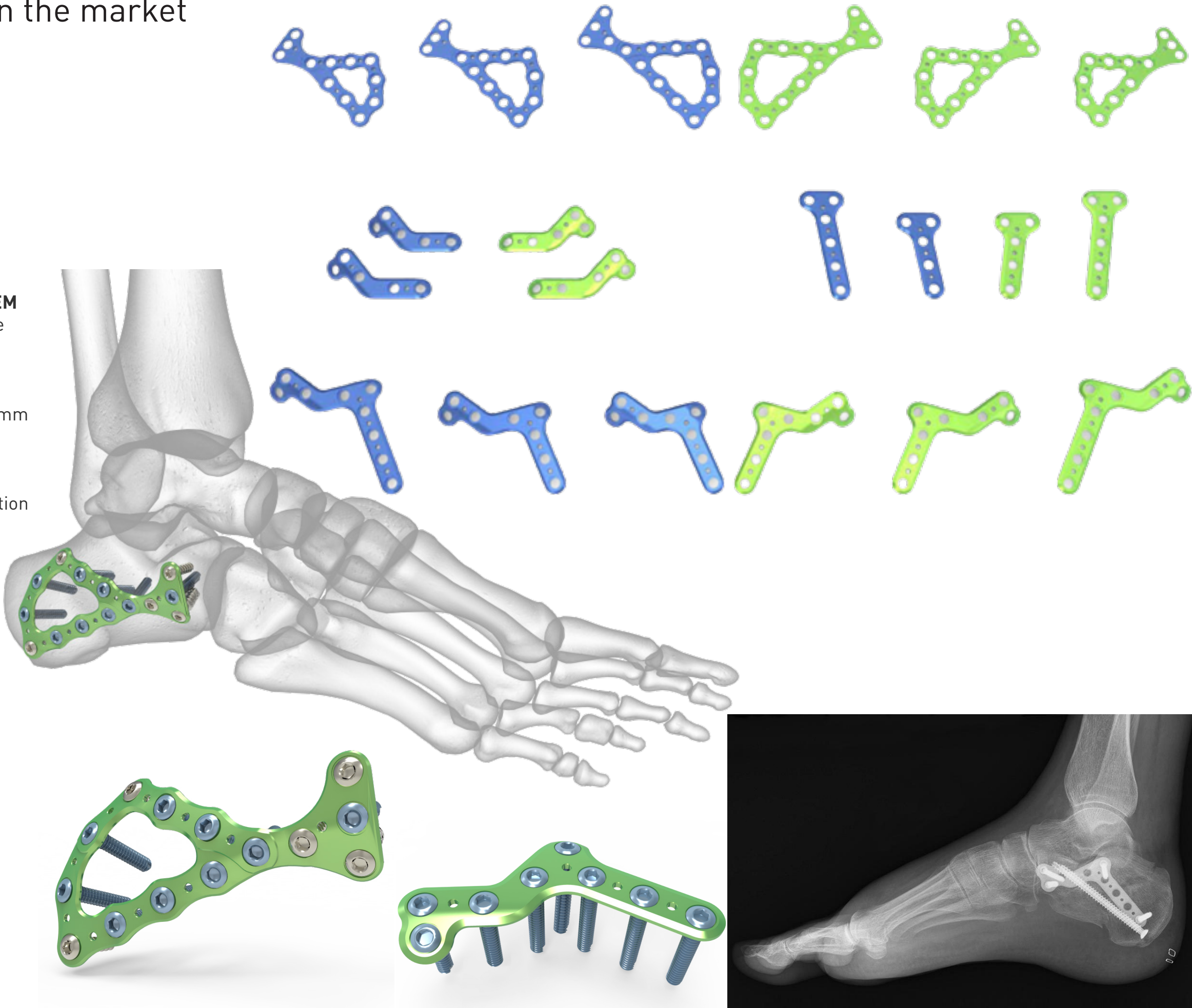
Technical Features

- Low profile
- “Designed to minimize soft tissue irritation while still providing a durable construct”

MINI-Calc Plates	Plate Length	Thickness
Anterior Process Calcaneal Plate, Medium, Left, Right	41 mm	1.27 mm
Anterior Process Calcaneal Plate, Large, Left, Right	45 mm	1.27 mm
Posterior Tuberosity Calcaneal Plate, 5-Hole, Left, Right	19 mm	1.27 mm
Posterior Tuberosity Calcaneal Plate, 6-Hole, Left, Right	21 mm	1.27 mm
Combo Calcaneal Plate, Medium, 8-Hole, Left, Right	41 mm	1.27 mm
Combo Calcaneal Plate, Large, 8-Hole, Left, Right	45 mm	1.27 mm
Combo Calcaneal Plate, Large, 9-Hole, Left, Right	47 mm	1.27 mm
Locking Calcaneal Plates	Plate Length	Thickness
Locking Calcaneal Plate, Small, Left, Right	57 mm	0.5 mm
Locking Calcaneal Plate, Medium, Left, Right	63 mm	0.5 mm
Locking Calcaneal Plate, Large, Left, Right	71 mm	0.5 mm

<https://www.acumed.net/system/files/Acumed-SurgicalTechnique-Calcaneal-PlatingSystem-LEX00-05-C.pdf>

<https://www.acumed.net/wp-content/uploads/2021/03/Acumed-Products-Catalog-EN-Print-GEN00-21-D.pdf>



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Lateral Wall Calcaneal Plates by



FPS™ CALCANEAL PLATES

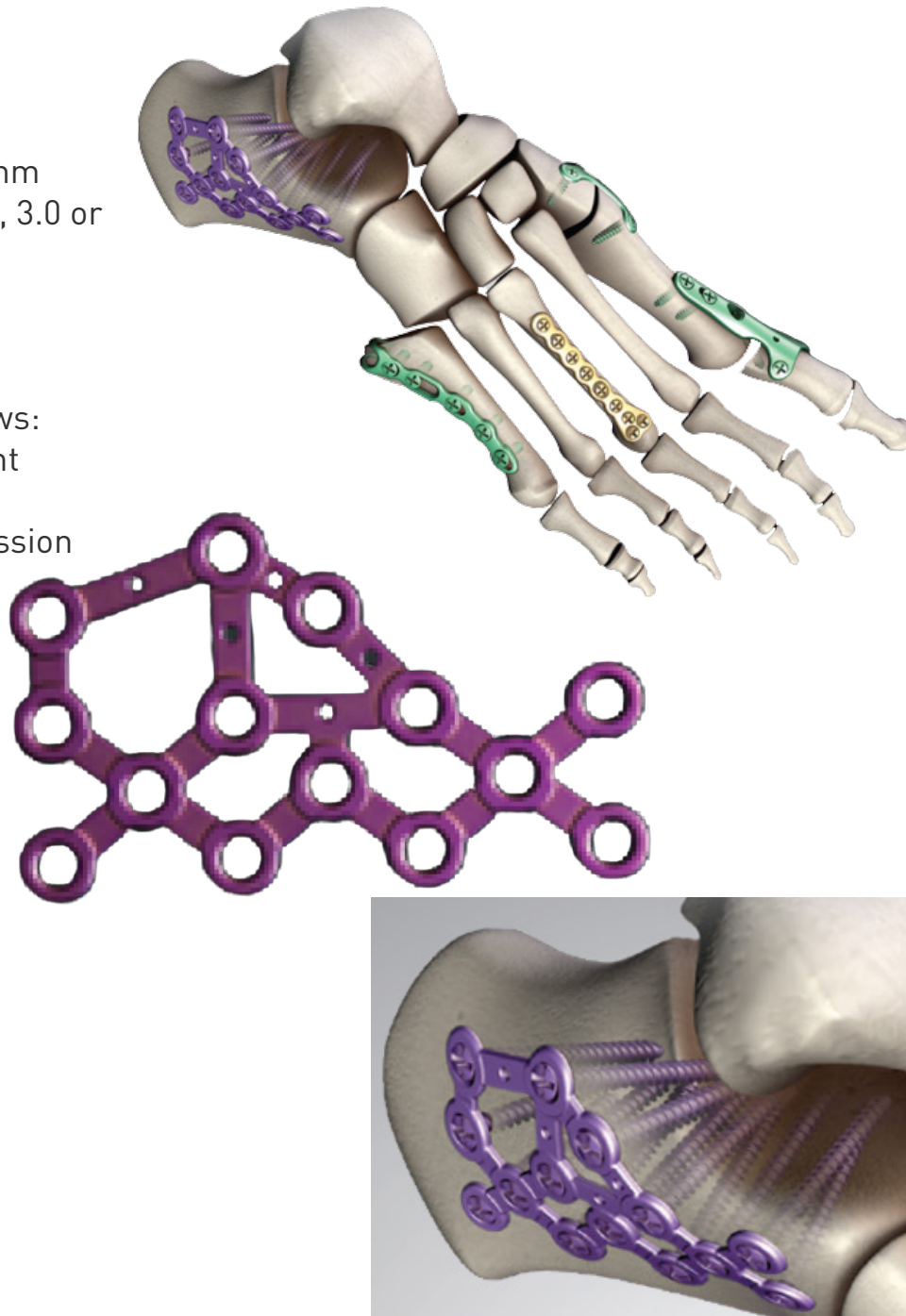
Dimensions: unspecified

Thickness: 2.0, 2.7, 3.5 or 4.0mm

Screw dimensions: Ø 2.0, 2.4, 3.0 or 4.0mm

Technical Features

- Low profile
- Color coded plates and screws: different colors means different thicknesses
- "Plates also include compression holes for additional stability"



<http://synthes.vo.llnwd.net/o16/LLNWM8/US%20Mobile/Synthes%20North%20America/Product%20Support%20Materials/Technique%20Guides/DSUSTRM09161086%20Rev%20B.pdf>

Lateral Wall Calcaneal Plates by



SINUS TARSI PLATE

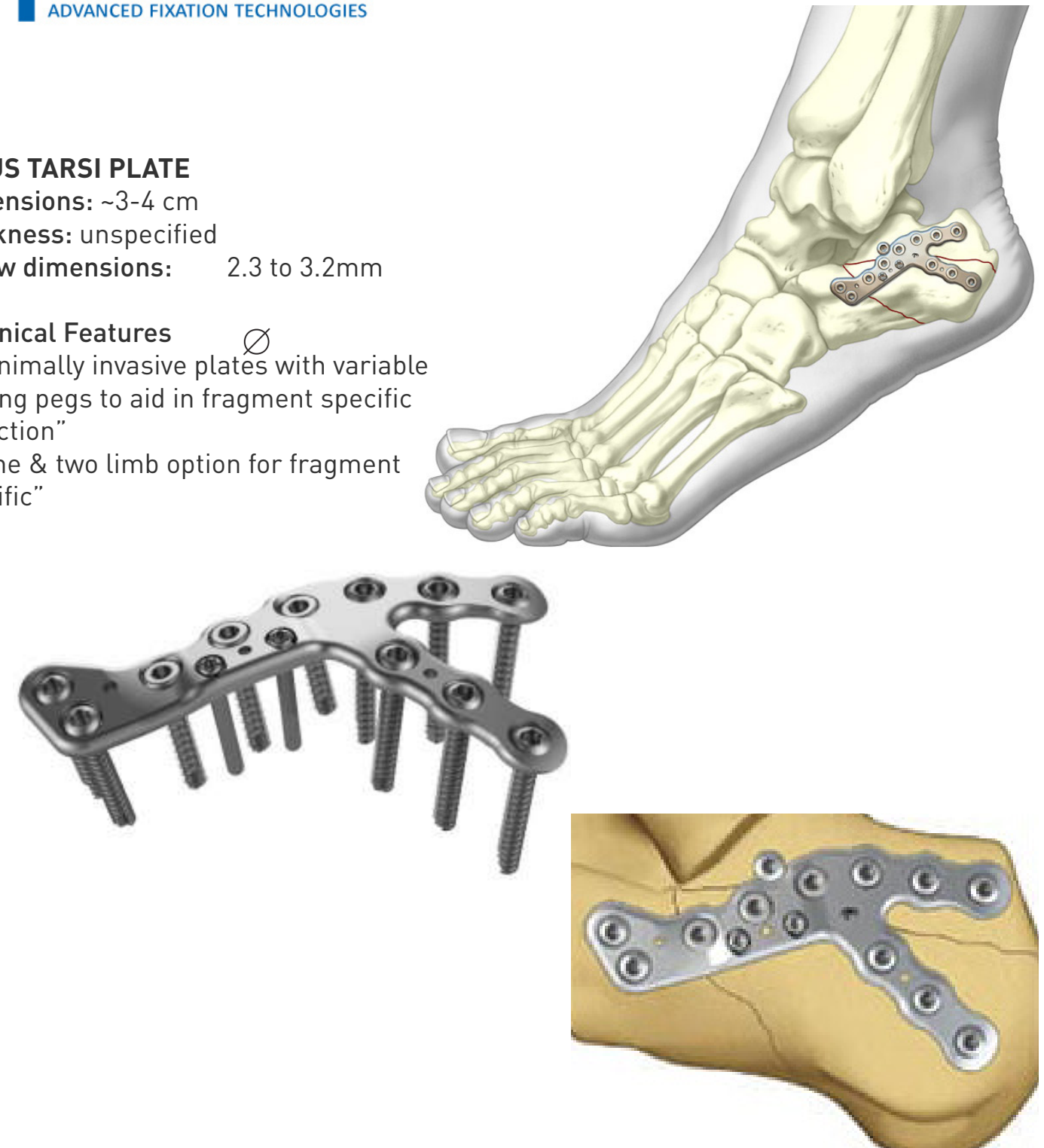
Dimensions: ~3-4 cm

Thickness: unspecified

Screw dimensions: 2.3 to 3.2mm

Technical Features

- "Minimally invasive plates with variable locking pegs to aid in fragment specific reduction"
- "One & two limb option for fragment specific"



<https://trimedortho.com/portfolio-items/sinus-tarsi-plate/>
<https://www.trimedortho.com/wp-content/uploads/2018/05/LC-72-9000-002-RE-V-A-STM-SinusTarsi.pdf>

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Bone Fixation Plates on the market

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Lateral Wall Calcaneal Plates by



GORILLA® SINUS TARSI PLATE

Dimensions: "Sizes X-Small, Small, Medium and Large"

Thickness: 1.0mm

Screw dimensions: Ø 2.7, 3.5 or 4.2mm

Technical Features

- "Right and left specific design"
- "Intended for use with a sinus tarsi incision"
- "Made of Titanium Alloy (Ti6Al4V-ELI) for increased strength"

GORILLA® PERIMETER PLATES

Dimensions: "Sizes XS, S, M and L"

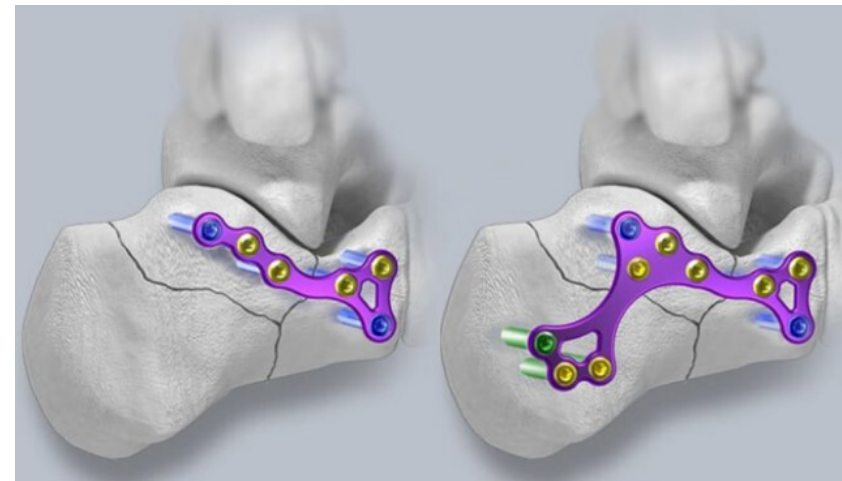
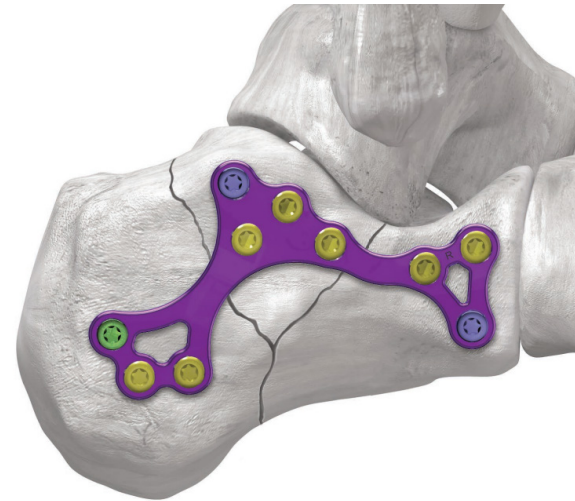
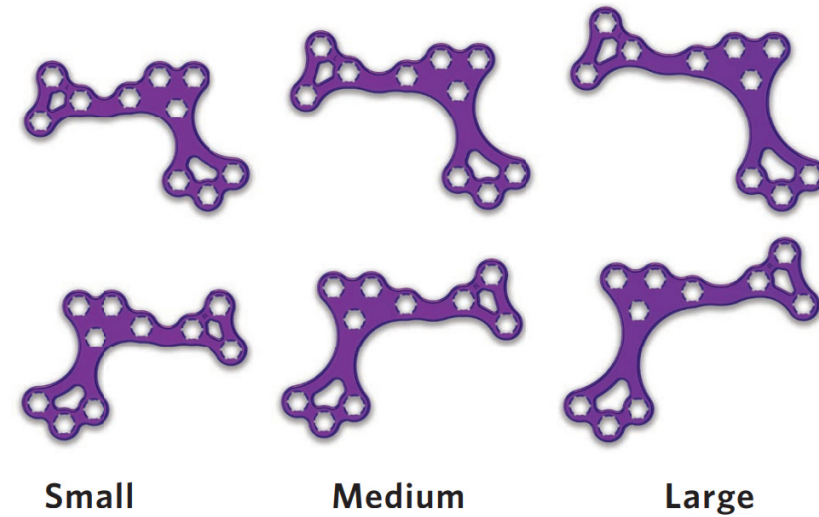
Thickness: 1.1mm

Screw dimensions: Ø 2.7, 3.5 or 4.2mm

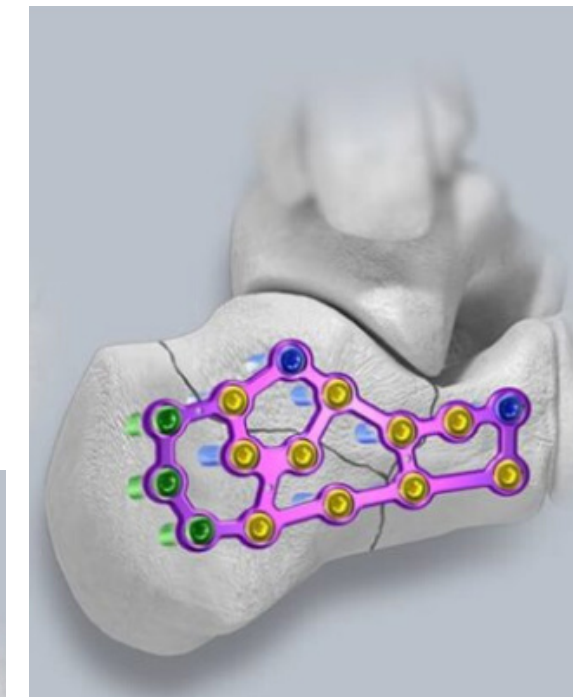
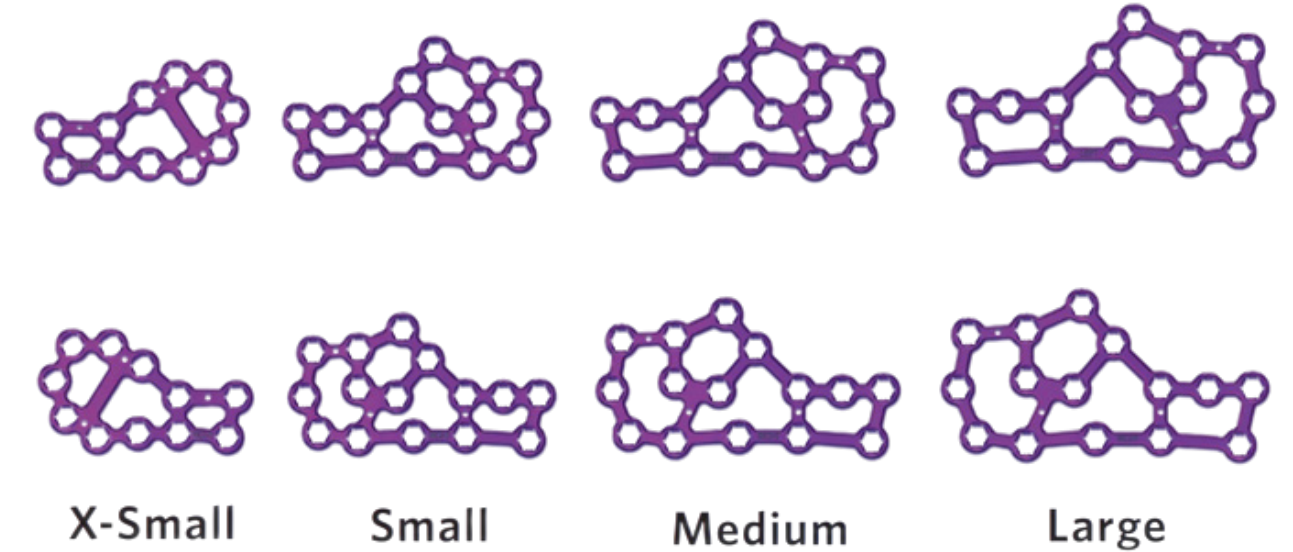
Technical Features

- "Intended for use with a lateral extensile incision"
- "Right and left specific design"
- "Made of CP Grade 4 Titanium for increased malleability"
- "Capability for flexibility of screw placement"

Sinus Tarsi Support Plates



Perimeter Plates



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Lateral Wall Calcaneal Plates by



ITVAL FOOT SYSTEM

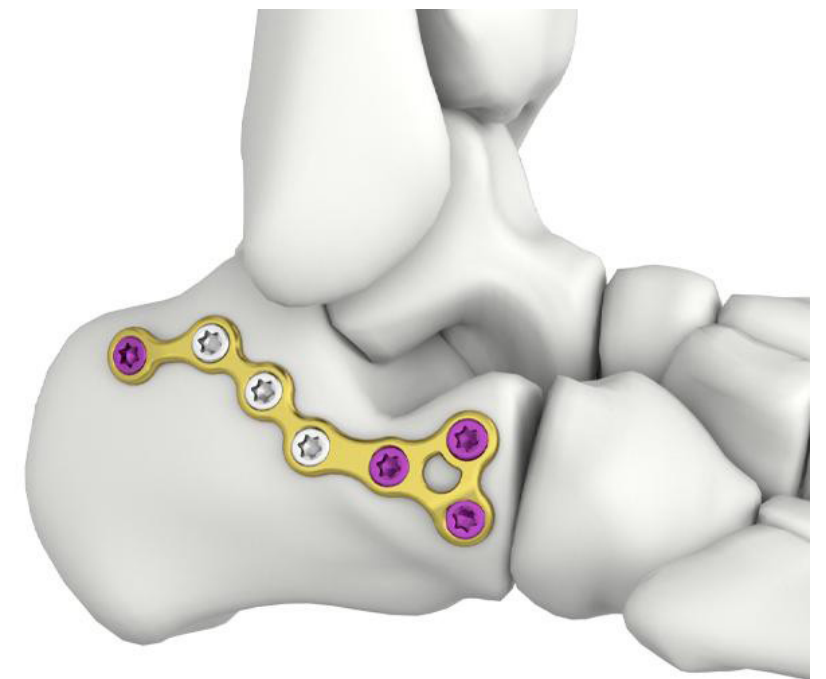
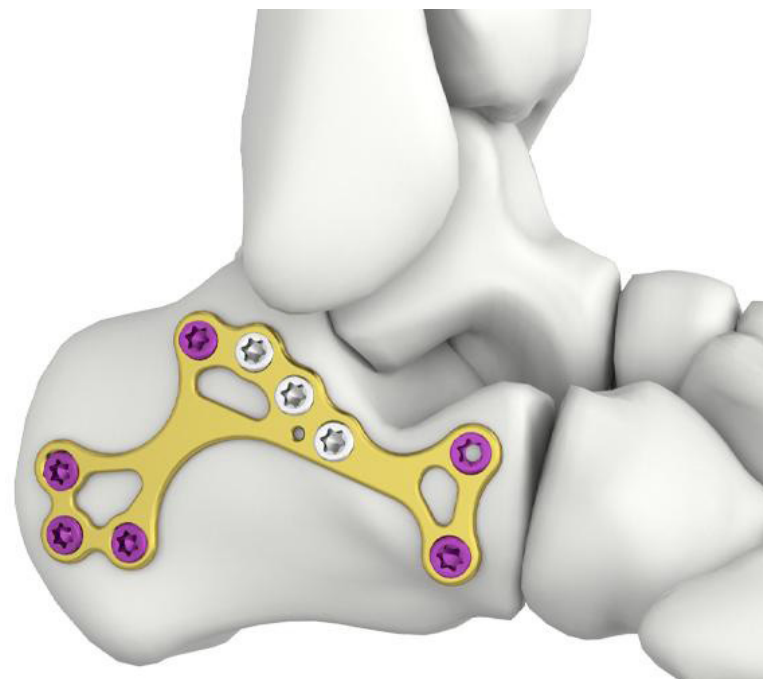
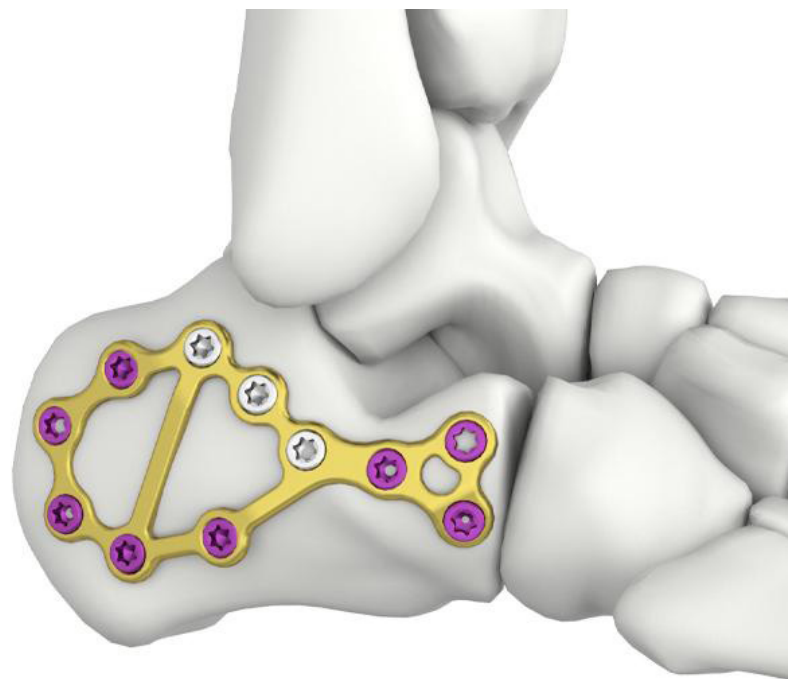
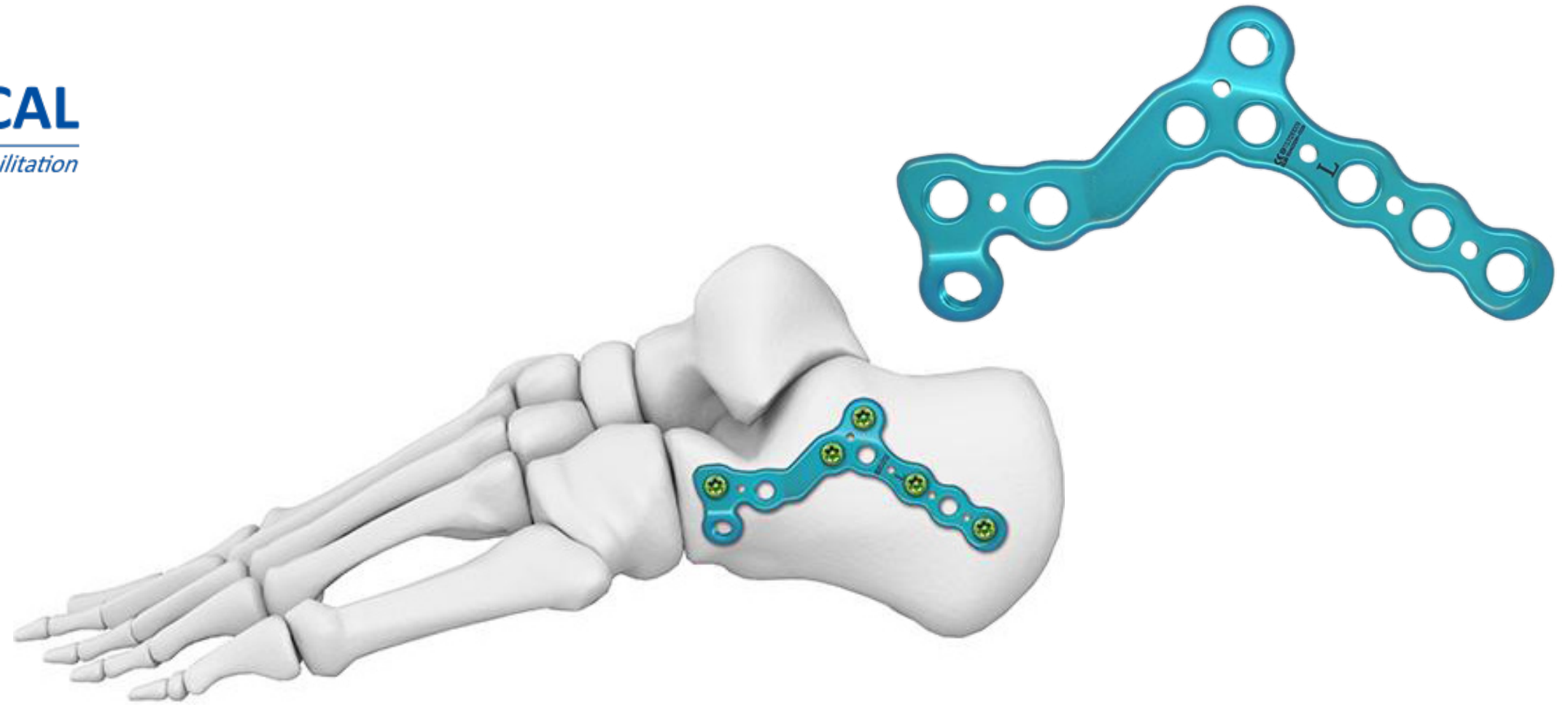
Dimensions: unspecified

Thickness: unspecified

Screw dimensions: $\varnothing$ 2.7, 3.0 or 3.5mm

Technical Features

- "Variable structure"
- "Anatomic low profile design reduces the irritation of soft issues"
- "Titanium alloy materials"
- "Different [screw] diameters and materials provide more clinical choices"



Benchmark

Bone Fixation Plates on the market

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Lateral Wall Calcaneal Plates by



VA LOCKING ANTEROLATERAL PLATES

Dimensions: Short (L.40mm) and Long (L.56mm) sizes

Thickness: 2.7mm

Screw dimensions: Ø 2.7, 3.5 and 4.0mm

Technical Features

- Needs to be combined with independent screws
- “Long plate provides additional support along the superior perimeter of the tuberosity”

VA LOCKING CALCANEAL PLATES

Dimensions: Small (L.58mm) Medium (L.64mm) and Large (L.70mm) sizes

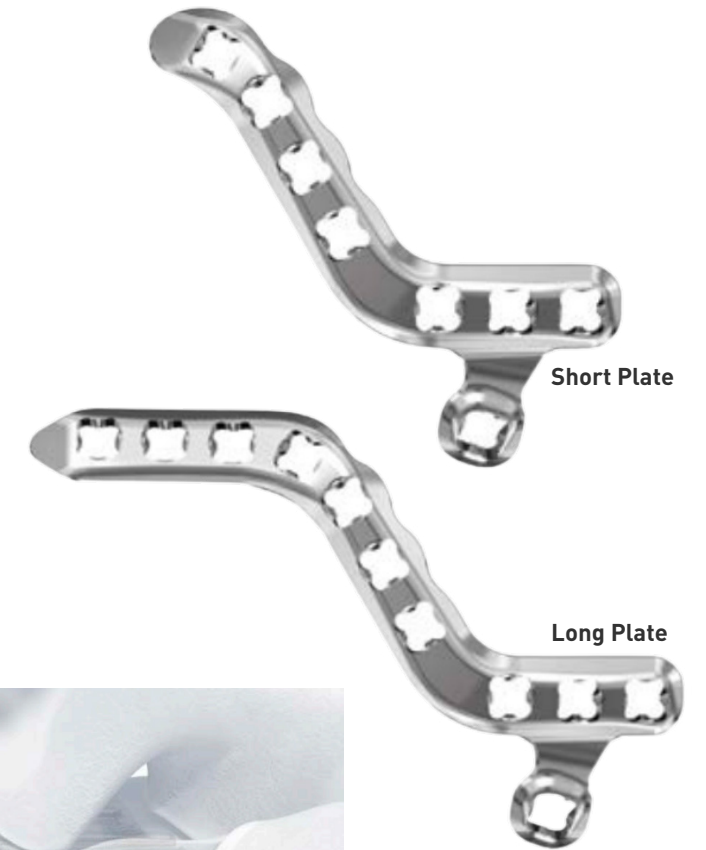
Thickness: 2.7mm

Screw dimensions: Ø 2.7, 3.5 and 4.0mm

Technical Features

- “For intra and extra articular fractures of the calcaneus, as well as deformities and malunions”
- “Anatomic and low-profile”
- “Ability to adapt screw trajectory to match calcaneal anatomy and fracture pattern”
- Stainless steel and titanium

Variable Angle (VA) Locking Anterolateral Calcaneal Plates



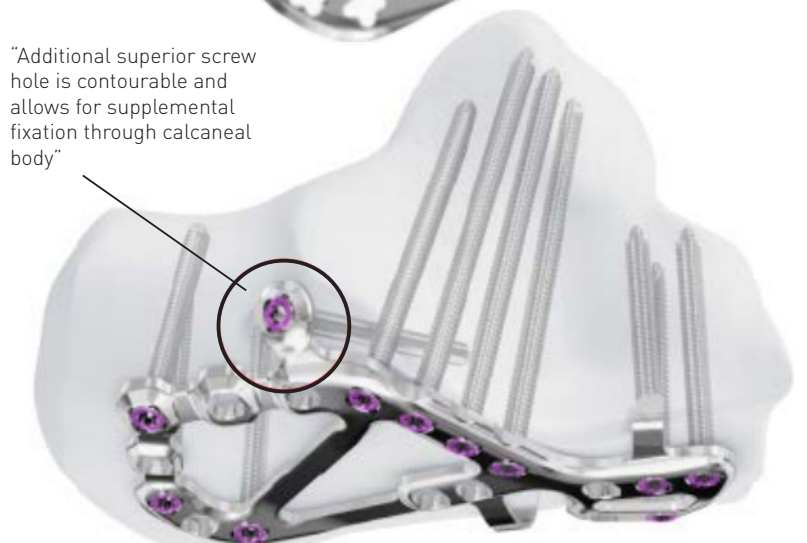
Independent Screws



VA Locking Calcaneal Plates



“Additional superior screw hole is contourable and allows for supplemental fixation through calcaneal body”



http://synthes.vo.llnwd.net/o16/LLNWMB8/INT%20Mobile/Synthes%20International/Product%20Support%20Material/legacy_Synthes_PDF/DSEM-TRM-0415-0362-2_LR.pdf

http://synthes.vo.llnwd.net/o16/LLNWMB8/INT%20Mobile/Synthes%20International/Product%20Support%20Material/legacy_Synthes_PDF/107405.pdf

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Lateral Wall Calcaneal Plates by



CALCANEAL FRACTURE MANAGEMENT SYSTEM

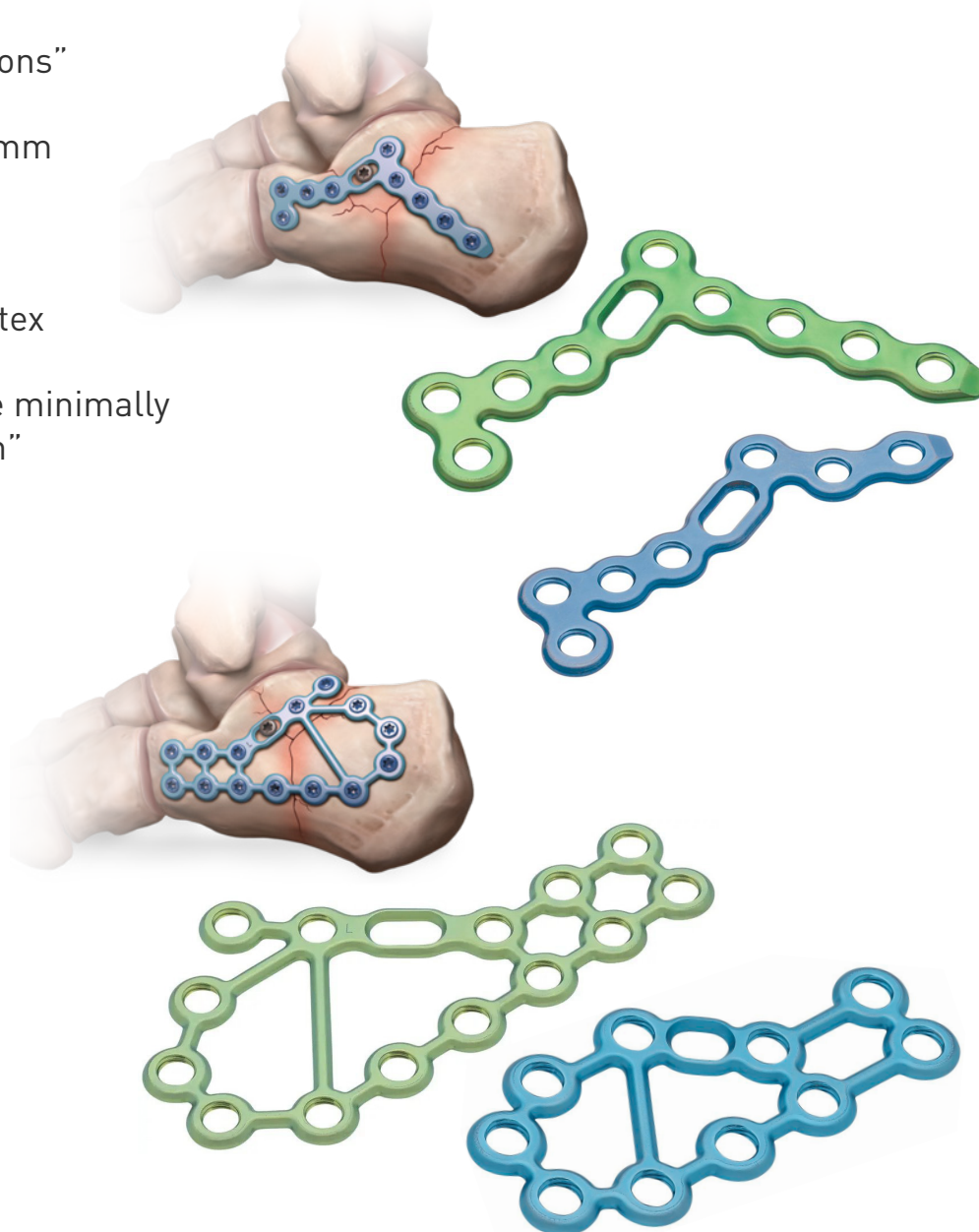
Dimensions: "17 plate options"

Thickness: 1.35mm

Screw dimensions: Ø3.5mm

Technical Features

- Low profile
- "Designed without any latex components or packaging"
- "Provide targeting for the minimally invasive sinus tarsi incision"



Lateral Wall Calcaneal Plates by



CALCANEAL PLATE

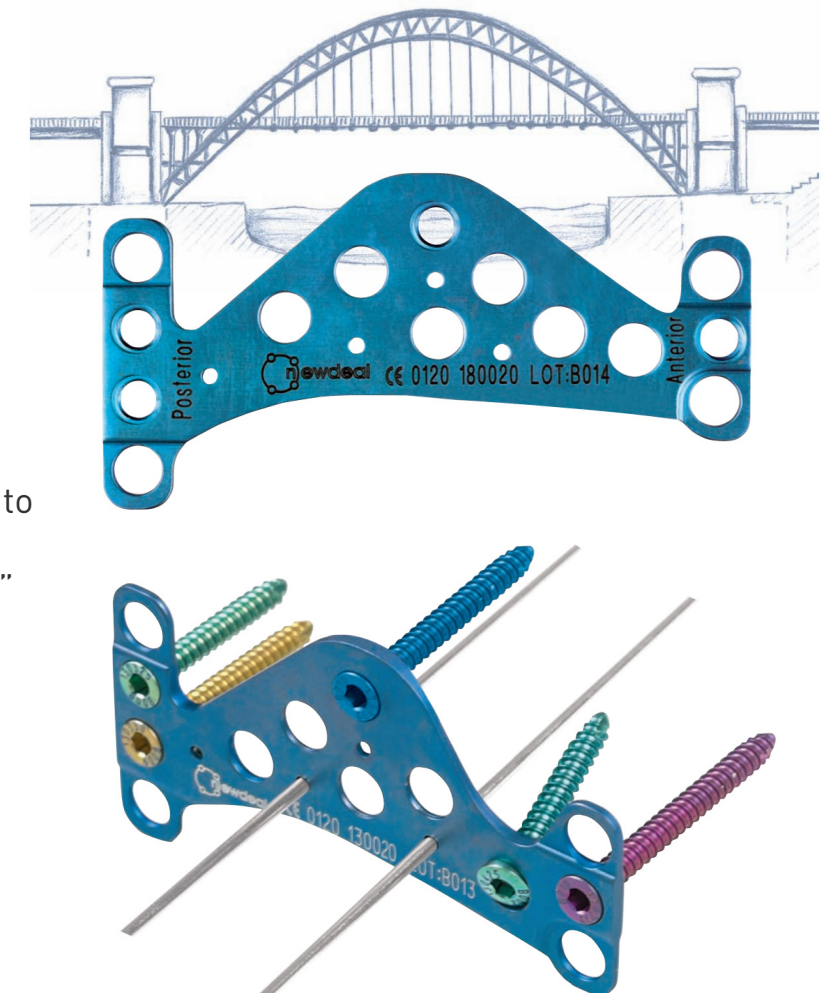
Dimensions: L. 5.5cm (size Small), 6.5cm (size Medium) and 7.5cm (size Large)

Thickness: "1 mm in the middle, and 1.80mm in the sites of main fixation"

Screw dimensions: Ø3.5mm

Technical Features

- Low profile
- "Thickness allows remodeling according to the lateral wall of the calcaneus"
- "Color code for the plate and the screws"
- Titanium alloy



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Bone Fixation Plates on the market

placas de fixação óssea no mercado

Wrist Plating System by



ACU-LOC® 2 VOLAR DISTAL RADIUS PROXIMAL PLATES

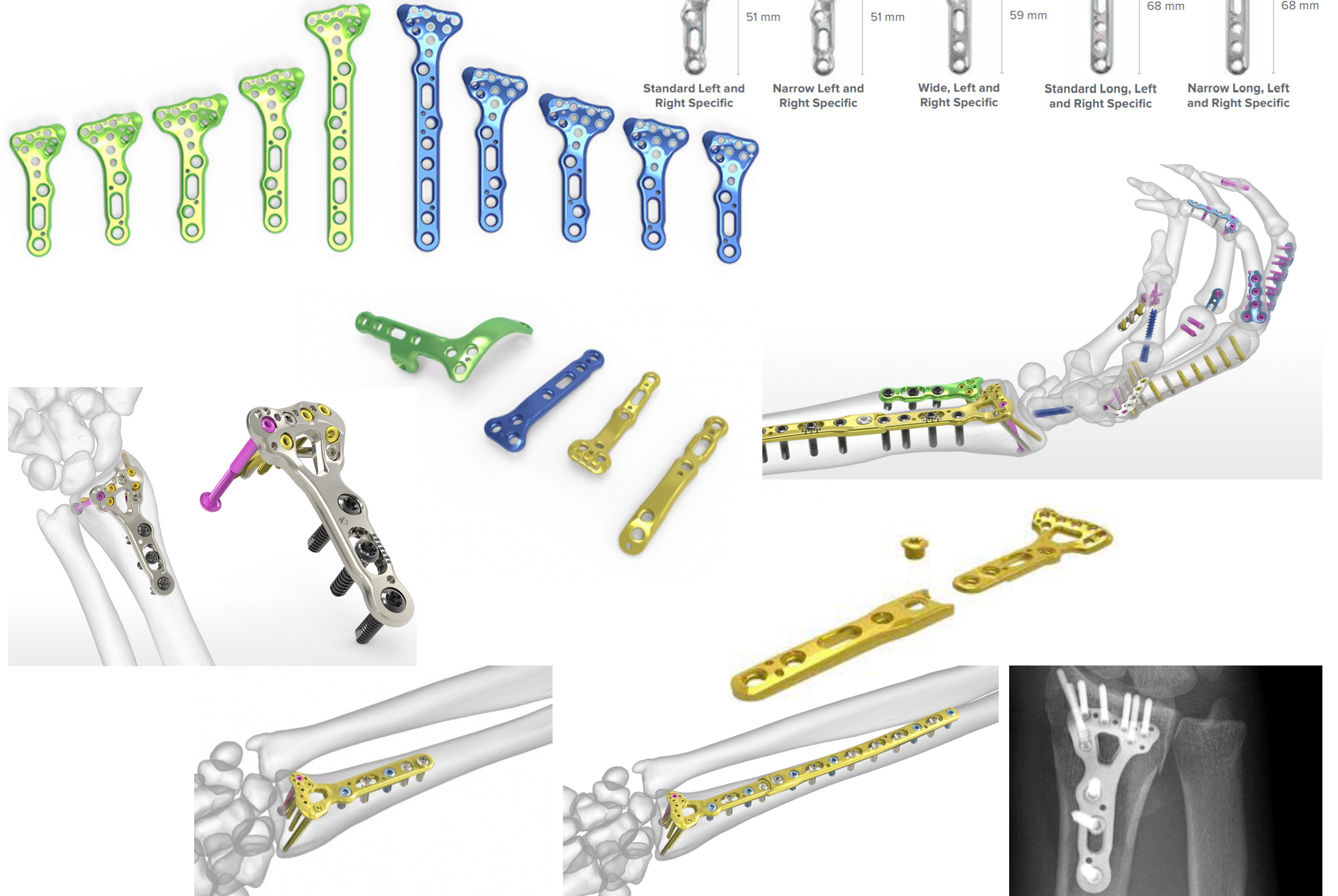
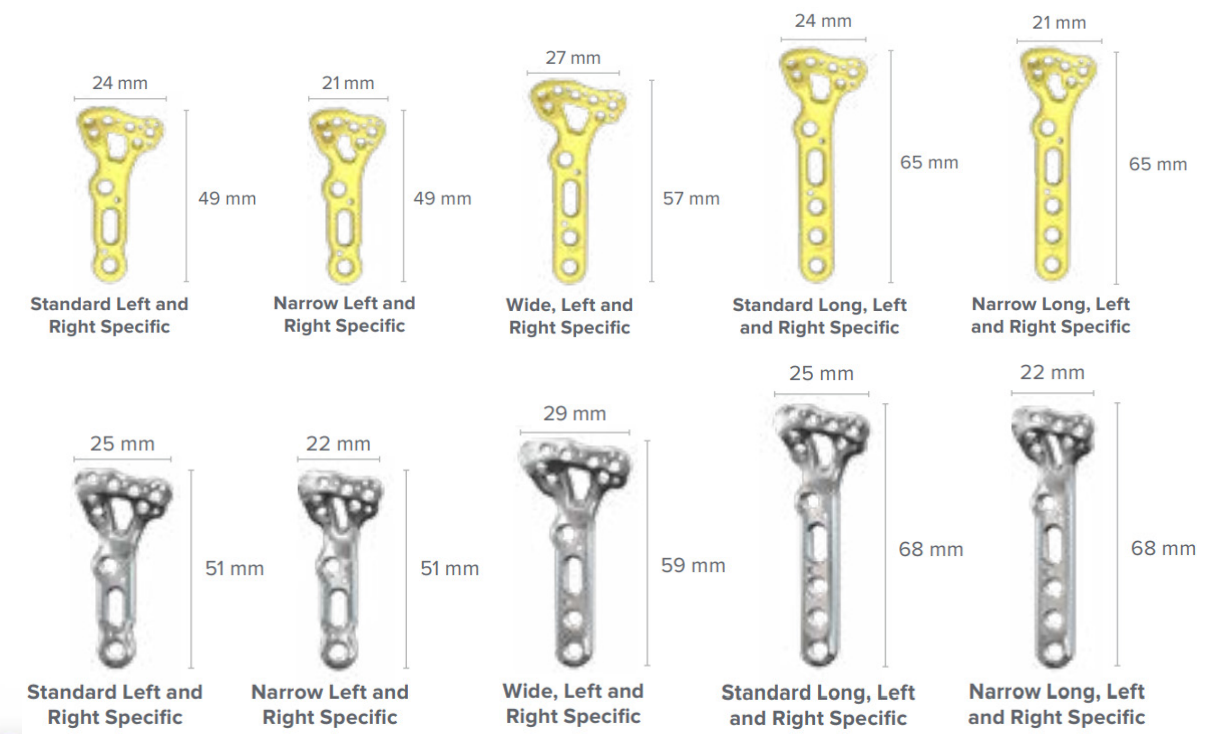
Dimensions: 21-29mm width x 49-68mm height

Thickness: unspecified

Screw dimensions: Ø 2.3, 2.7 or 3.5mm

Technical Features

- Surgeons can extend the length and the width of any of this plates up to 176 mm
- Intra and extra-articular
- “Highly polished surface finish”



Benchmark

Bone Fixation Plates on the market

placas de fixação óssea no mercado

Wrist Plating System by

medartis®

PRECISION IN FIXATION

APTUS® DISTAL RADIUS FRACTURE PLATES

Dimensions: 3 different sizes

Thickness: 1.6 or 1.8mm

Screw dimensions: Ø1.5mm

Technical Features

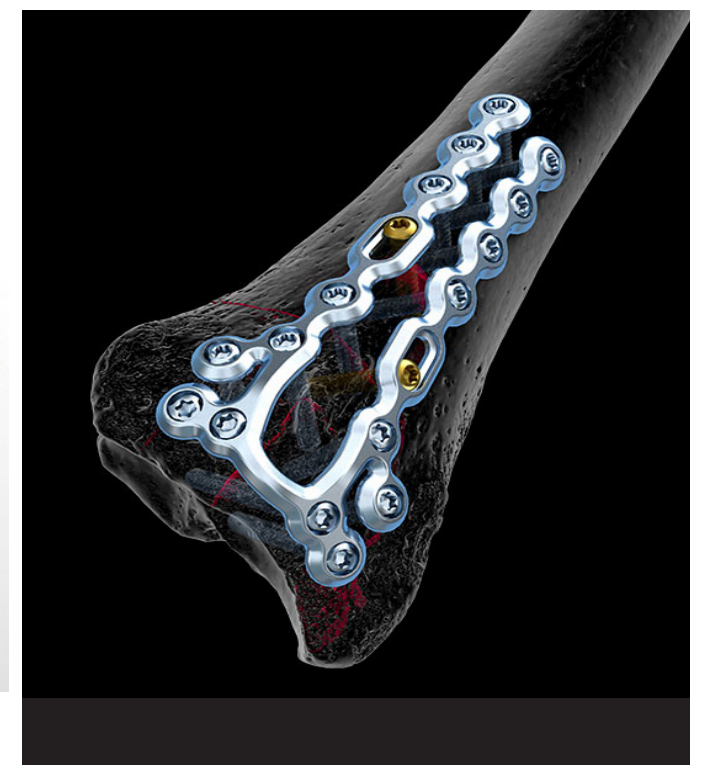
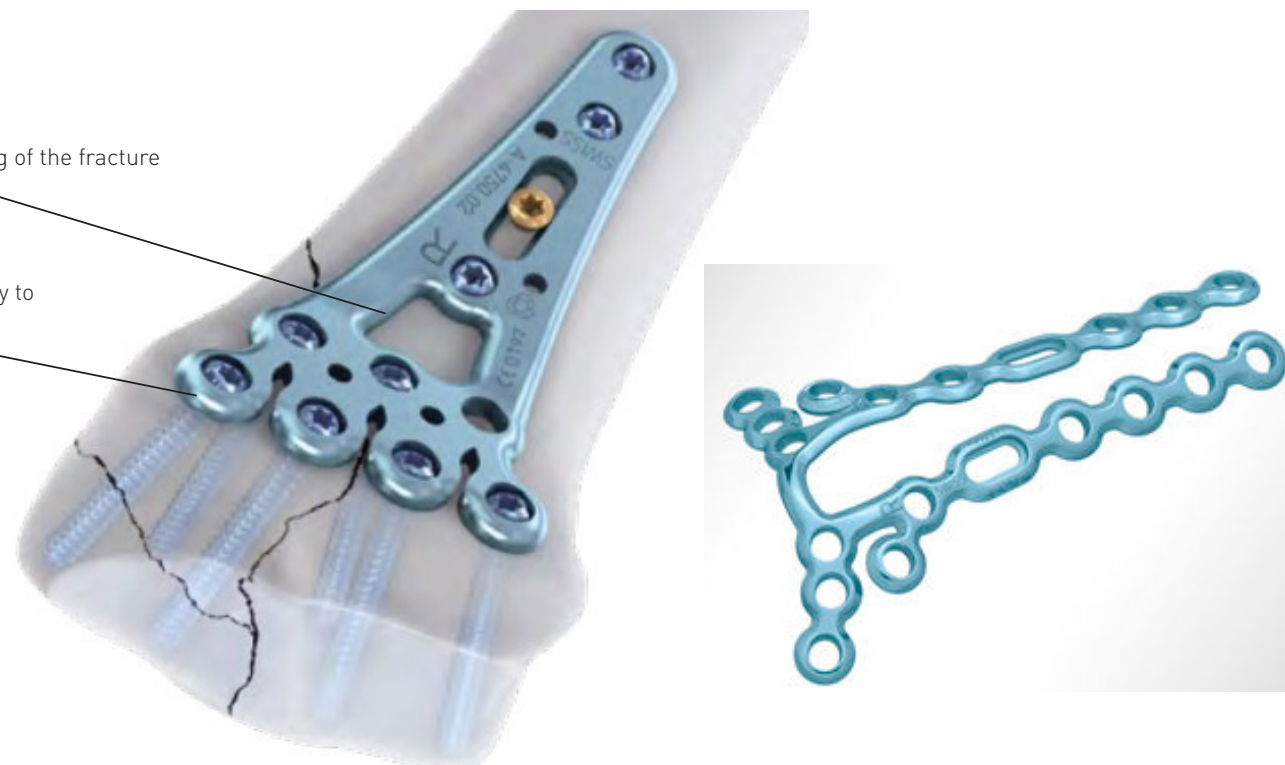
- “Rounded edges and a smooth surface for soft tissue protection”
- “Oblong hole for variable plate positioning”
- Chamfered edges
- Low profile

“Frame design allows for individual adaptation to anatomy”



“Window enables viewing of the fracture position”

“First distal row can be bent individually to match the anatomy”



Benchmark

Bone Fixation Plates on the market

placas de fixação óssea no mercado

Wrist Plating System by



BRIDGE PLATE™

Dimensions: 178mm (11 Hole)

Thickness: unspecified

Screw dimensions: Ø 2.7 or 3.2mm

Technical Features

- “Highly comminuted articular fractures”
- “Metaphysical extension”
- “Tapered edges facilitate plate insertion”

VOLAR PLATE™

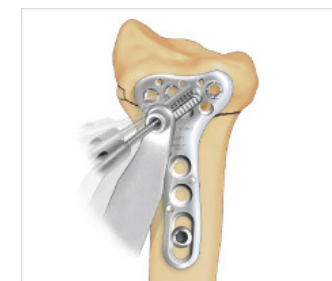
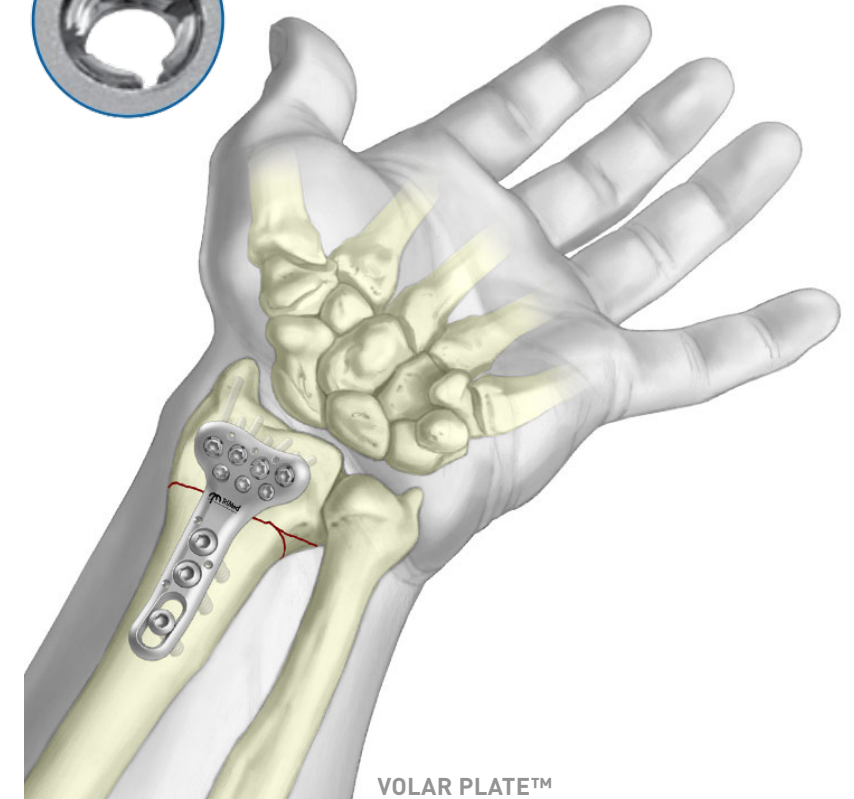
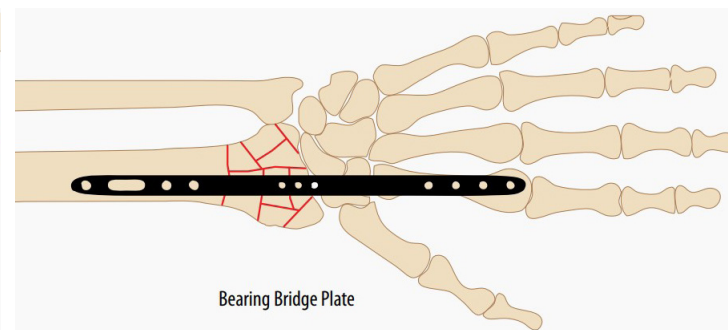
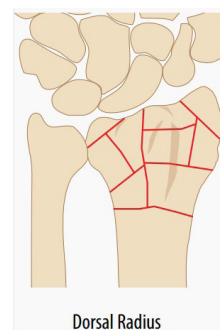
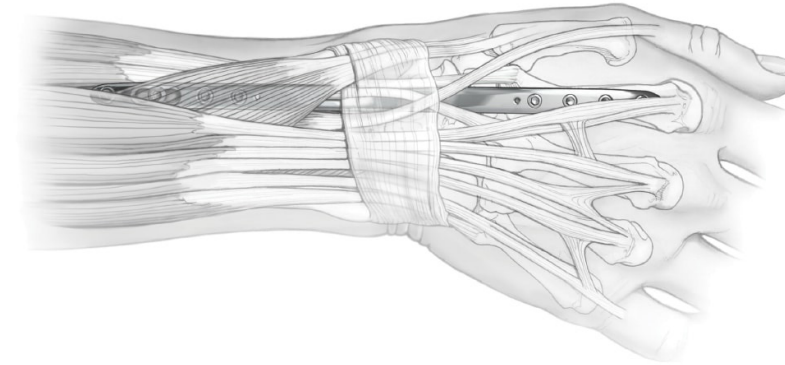
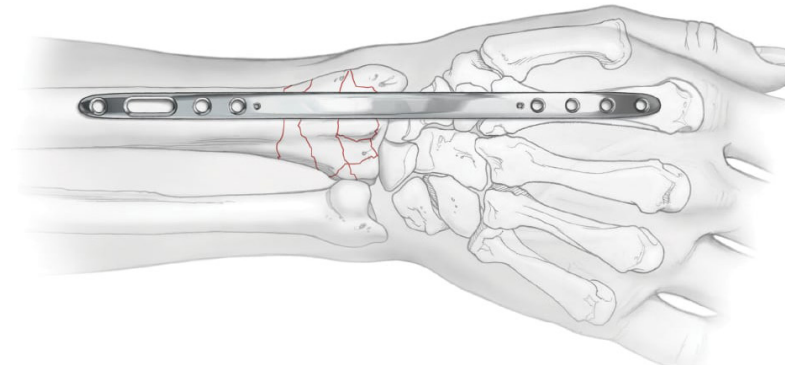
Dimensions: L. 48mm (3 Hole);
50mm (4 hole); 59mm (5 Hole); 72mm (7 Hole);
93mm (9 Hole); 130mm (11 Hole)

Thickness: u

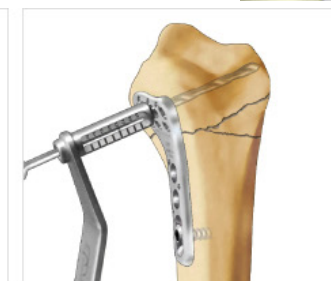
Screw dimensions: Ø 2.7 or 3.2mm

Technical Features

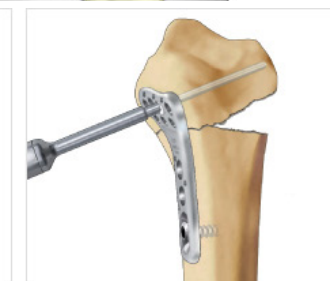
- “Precise method of targeting distal fragments and assuring subchondral support”
- Edge-free contour
- Intra and Extra-articular distal fractures



Aim



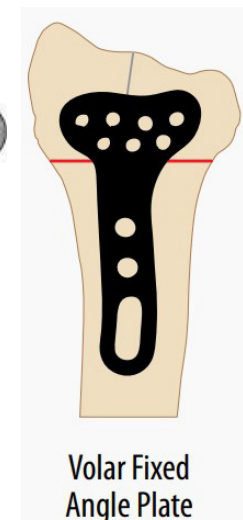
Drill



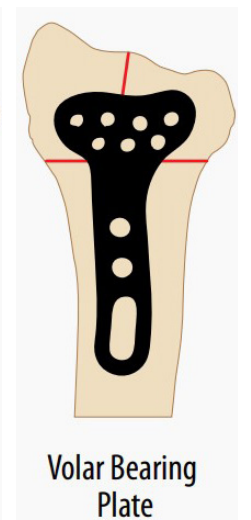
Lock



Final Fixation



Volar Fixed Angle Plate



Volar Bearing Plate

<https://trimedortho.com/portfolio-items/volar-bearing-plate/>

<https://lmtsurgical.com/wp-content/uploads/2019/01/TriMed-Wrist-Fixation-System-Brochure.pdf>

https://www.trimedortho.com/wp-content/uploads/2021/04/LC-72-2000-011-RE-V-D-STM-VolarBearingPlate_W.pdf

Benchmark

Bone Fixation Plates on the market

placas de fixação óssea no mercado

Hand Plating System by



ACUMED® HAND FRACTURE SYSTEM

Dimensions: from 10.0 mm to 60.2 mm

Thickness: 0.8 mm or 1.3 mm

Screw dimensions: Ø 2.0, 2.4 or 3.0mm

OSTEOMED® HAND PLATING SYSTEM

Dimensions: 1.2, 1.6, 2.0, and 2.4 mm

Thickness: 0.8 mm or 1.3 mm

Screw dimensions: Ø 2.0, 2.4 or 3.0mm

Technical Features

- "Acumed's Hexalobe MultiScrew technology eliminates the need for traditional locking and nonlocking screws"
- "[Osteomed's plates] may be cut to length and bent to better fit patient anatomy"
- Low profile
- "Designed to minimize soft tissue irritation while still providing a durable construct"



Benchmark

Bone Fixation Plates on the market

placas de fixação óssea no mercado

Foot Plating System (Metatarsal Fractures / TMT Fusion)
by



FPS® PLATES

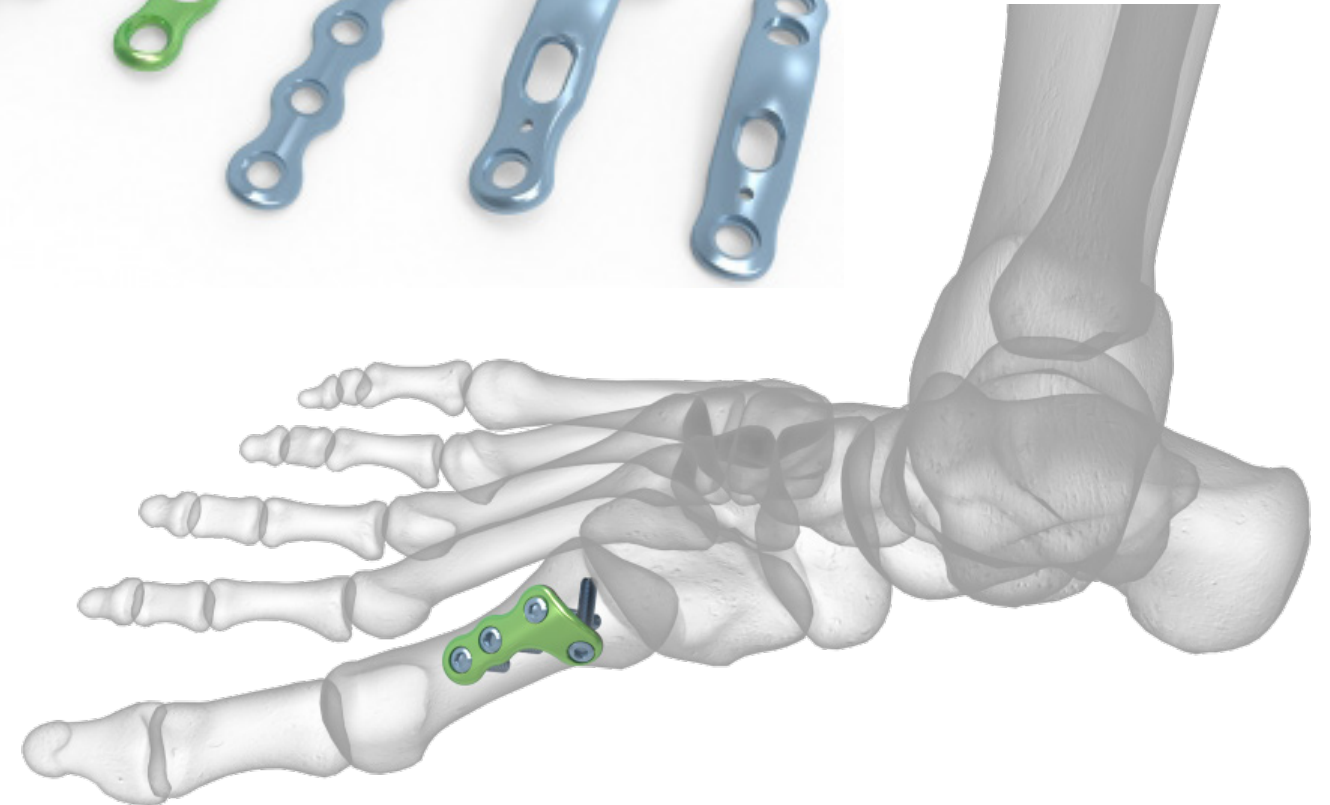
Dimensions: L. from 45 to 84mm

Thickness: 1.0, 1.3, 1.5 or 1.6mm

Screw dimensions: Ø2.7 or 3.5 mm

Technical Features

- “Strong and rigid construct”
- Low profile
- “Transfixation screw technology”
- “Plates also include compression holes for additional stability”



<https://www.acumed.net/products/foot-ankle/forefoot-midfoot-plating-system/>

<https://www.acumed.net/wp-content/uploads/2021/12/OsteoMed-FPS-Brochure-030-1656-C.pdf>

<https://www.acumed.net/wp-content/uploads/2017/12/Acumed-Surgical-Technique-EN-Locking-Forefoot-Midfoot-Plating-System-LEX00-03-D.pdf>

<https://www.acumed.net/wp-content/uploads/2021/03/Acumed-Products-Catalog-EN-Print-GEN00-21-D.pdf>

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Bone Fixation Plates on the market

placas de fixação óssea no mercado

Foot Plating System by



GORILLA® R3CON PLATING SYSTEM

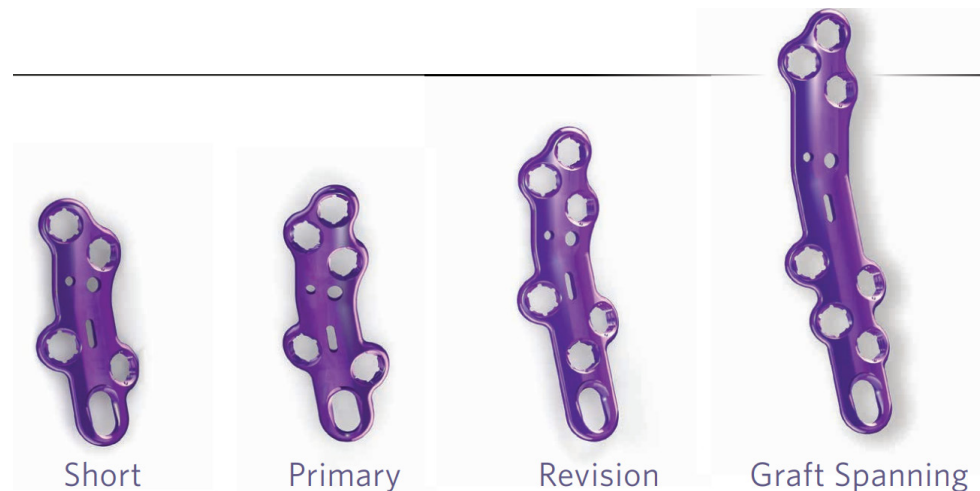
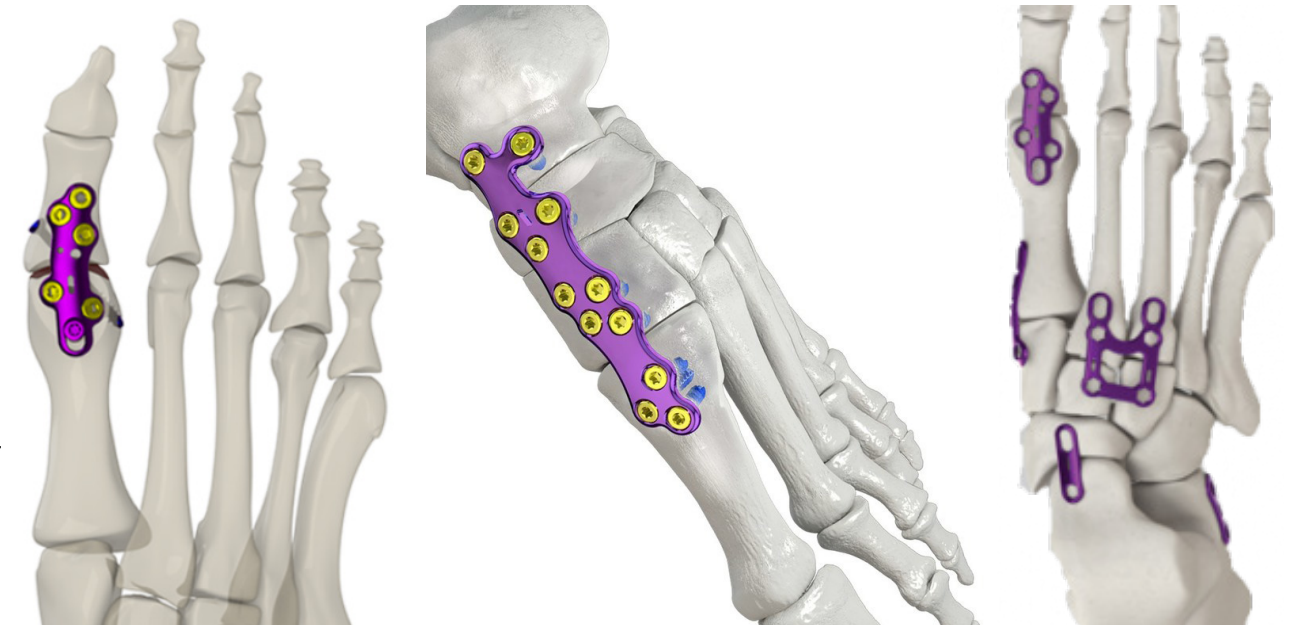
Dimensions: unspecified

Thickness: from 1.3 to 1.6 mm

Screw dimensions: Ø 2.7, 3.5 or 4.2mm

Technical Features

- “Machine contoured from Ti6Al4V-ELI To Maximize Strength”
- “Arthrodesis plates are thicker and provide more holes proximally to avoid previous screw placement”



https://secureservercdn.net/198.71.233.202/xj6.30c.mwp.accessdomain.com/wp-content/uploads/2021/08/P51-STG-0001-RevF_Gorilla-Plating-System_STG_US.pdf

<https://secureservercdn.net/198.71.233.202/xj6.30c.mwp.accessdomain.com/wp-content/uploads/2021/08/GOBR-01-RevF-Gorilla-Brochure.pdf>

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Foot Plating System (*Itval Locking Plates*) by



ITVAL MTP PLATES

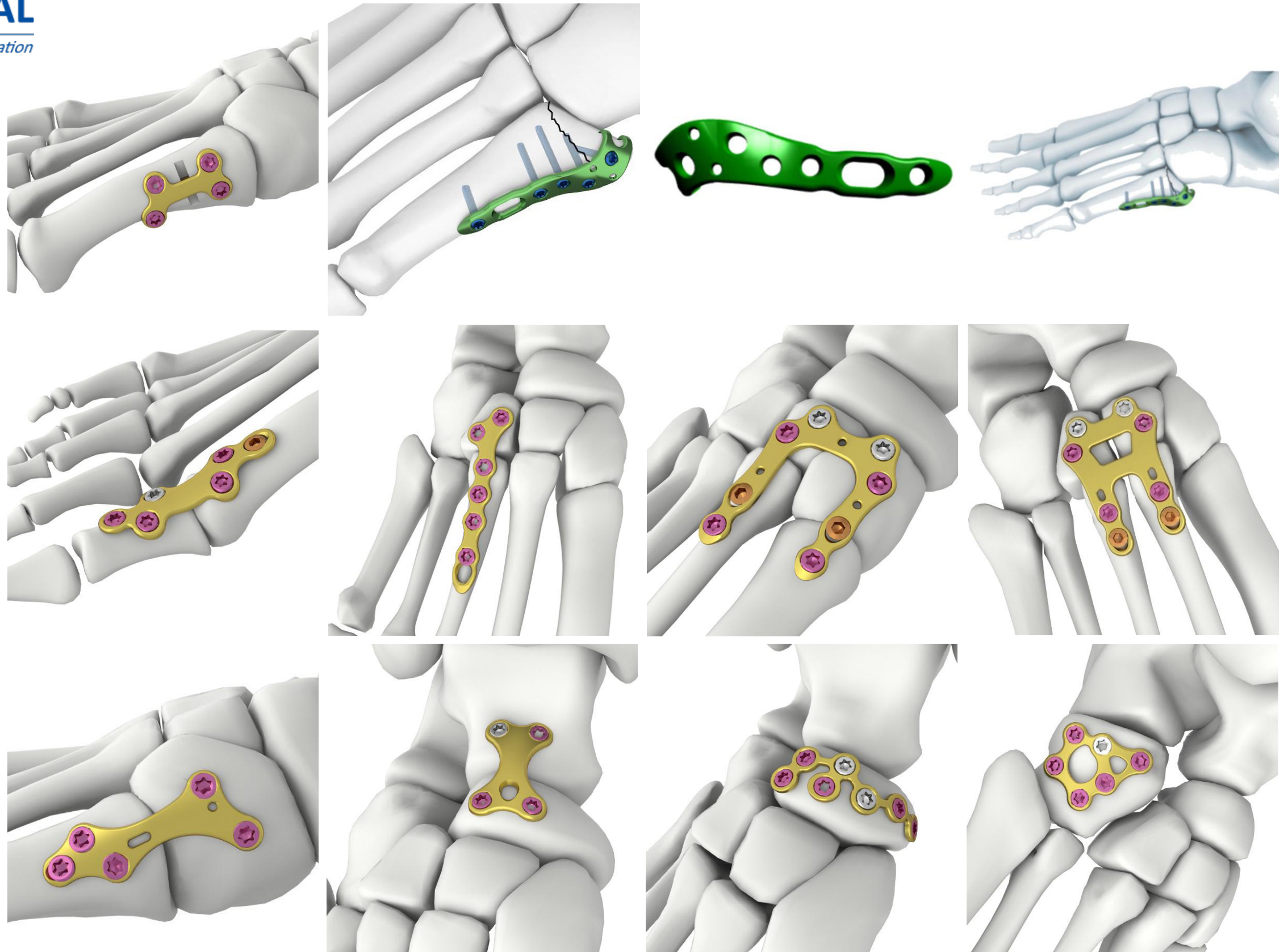
Dimensions: unspecified

Thickness: unspecified

Screw dimensions: $\varnothing$ 2.7, 3.0 and 3.5mm

Technical Features

- "Variable structure"
- "Anatomic low profile design reduces the irritation of soft issues"
- "Titanium alloy materials"
- "Different [screw] diameters and materials provide more clinical choices"



placas de fixação óssea no mercado



DOUBLE MEDICAL
Dedicated to Rehabilitation

MT 3.5mm cortex screw allow for up to a 30 degree cone of angulation.

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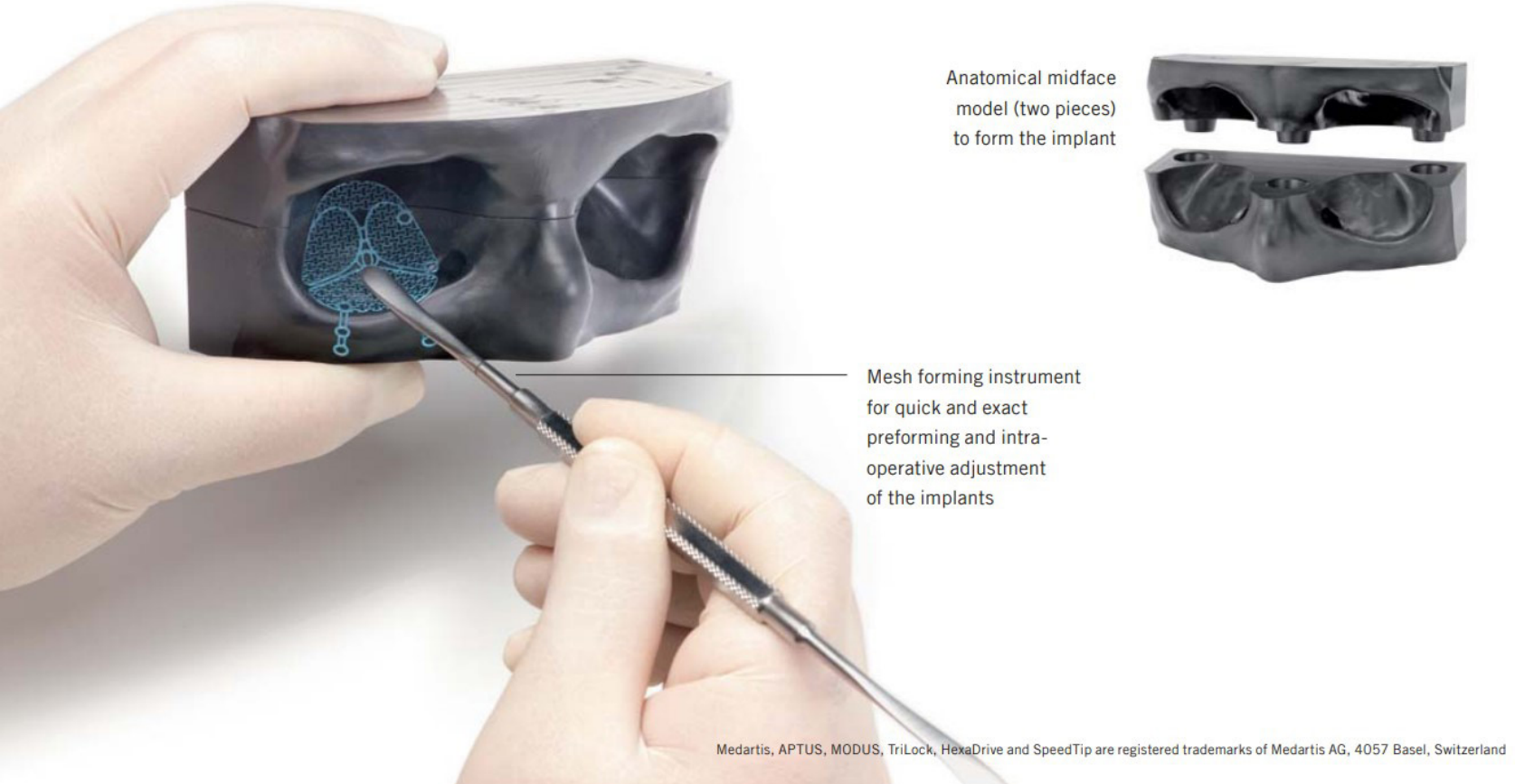
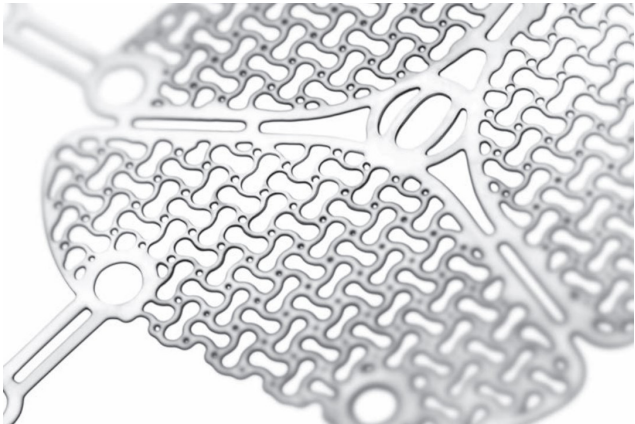
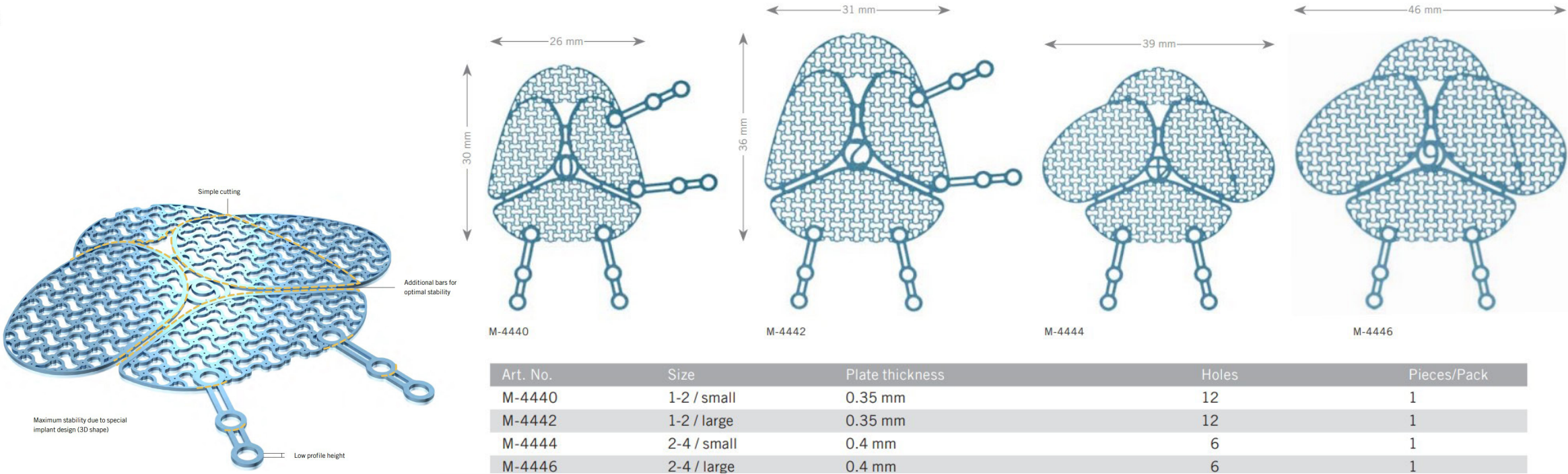
Orbital Plating System by

medartis®

PRECISION IN FIXATION

MODUS® OPS 1.5
Dimensions: “4 different implant geometries covering all fractures of categories I – IV”
Thickness: 0.35-4mm
Screw dimensions: Ø 1.5 or 1.8mm

- Technical Features**
- “The aim of surgical intervention is the anatomical reconstruction of the zygomatic orbital bone structure in order to achieve the correct eye globe position”
 - 3D mesh design
 - Low profile
 - “Additional stabilization bars”
 - “Topologically optimized and offers ideal adaptation to the orbit”
 - “Made from flexible pure titanium”
 - Can be cut before insertion to adjust orbital anatomy to patient’s bone structure



<https://www.medartis.com/solutions/detail/modusr-ops-15/>
https://www.medartis.com/downloadcenter_brochures/product_brochures/EN_UK/MIDFACE-01000001_orbital_plating_system_ops_1.5_product_information.pdf
https://www.medartis.com/downloadcenter_brochures/product_brochures/EN_UK/MIDFACE2-02000001_v0_MODUS_2_Midface_Product_Information.pdf
https://www.medartis.com/downloadcenter_brochures/product_brochures/SP_MEX/MIDFACE-00000007_v1_midface_presentacion_del_producto.pdf

Medartis, APTUS, MODUS, TriLock, HexaDrive and SpeedTip are registered trademarks of Medartis AG, 4057 Basel, Switzerland

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Bone Fixation Plates on the market

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Craneum Plating System by

medartis®

PRECISION IN FIXATION

MODUS® MESH

Dimensions: plates of 50x50mm or 100x100mm

Thickness: 0.1, 0.25, 0.3, 0.4 or 0.6mm

Screw dimensions: Ø1.5 or 2.0mm

MODUS® NEURO 1.5

Diameter: 15, 16, 17, 22, 23, 24 or 25mm

Thickness: 0.6 mm

Screw dimensions: Ø1.5 or 2.0mm

Technical Features

- 14 different mesh types
- 3D mesh design
- Low profile
- Hard or semi-rigid Titanium (ASTM F67)
- “All of the titanium material used is biocompatible, corrosion-resistant and non-toxic in a biological environment”
- “The instruments are made of stainless steel, PEEK, aluminum or titanium”

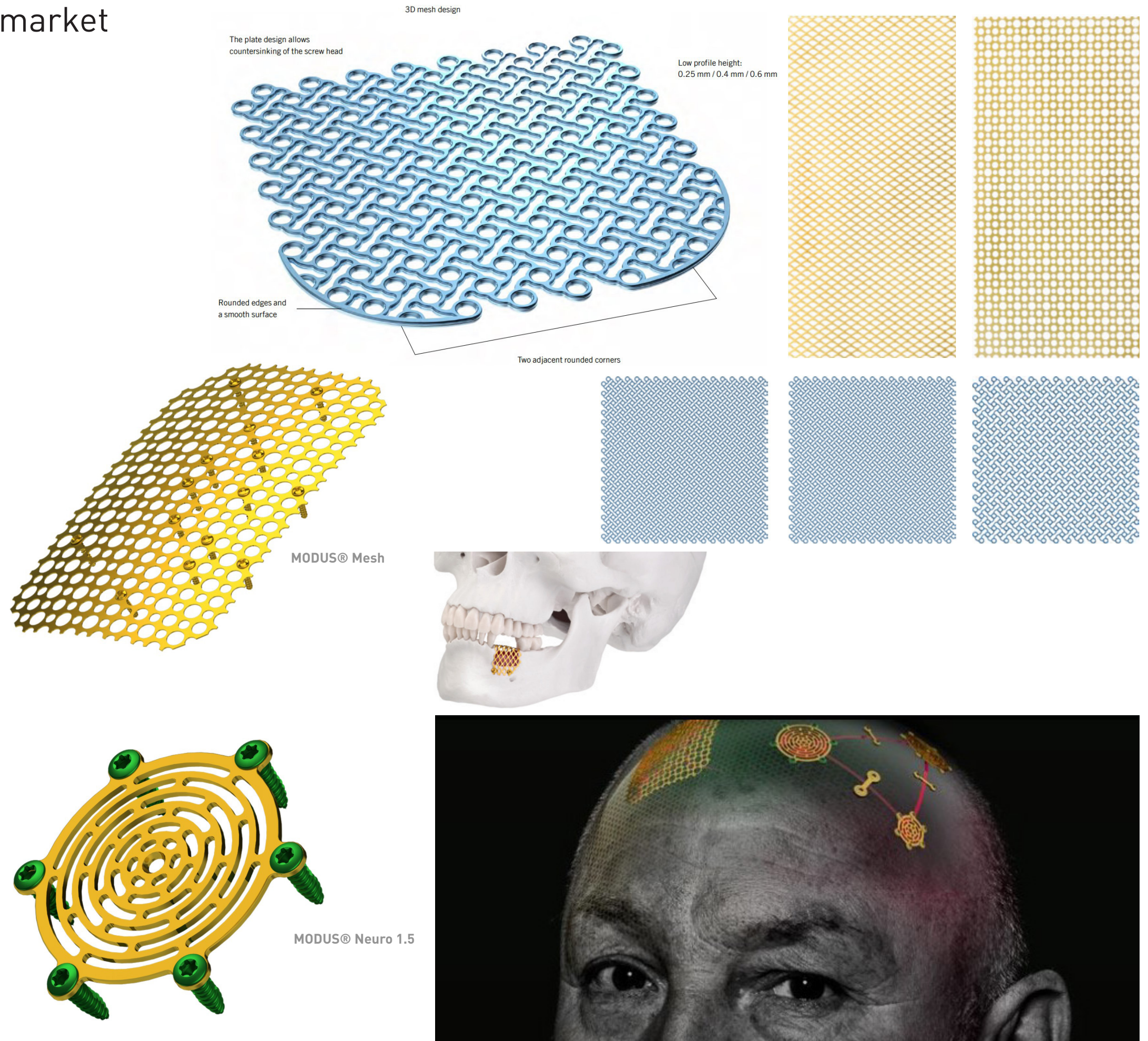
<https://www.medartis.com/solutions/detail/modusr-mesh/>

<https://www.medartis.com/solutions/detail/modusr-neuro-15/>

https://www.medartis.com/downloadcenter_instructions/instructions/Modus_Cranium/EN_UK/CRANIUM-02010001_cranium_0.9-2.0_step_by_step.pdf

https://www.medartis.com/downloadcenter_brochures/product_brochures/EN_UK/MANDIBLE-02000001_speedtip_self_drilling_screws_1.5_2.0_product_information.pdf

https://www.medartis.com/downloadcenter_brochures/product_brochures/SP/MODUS-00000013_v0_modus_vista_general_de_los_productos.pdf



Benchmark

Bone Fixation Plates on the market

placas de fixação óssea no mercado

Maxillofacial System by



ORBITAL FLOOR PLATES

Dimensions: "3 new shapes: anatomical 'guitar pick', fan and preformed"

Thickness: 0.2, 0.5, 1.2 or 1.6mm

Screw dimensions: Ø1.2mm

Angled Locking Reconstruction Plates

Dimensions: unknown

Thickness: 2.0 or 2.8mm

Screw dimensions: Ø2.0 or 2.4mm

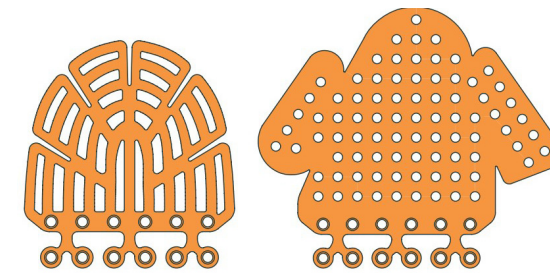
Technical Features

- "Completely customizable with individual plate and screw tags"
- "Offer space to include larger meshes, orbital floor plates, and optional instrumentation"

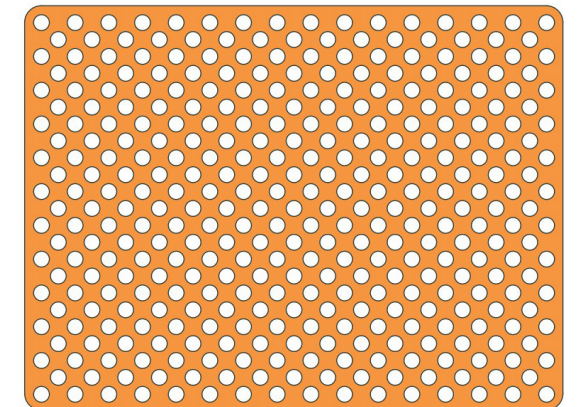
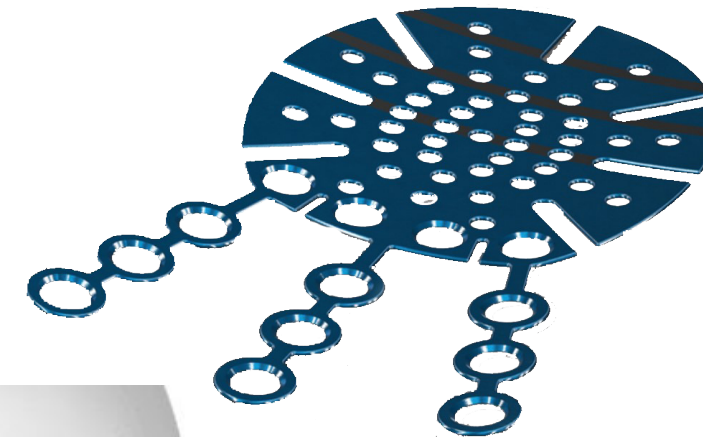
<https://www.acumed.net/wp-content/uploads/2021/11/OsteoMed-ICON-Brochure-030-1896-A.pdf>

<https://www.acumed.net/wp-content/uploads/2021/11/OsteoMed-ICON-Catalog-030-1897-B.pdf>

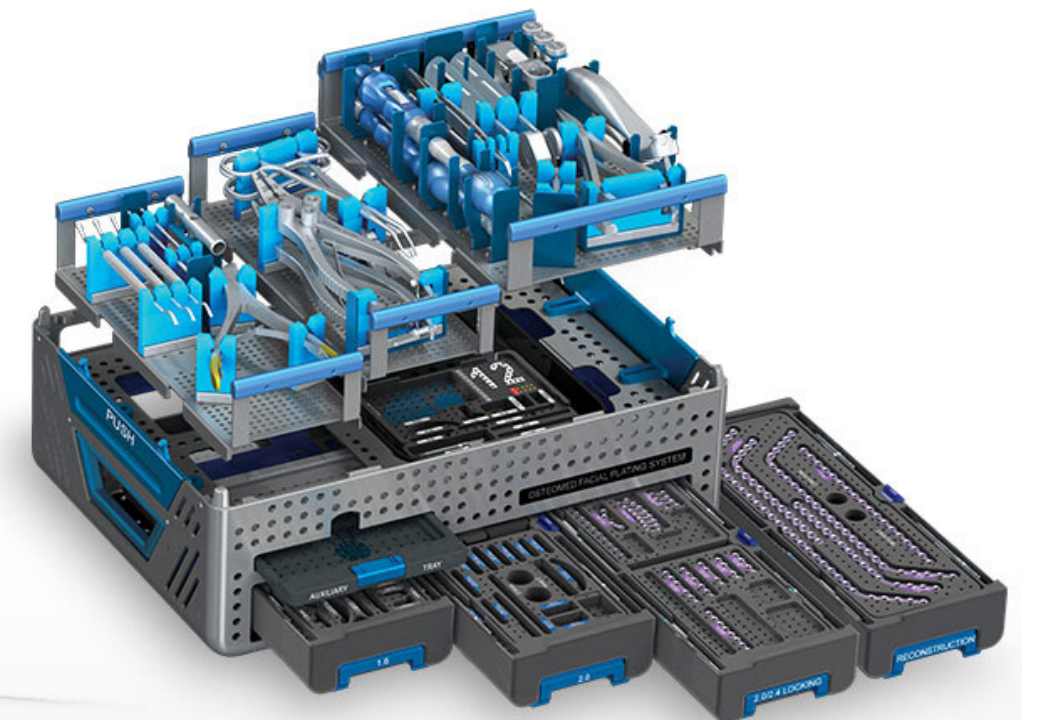
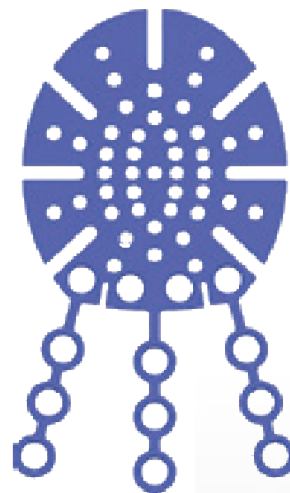
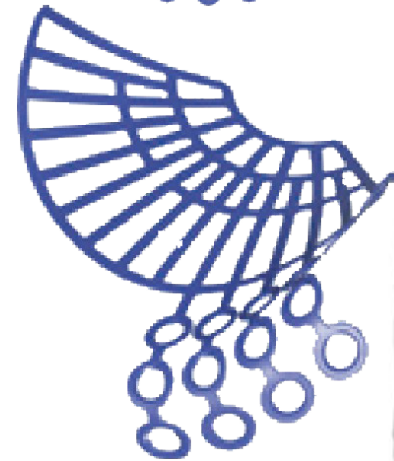
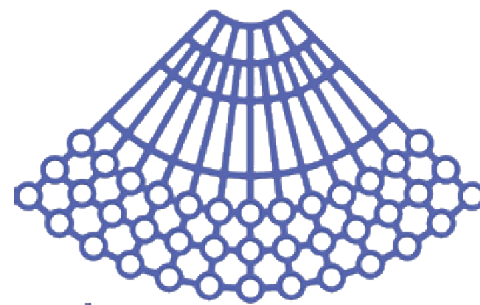
<https://www.acumed.net/products/craniofacial/icon-facial-plating-system/>



Orbital Plate
Orbital Floor Plate, Large



37 x 50mm Mesh Plate



Benchmark

Bone Fixation Plates on the market

placas de fixação óssea no mercado

Maxilofacial System by



KALEIDO MIDFACE SYSTEM

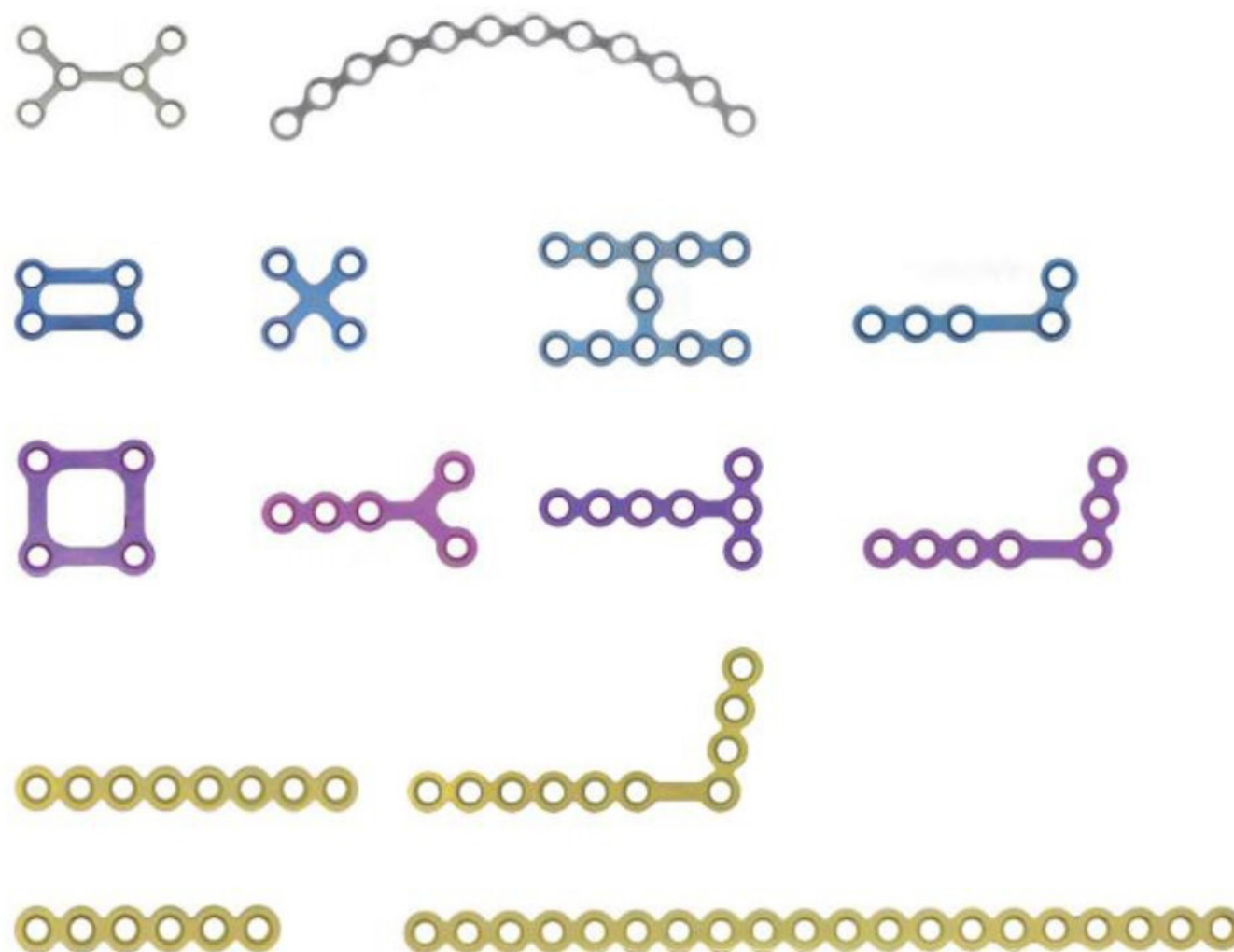
Dimensions: “include Micro plates, Medium plates, Mini plates, and Large plates”

Thickness: 0.4, 0.5, 0.7 or 0.8mm

Screw dimensions: Ø1.5 or 1.8mm

Technical Features

- “Midface plating system is intended for use in selective trauma of the midface and craniofacial surgery; reconstructive procedures and selective orthognathic surgery of the maxilla and chin”
- “All plates work with one screw diameter”
- Low profile
- Plates and screws are made of Titanium Alloy
- “Different colors mark different thicknesses”



Micro plates, **Silver**
- Indications: Nasal, orbital, and frontal region.
- Midface plates 0.4mm



Medium plates, **Pink**
- Indications: Nasal, orbital, zygoma, and maxillary region.
- Midface plates 0.7mm



Mini plates, **Blue**
- Indications: Nasal, orbital, zygoma, frontal, and maxillary region.
- Midface plates 0.5mm



Large plates, **Gold**
- Indications: Central and lateral midface, zygoma region
- Midface plates 0.8mm