

austofix **Foot and Ankle**

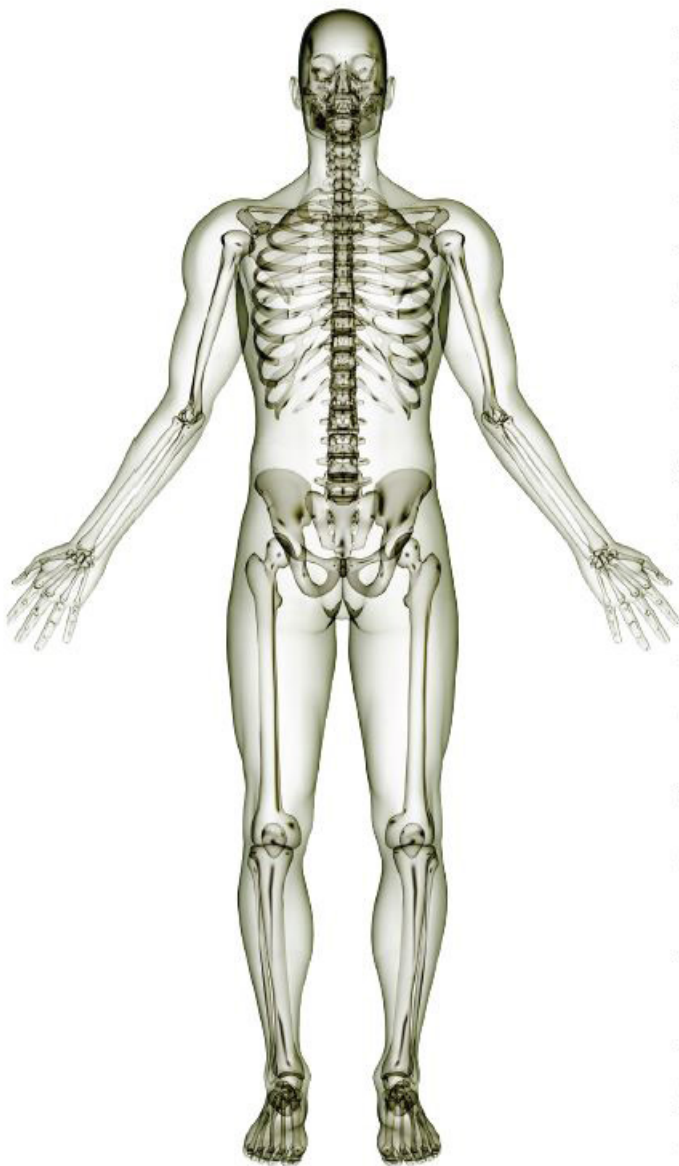
2.7mm & 3.5mm Plates

Surgical Technique



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Austofix is a leading manufacturer and designer of orthopaedic trauma medical devices with a particular focus on innovation, excellence and patient safety. Austofix has the expertise and experience in developing a new device from concept to a fully Commercialised product with regulatory approval for world-wide distribution.

Throughout its 20+ years Austofix has gathered a team of world-class research and development specialists. Together with orthopaedic surgeons, our specialists identify emerging techniques and innovations in the field of orthopaedic trauma and develop world-class solutions.

Austofix is now one of Australia's key contributors to the world-wide medical technology industry. By focusing on specific market needs we can leverage our staff expertise to develop effective solutions and successfully compete on the world stage.

We understand that accidents don't wait to happen, so we ensure that our equipment and devices are ready when needed. With a dedicated 24 hour, seven day a week customer service and sales team, Austofix products are ready when you are.

With our focus on trauma we understand the specific needs of trauma surgeons. Our product specialists actively support the surgeon by being on call to support procedures and offer advice.

Austofix products and innovations assist the surgeon in performing accurate, efficient and safe procedures that result in better health outcomes for the patient.

The measurement of our success is seen through our excellent clinical results and positive surgeon feedback. We understand the need for efficiency during operations and that this is key in improving patient outcomes. Our products and tools are designed to minimise time spent in theatre. Furthermore, all clinical feedback of our products is promptly addressed to ensure product refinements reflect all surgical concerns.

For further information, updates and contact details visit austofix.com.au and follow us on [LinkedIn](#).

Disclaimer

This document is intended to be read by experienced orthopaedic surgeons familiar with plate fixation

This document is intended as the recommended procedure for using the Foot and Ankle Plate system. It offers guidance only. Each surgeon should consider the particular needs of the patient and make appropriate adjustments where necessary.

For further advice please contact your local Austofix representative.
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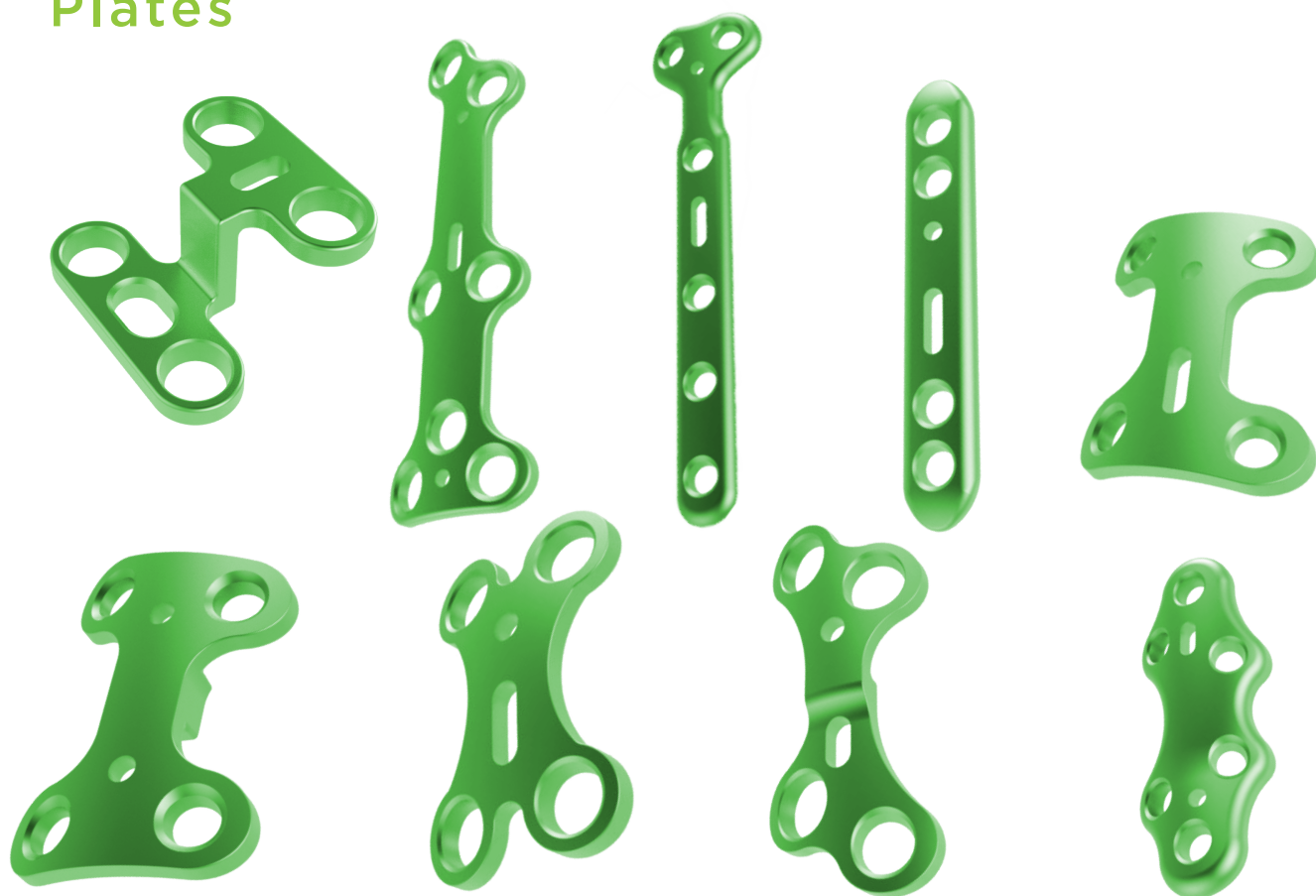
austofix Foot and Ankle 2.7mm & 3.5mm Plates

The Austofix Foot and Ankle Locking Plates provide surgeons with a complete fixation system for the many complex fracture patterns found in the foot and ankle including the hindfoot, midfoot and forefoot.

The titanium plates and screws incorporate significant design advantages, facilitating surgical accuracy and efficiency and delivering better patient outcomes.

Austofix understands the importance of proven, high quality medical devices and instruments. The Foot and Ankle Locking Plates adhere to these principles and will provide the surgeon with a comprehensive foot and ankle fixation solution.

Plates



Screws



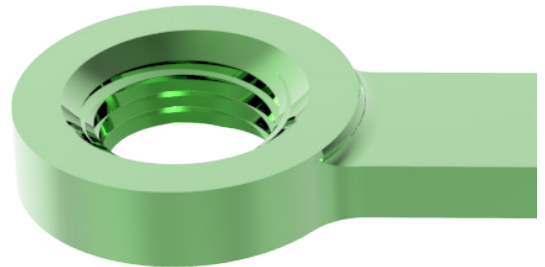
Implant Features

Plates

Threaded Hole

The Threaded Hole allows for a range of plate fixation options. The holes accommodate Cortex and Locking Screws.

- » Locking Screws link with the threads in the Threaded Hole, keeping the Screw at a fixed angle.
- » Multiple points of fixation to allowing the plate to buttress fragments.



K-Wire Holes and Compression Slots

The Compression Slot enhances the placement of the osteotomy site to increase the stability of the implant and bone construct. The holes allow for stabilisation of the implant using k-wires over joint areas.

- » Designed to minimize additional soft tissue dissection.
- » Assists with final screw fixation after compression.
- » Used as preliminary fixation between the plate and bone.

K-Wire Hole



Compression Slot

Tapered End

Tapered end assists in submuscular plate insertion and helps to minimise tissue trauma.



Screws

Locking Screw

- Self-Tapping
- Reduced Screw Backout
- Unicortical or Bicortical Fixation



Cortex (Cortical) Screw

- Dynamic Compression
- Compression
- Self-Tapping



Plate Features

Forefoot and Hindfoot Universal Locking Plate

Anatomical Fit

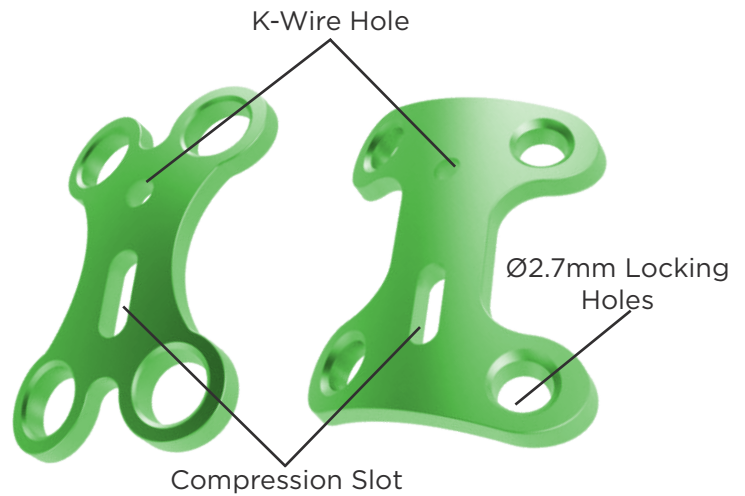
- » Pre-contoured for anatomical fit for Middle foot and Fore/Hindfoot.
- » Low-profile with smooth edging to allow for minimal irritation of soft tissue.
- » Forefoot plate has a parallelogram plate shape for converging screws.

Plate Fixation

- » Converging screws allows for stable fixation between the bone and plate construct.
- » Provides stable fracture fixation while preserving vascular supply to accelerate bone healing.

Clinical Indications

- » Forefoot Universal locking plates designed for forefoot osteotomies and midfoot/forefoot fusion osteotomies (metatarsal and cuneiform/cuboid).
- » Hindfoot Universal locking plates designed for hindfoot osteotomies and midfoot/hindfoot fusion osteotomies (Talus and Navicular).



Wedge Shape and Metatarso phalangeal Locking Plate

Anatomical Fit

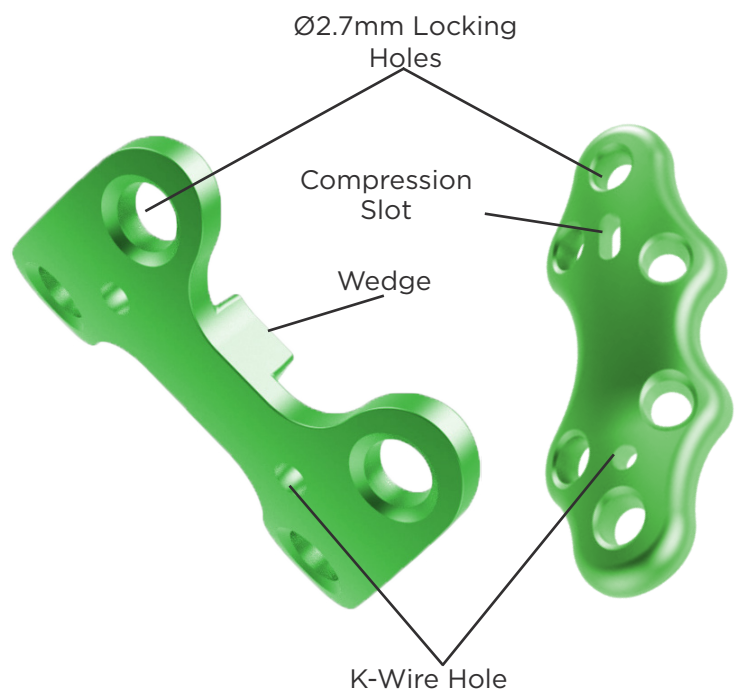
- » Pre-contoured for anatomical fit for 1st metatarsal open osteotomy (wedge).
- » Pre-contoured for anatomical fit for thumb metatarsal and phalange articular fusion as well as for slight valgus or plantar positioning of the 1st metatarsal based on plate positioning (Metatarso phalangeal).
- » Low-profile with smooth edging to allow for minimal irritation of soft tissue.

Plate Fixation

- » Converging Screws that allows for stable fixation between plate and bone complex.
- » Allows for distraction, compression and osteotomies.

Clinical Indications

- » Wedge Shape locking plates designed to address the metatarsal open osteotomy for bunion correction.
- » Provides fixation to the 1st metatarsal as an open wedge osteotomy through an integral spacer.
- » Metatarso phalangeal locking plates designed to address metatarsal and phalangeal extra-articular fractures through articular fusion as well as the dorsomedial orientation of the medial cuneiform and 1st metatarsal.



Straight Locking Plate and Locking Plate (Foot)

Anatomical Fit

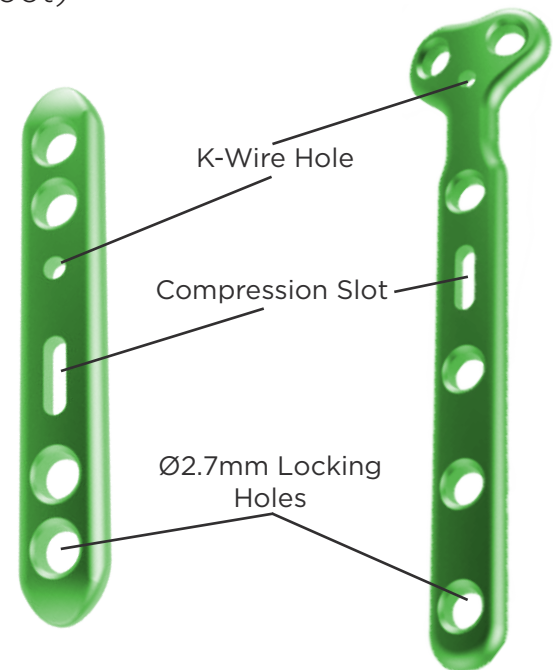
- » Pre-contoured for anatomical fit for Lisfranc joint complex between metatarsals and cuneiforms/cuboid. (metatarsocuneiform joint).
- » Low-profile with smooth edging to allow for minimal irritation to soft tissue.
- » Tapered end assists in submuscular plate insertion and helps to minimise tissue trauma.

Plate Fixation

- » Provides stable fracture fixation while preserving vascular supply to accelerate bone healing.

Clinical Indications

- » Straight and foot locking plates addresses fractures in the midfoot and forefoot at the cuneiform or cuboid and the metatarsals as lisfranc joint intra-articular fixation or fusion.



Calcaneus, Hindfoot Reconstruction, and Trapezoidal Shape Locking Plate

Anatomical Fit

- » Pre-contoured for anatomical fit for 1st metatarsal and cuneiform at the metatarsocuneiform joint (Trapezoidal Shape).
- » Pre-contoured for anatomical fit between 1st metatarsal (hallux) and navicular (Hindfoot Reconstruction).
- » Pre-contoured for anatomical fit for calcaneus osteotomy (Calcaneus).
- » Low-profile with smooth edging to allow for minimal irritation to soft tissue.

Plate Fixation

- » Provides stable fracture fixation while preserving vascular supply to accelerate bone healing.
- » Convergent Screws inserted into the plate improves plate fixation and stability.
- » Dynamic Slot used for temporary fixture and slide osteotomy with cortex screws or K-Wires.

Clinical Indications

- » Calcaneus locking plate designed to address displacement osteotomy of the calcaneus as slide osteotomies and providing management and positioning of the posterior calcaneal fragments medially.
- » Trapezoidal shape locking plate designed to address fixation as fusion between the 1st metatarsal and cuneiform joint to counter ray shortening.
- » Hindfoot reconstruction plate addresses medial column reconstruction for the fusion of the distal end of the navicular bone, cuneiform and the proximal end of the 1st metatarsal.

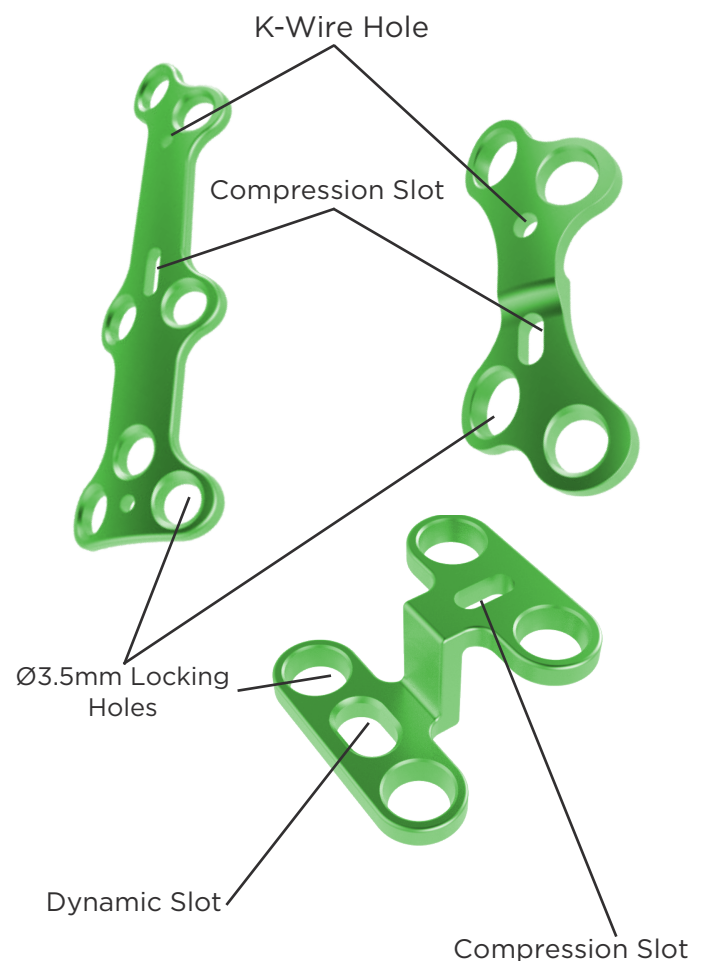
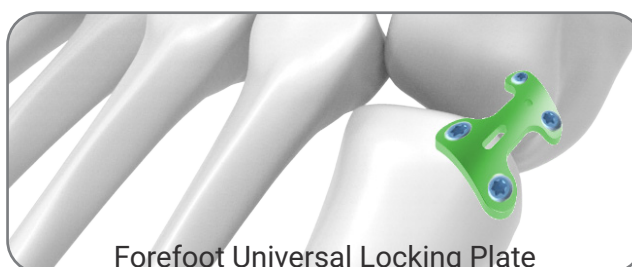
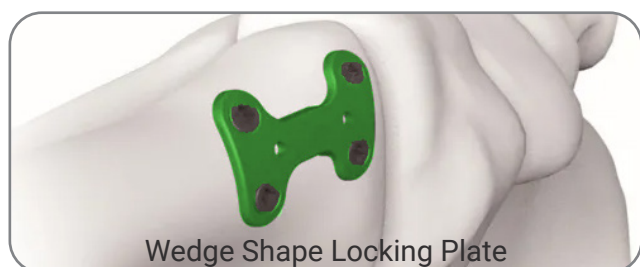
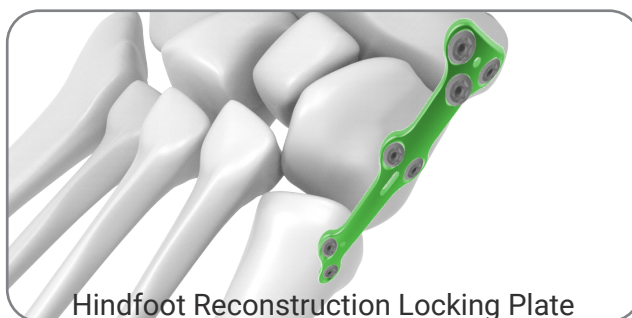
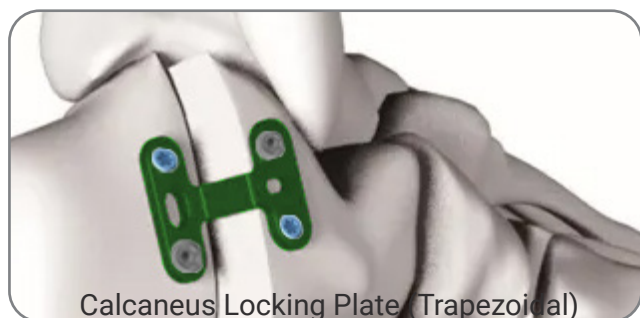
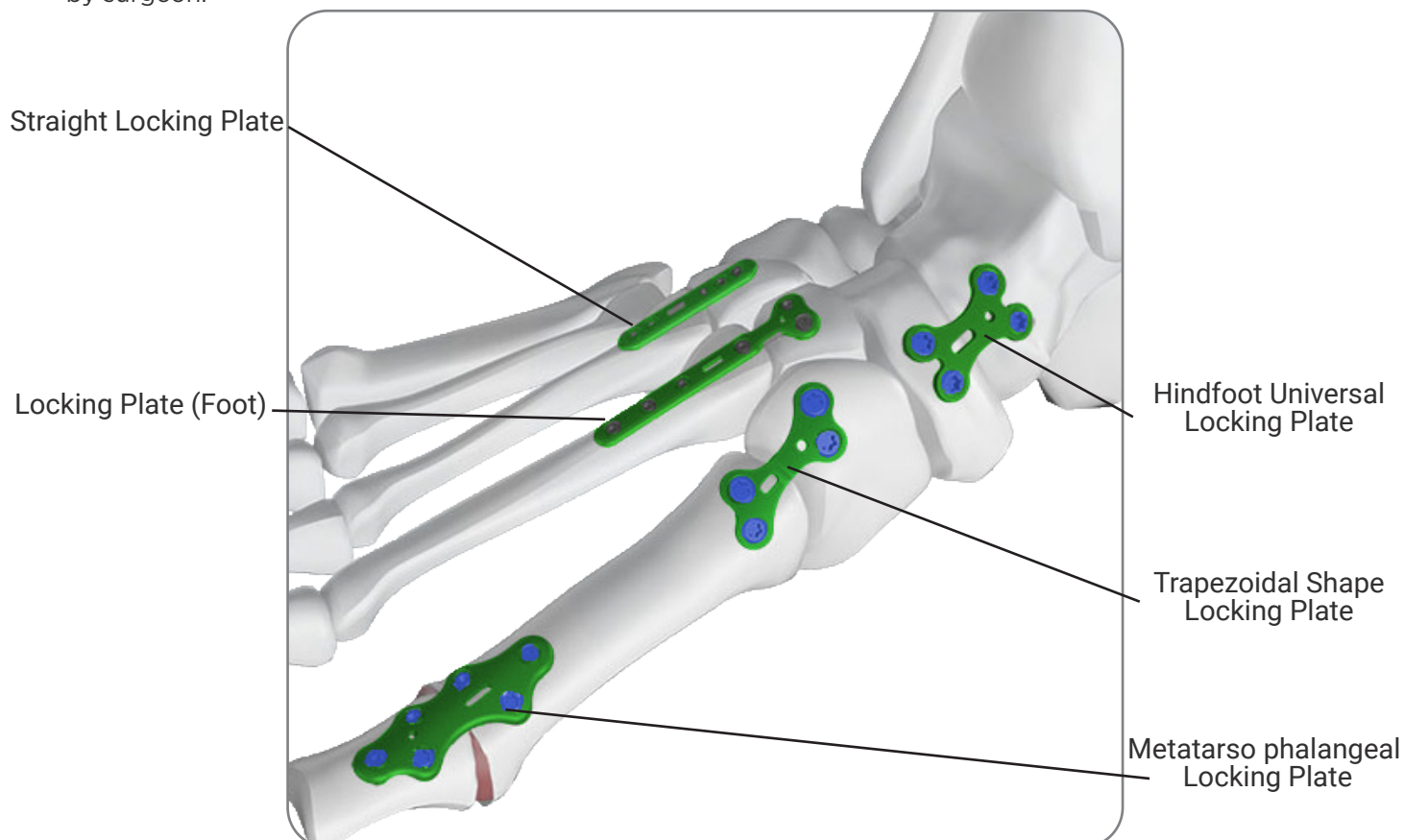


Plate Range

This surgical technique applies to the following locking compression plates. Plate selection is determined by surgeon.



Screw Range

Locking Screw



Cortex Screw



Surgical Technique

Preparation & Plate Selection

Preoperative radiographic assessment is required to determine plate selection. Additionally, the Plate can be contoured to mould to the bone using the supplied Plate Benders (112100002/3). If there is misalignment for the foot, realign using K-wires.

Patient Positioning

The patient should be placed in varying positions depending on the location of the fracture and the necessary approach. For dorsal approaches, a supine position is recommended while a medial approach would require lateral decubitus positioning. For metatarsal phalangeal joint (MTP) arthrodesis, a flat sterile surface can be used on the bottom of the foot to measure the dorsiflexion in a supine position.

Incision/Approaches

Depending on the placement of the plate based on the treatment type, a dorsal longitudinal, dorsal-medial or a medial approach to the 1st metatarsal can be done. For the calcaneus locking plate (Trapezoidal), a lateral incision would be made to expose the calcaneus. An L-shaped incision can be carried out to expose the implant site. Create the displacement osteotomy using a saw blade through the calcaneal.

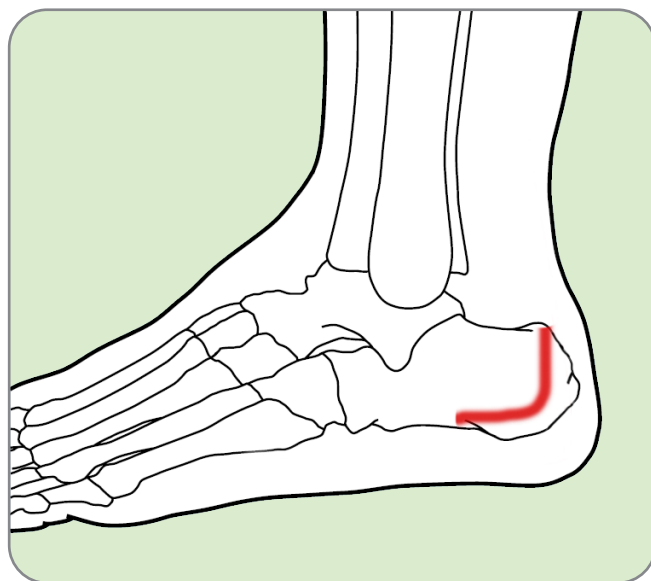
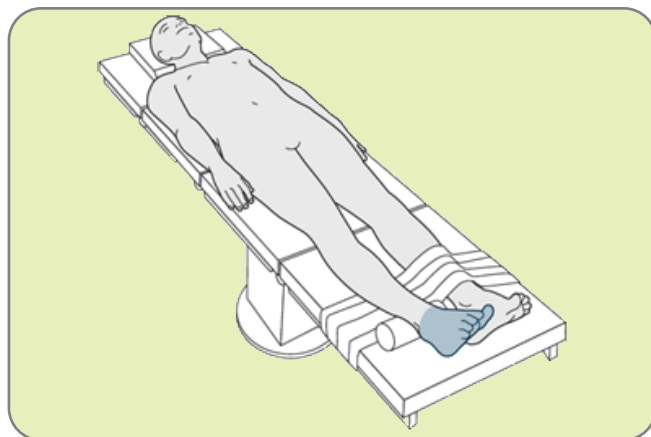
A medial approach can be made for the Hindfoot Reconstruction Locking Plate to expose the navicular, 1st metatarsal and cuneiforms. For the wedge shape locking plate, make the appropriate incision for the appropriate approach such as a medial approach for medial side of the metatarsal. The incision can be between 1-1.5cm. The incision for the hindfoot universal locking plate can be extended to the cuneiforms, 1st metatarsal base, naviculocuneiform and intertarsal joints.

A dorsal incision is recommended for the fixation or fusion of the cuneiform/cuboid and the lesser metatarsals (2nd-5th). The length of the incision would be dependent on the length of the plate that would be implanted as well as the type of fracture or misalignment that would be treated.

Appropriate Hohmann Retractors (112100006/7) are needed to expose the incision laterally. Use K-wires to assist with debridement and fixation of the plate to the bone when necessary.

Bone Needle Distractors (111220032) are recommended for the wedge shape locking plate when required to be used in K-wire holes.

Note: Avoid extended periods of retraction, especially in the presence of K-Wires. Avoid damage to neurovascular structure and tendons.



Bone Removal

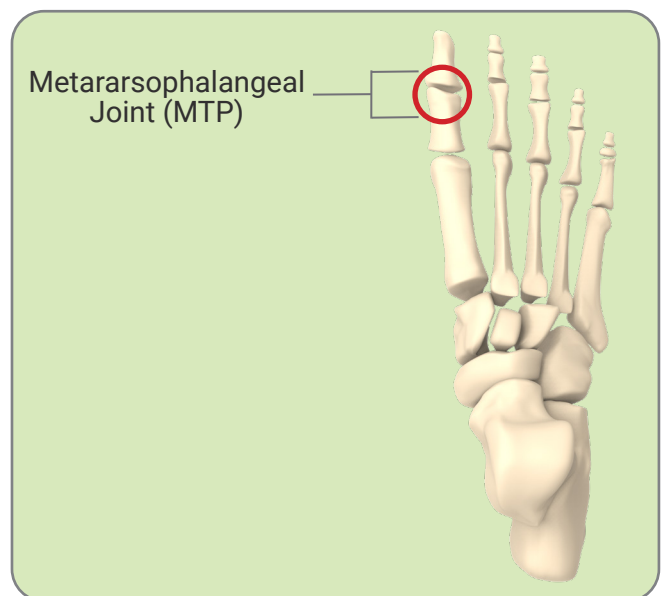
Removal of the bone can be done by using the appropriately sized bone chisel (111220019/20/26). This would be used in conjunction with the bone hammer (111220025) to cut through and remove any bone if necessary.

Bone rongeurs (111220030/1) can also be used to gouge the bone out. This would allow for holes to be made in the bone as well as remove any unneeded bone construct. It can also be used to remove soft tissue near the bone.

Joint Exposure of MTP

A linear capsule incision can be done to expose the proximal and distal heads of the joints such as the 1st metatarsal head and proximal phalanx base of a MTP joint. Plantar flex the phalanx down to expose the joint if necessary.

Note: Isolate and retract the superficial nerve and vessel prior to flexing of the joint capsule using appropriate Hohmann retractors.

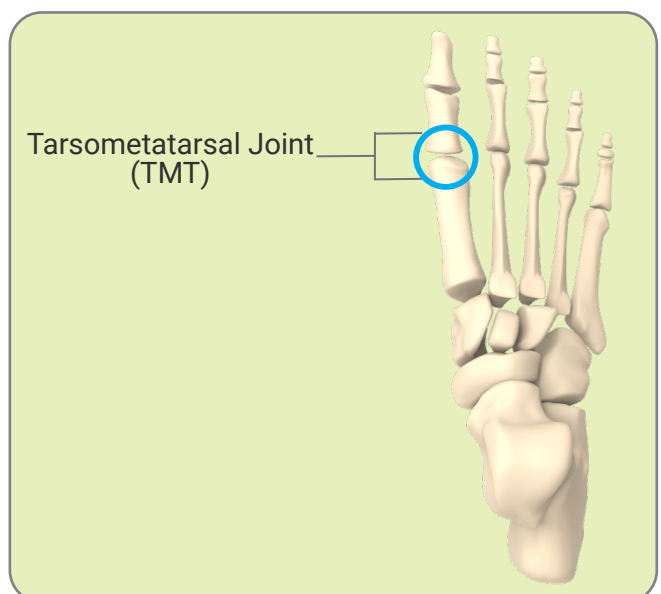


Joint Exposure of TMT

For Trapezoidal Shape Locking Plate, a dorso-medial or dorso longitudinal approach to the proximal 1st Tarsometatarsal (TMT) joint. The incision would be made medial to the extensor hallucis longus (EHL) tendon extending 2-3cm on either side of the joint. The neurovascular structures that are overlying the joint would need to be identified and protected by isolating and retracting the superficial nerve and vessel.

Deepen the incision through the connective tissue of the fascial layer to the dorsal capsule of the TMT joint. Release the EHL from the joint and retract laterally after a blunt dissection.

Confirm the location of the joint either through fluoroscopy or directly and mark the location using a K-wire. A distractor (111220028/9) can be used for easier joint debridement.



Removal of Cartilage

Removal of the cartilage on the incision site can be done using osteotomes of appropriate sizes (6-26mm) and bone curettes (4-8cm). Refer to the table to the right.

For joint fusion, remove cartilage thoroughly until dense subchondral bone is fully exposed on either side of the joint and perforate the subchondral bone plates with a small diameter drill or k-wire until rich cancellous bone is reached and visible.

Note: By surgeon's discretion, for 1st TMT joint, intermetatarsal joints between 1st and 2nd bases can be prepared to allow for lateralization for additional fusion surface and stability.

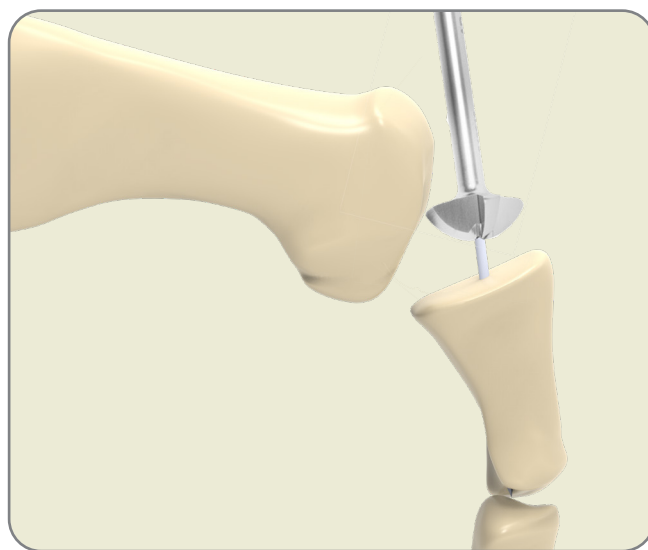
Instrument	Product Code
Curette 4mm	111220034
Curette 6mm	111220036
Curette 8mm	111220044
Osteotome 6mm	111220002
Osteotome 10mm	111220021
Osteotome 14mm	111220022
Osteotome 28mm	111220023
Osteotome 22mm	111220024
Osteotome 26mm	111220043

Phalange Preparation

Phalange Reamers that are concave and convex are used to prepare articulating joint surfaces for fusion such as the phalange and metatarsal joint. For reaming to occur, plantar flex the joint down to expose it. Plantar flexing the hallux would allow for the concave reamer to be used after inserting a 1.6mm K-wire into the 1st metatarsal head or phalanx. A cheilectomy may be necessary to remove impinging bone on the metatarsal head. Select the appropriate reamer, starting from the largest size to the smallest and slide reamer over the K-wire and ream to remove the cartilage on the joint.

Reaming of the joint allows for any desired alignment to be achieved without altering the dorsiflexion or valgus alignment when one is changed such as the rotation of the joint.

Warning: Ream only to remove the cartilage and expose the joint to avoid shortening of the bone and joint.



Contouring & Plate Preparation

If contouring is required, Flat Pliers (111210012) should be used and avoid bending over the threaded holes.

Warning: Do NOT bend the plate beyond what is required to contour with the bone. Reverse bending, over bending, using the incorrect instrumentation for bending or bending at the level of the holes may lead to plate failure.

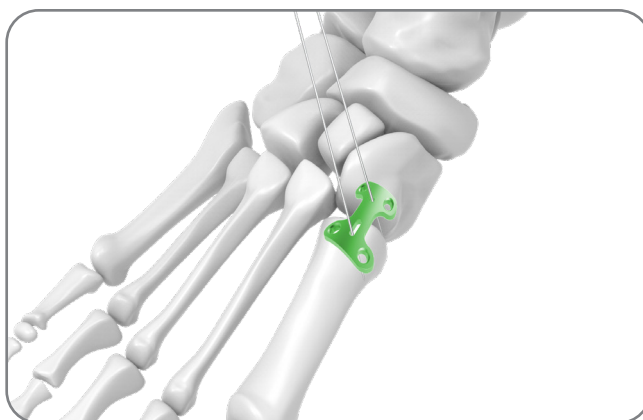
Reduce the Fracture

Reduce the fracture using the image intensifier, K-Wires* and/or reduction forceps. Ensure that the reduction instrumentation will not interfere with plate placement.

If there is misalignment present for the foot, K-wires can be used. If there is significant damage to the tissue, in the joints for fusion/fixation, the cartilage remaining can be removed.

* **Note:** 1.4mm (511415), 1.6mm (114200003) and 2.0mm (522015) K-Wires are available for fracture reduction.

Bone Needle Pressure Clamps (111220033) can be used in conjunction with K-Wires to reduce the fracture or for joint fusion.



Distraction of Bone/Joint

Distraction of the bone can be conducted by creating an incision using an appropriately sized osteotome on the bone. Distractors (111220028/9) can be used to distract the incision. Alternatively, the bone needle distractor (111220032) can also be used with K-wires to distract the joint. An osteotome can be used to pry open perpendicular osteotomy for wedge shape locking plates.

Compression Screws

Cannulated Compression Screws (Ø3.0 - Ø7.3mm) are available for interfragmentary compression and fracture fixation.

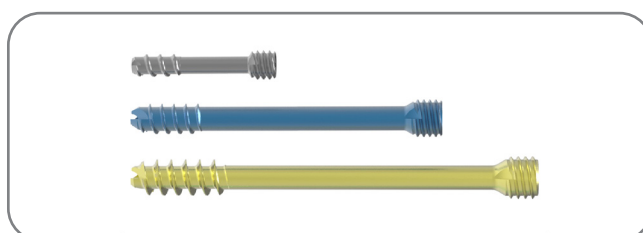
Please refer to the Austofix Cannulated Compression Screws Surgical Technique.

Note: The Cannulated Compression Screw instrument set (SET-INS-CAN) is required for this approach.

Headless Cannulated Screws (Ø1.7 - Ø3.0mm) are also available for fixation of intra-articular and extra-articular fractures, and non-unions of small bones.

Please refer to the Austofix Headless Cannulated Screws Surgical Technique.

Note: The Headless Cannulated Screw instrument set (SET-INS-HLCANN) is required for this approach.



Pre-Drilling

Determine whether Cortex or Locking Screws will be used. A combination of Screws may also be used. Use the table to determine which combination of Drill/Drill Sleeve is required for the desired Screw. Use with the appropriate Straight Handle with Quick Coupling (112300004/112230005) for the 2.7mm and 3.5mm screws respectively..

Note: If a combination of Screws is used, a Cortex Screw should be inserted first to pull the plate to the bone.

Note: If a Locking Screw is used first, care should be taken to ensure that the plate is securely held to the bone to avoid spinning of the plate about the bone as the Locking Screw is tightened to the plate.

Screw	2.7mm Cortex*	3.5mm Cortex	2.7mm Locking*	3.5mm Locking
Drill	Ø2.0mm Drill (112300003/ 112300015)	Ø2.5mm Drill (112230007)	Ø2.0mm Drill (112300003/ 112300015)	Ø2.5mm Drill (112230007)
Drill Sleeve/ Guide	2.0mm Drill Sleeve (L&C) (112300014)	2.5mm Drill Guide (112230008)	2.0mm Drill Sleeve (L&C) (112300014)	2.5mm Drill Guide (112230008)
Driver	T8 Star Screwdriver (112300005/6)	T10 Star Screwdriver (112230003/6)	T8 Star Screwdriver (112300005/6)	T10 Star Screwdriver (112230003/6)
Torque Limiter	-	-	0.8Nm Torque Limiter (112300012)	1.5Nm Torque Limiter Adapter (112110057)

***Note:** 2.4/2.7mm Instrument Set (SET-INS-2.4/2.7) required.

Note: 0.8Nm Torque Limiter does not contain a coloured laser mark. Refer to the product code prior to use.

Position the Plate

Place the selected plate on the fractured bone or joint and in a suitable position. The appropriate K-Wire diameter can be used to assist with determining the optimal position of the plate by inserting it through compression wire holes or slots for temporary fixation.

Note: Depending on the plate, use the appropriate 1.6mm or 2.0mm K-Wire.

For the Wedge Shape Locking Plate, the chamfered edge will help with pushing the osteotomy open at the site with the wedge being seated between the osteotomy. Use the most appropriate plate.

Note: If the osteotomy size is set between two different wedge sizes, use the plate with the smaller wedge to determine if sufficient correction is provided. If not appropriate, use the other plate.

Position the calcaneus locking plate (trapezoidal) over the displacement site using K-Wires through the K-Wire slot. The dynamic slot can be used as temporary screw fixation using a cortex screw for sliding osteotomy to occur.

Note: Use additional K-wires in locking screw holes when necessary.



Drill Guides

The 2.4/2.7mm Instrument Set and Foot and Ankle Instrument Set contains two different drill guides. Please follow the guide below to ensure the drill guides are used appropriately.

Drill Guide, Ø2.5mm (112230008)

The Threaded Drill Guide (green laser mark) is only used with plates with limited contact features. The sleeve tips are designed to seat precisely within the hole to allow accurate locking screw drilling. This is used for perpendicular insertion.



Drill Sleeve, 2.0mm (112300014)

The Threaded Drill Sleeve (yellow laser mark) is used within the threaded **Locking Holes** for perpendicular insertion of Locking and Cortex Screws for angular stability.



Drilling

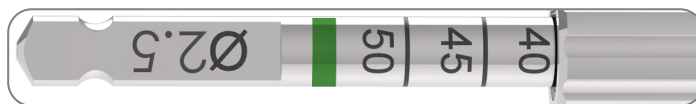
Cortex Screw Drilling

Refer to the table on page 13 for the appropriate drill sleeve and guide for the appropriate cortical screw diameters.

Locking Sleeve & Locking Screw Drilling

Insert the 2.0mm Drill Sleeve (112300014) into the threaded hole. The Drill Sleeve will ensure the correct drilling angle. Carefully drill the Locking Screw hole through both cortices using the 2.0mm Drill of varying lengths (112300003/ 112300015).

Note: The 2.5mm Drill Guide (112230008) is required for the 3.5mm Locking and Cortex Screws.



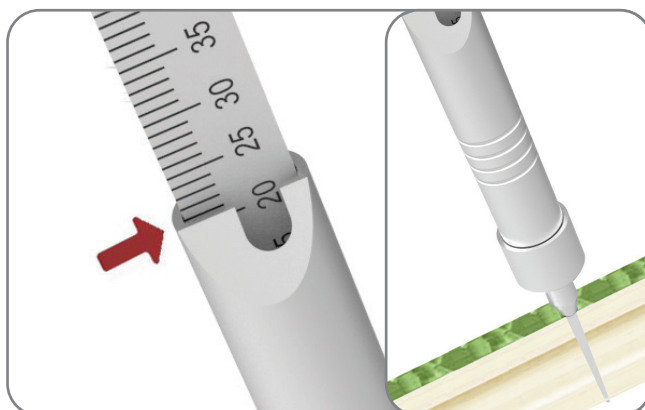
Warning: Take care while drilling as interference can occur between Screws if the plate has been contoured. If crossing over between drilled holes occurs, cease drilling and use a Screw of the appropriate length.

Determine Screw Length

The 2.0 & 2.4mm Depth Gauge (112300008) is required to determine Screw length of 2.7mm screws. The Depth Gauge can be inserted directly into the hole in the bone. Measurements marked on the Depth Gauge are used to determine the Screw length. The maximum length for screws to measure is 40mm.

Insert the hook of the Depth Gauge to engage the dorsal Cortex of the bone. Read the measurements from the barrel of the Depth Gauge. If the measurement is between graduations choose the smaller Screw length.

Locking Screw length can be determined by reading the depth measurement directly from the calibrated Ø2.5mm Drill (112230007). Use this in conjunction with the Ø2.5mm Drill Guide (112230008).



Note: Alternatively, the 2.5/4.0mm Depth Gauge (112100001) can be used to verify the depth up to 60mm as an optional instrument.

Note: 2.0mm drill bits (112300003/ 112300015) do not have depth markings. Use the correct drill bit.

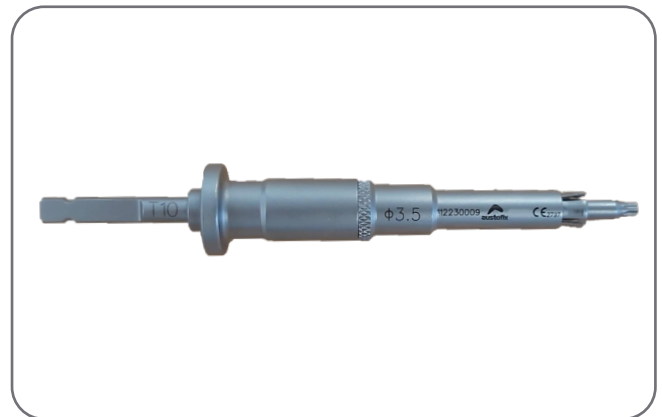
Cortex & Locking Screw Insertion

Screw Insertion

Select the appropriate Screw with the assembled Driver Tip and Handle. A Cortex Screw should be inserted first to generate interfragmentary compression.

Check the table on page 13 to confirm Driver Tip selection. A 3.5mm Screw Holder (112230009) is to be used in conjunction with the appropriate T10 screwdriver (112230003).

Note: If a combination of Cortex and Locking Screws are to be used then the Cortex Screw should be inserted first to generate interfragmentary compression.



Cortex Screws

Use the T8 Star Screwdriver (112300005/6) or T10 Star Screwdriver (112230003/6) to insert Cortex Screw to appropriate depth. The Screwdriver's Holding Sleeve can be used to assist in Screw insertion.

Note: The Tap for Cortex Screw Ø3.5mm (112100018) can be used to Ø3.5mm Cortex screws if deemed necessary.

Note: T10 Screwdriver (Long) (112230003) is used for insertion with the 3.5mm Screw Holder. T10 Screwdriver (Short) (112230006) is used for extraction and are not self-holding.

Warning: If using power to insert Cortex Screws, complete Screw insertion by hand to avoid compromising the integrity of the plate and screw construct, and to avoid damage to patient soft tissue.

Calcaneus Locking Plate (Trapezoidal) dynamic slot allows for 3.5mm cortex screws to be inserted to initiate slide osteotomy for realignment.

Locking Screws

Before the insertion of the Locking Screw ensure the fracture is reduced as this cannot be done after the screw has been inserted.

Ensure the desired Screw is concentric to the plate's threaded hole. Insert the Screw and tighten with the 1.5Nm Torque Limiter Adapter Screwdriver (112110057). Screw it down until the threaded screw head engages and is secure to the plate.

Warning: If using power to insert Locking Screws, always use a torque limiting attachment. This reduces the risk of the threads stripping from the head of the screw. The Star Screwdriver Shaft (112200003) can be used for insertion using power. The Locking Screws should always be tightened to the final position by hand.

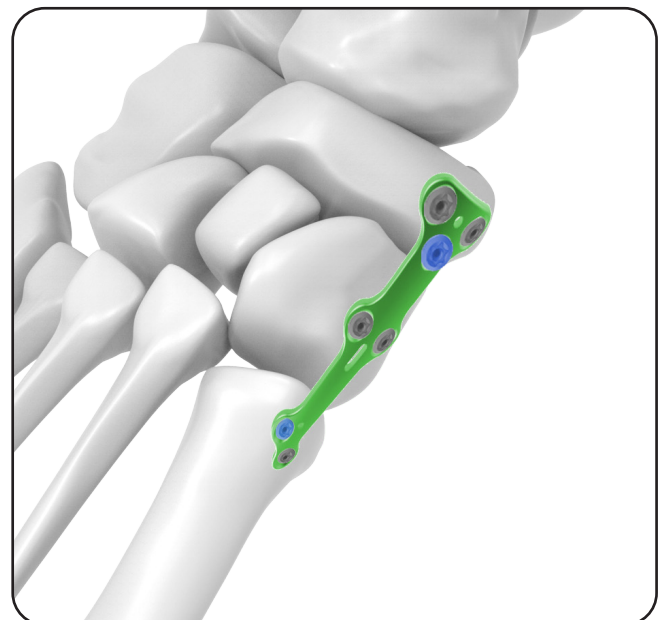
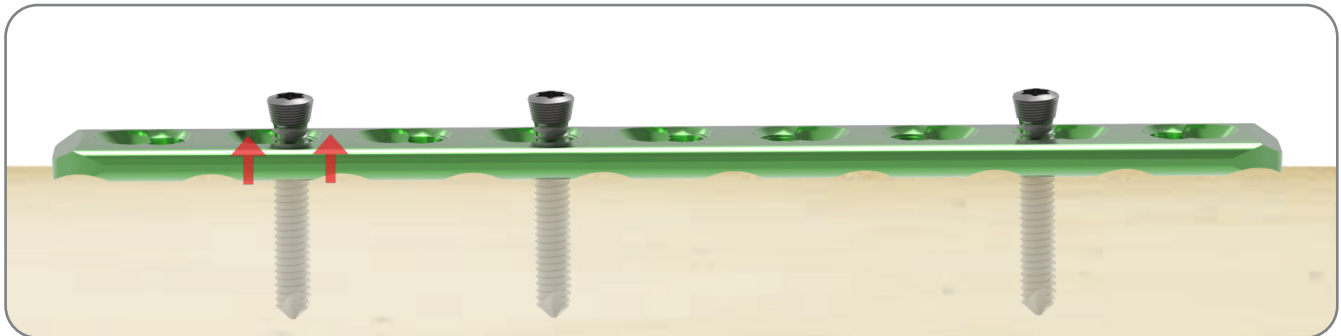


Plate Removal

To remove the Plate, unlock and partially unscrew all the Screws first using the appropriate Star (112300005/6) or Star (112230003/6) Screwdriver for the 2.7mm and 3.5mm Cortex Screws and Locking Screws respectively. Continue to remove the Screws from the bone. This method prevents the simultaneous rotation of the plate when unlocking the final Locking Screw.

Note: If required, use the long T8/T10 Screwdriver to extract the screws with the appropriate screw holder. Short T10 screwdrivers (112230006) are also not self-holding.



Implants

Plates

Calcaneus Locking Plate (Trapezoidal)

Product Code	Number of Holes	Height (mm)
4185-00-04006	4	6
4185-00-04008	4	8
4185-00-04010	4	10

Compatible Screw: 3.5mm F&A Locking Screw,
3.5mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Hindfoot Reconstruction Locking Plate

Product Code	Length (mm)
4185-00-15050	50
4185-00-15060	66

Compatible Screw: 3.5mm F&A Locking Screw,
3.5mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Trapezoidal Shape Locking Plate

Product Code	Number of Holes	Height (mm)
4187-00-04001	4	1
4187-00-04002	4	2
4187-00-04003	4	3
4187-00-04004	4	4
4187-00-04005	4	5
4187-00-04006	4	6

Compatible Screw: 3.5mm F&A Locking Screw,
3.5mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Wedge Shape Locking Plate

Product Code	Number of Holes	Width (mm)
4188-00-04003	4	3
4188-00-04004	4	4
4188-00-04005	4	5
4188-00-04006	4	6
4188-00-04007	4	7

Compatible Screw: 2.7mm Locking Screw,
2.7mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Locking Plate (Foot)

Product Code	Number of Holes
4189-00-02000	2
4189-00-04000	4

Compatible Screw: 2.7mm Locking Screw,
2.7mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire

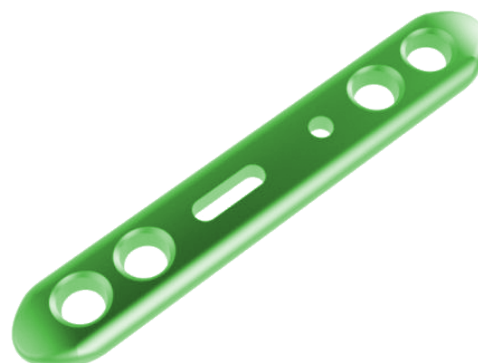


Straight Locking Plate

Product Code	Number of Holes
4190-00-02000	2
4190-00-04000	4

Compatible Screw: 2.7mm Locking Screw,
2.7mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Hindfoot Universal Locking Plate

Product Code	Number of Holes	Length (mm)
4191-00-04024	4	24
4191-00-04028	4	28
4191-00-04033	4	33

Compatible Screw: 2.7mm Locking Screw, 2.7mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Forefoot Universal Locking Plate

Product Code	Number of Holes	Length (mm)
4192-00-04022	4	22
4192-00-04024	4	24
4192-00-04026	4	26
4192-00-04028	4	28

Compatible Screw: 2.7mm Locking Screw, 2.7mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Metatarso phalangeal Locking Plate

Product Code	Length (mm)	Angle	L/R
4193-00-30010L	30	0°10°	L
4193-00-36010L	36	0°10°	L
4193-00-30510L	30	5°10°	L
4193-00-36510L	36	5°10°	L
4193-00-30101L	30	10°10°	L
4193-00-36101L	36	10°10°	L
4193-00-30010R	30	0°10°	R
4193-00-36010R	36	0°10°	R
4193-00-30510R	30	5°10°	R
4193-00-36510R	36	5°10°	R
4193-00-30101R	30	10°10°	R
4193-00-36101R	36	10°10°	R

Compatible Screw: 2.7mm Locking Screw, 2.7mm F&A Cortex Screw

Compatible K-Wires: 1.6mm K-Wire



Screws



Foot and Ankle Locking Screw -
Self - tapping

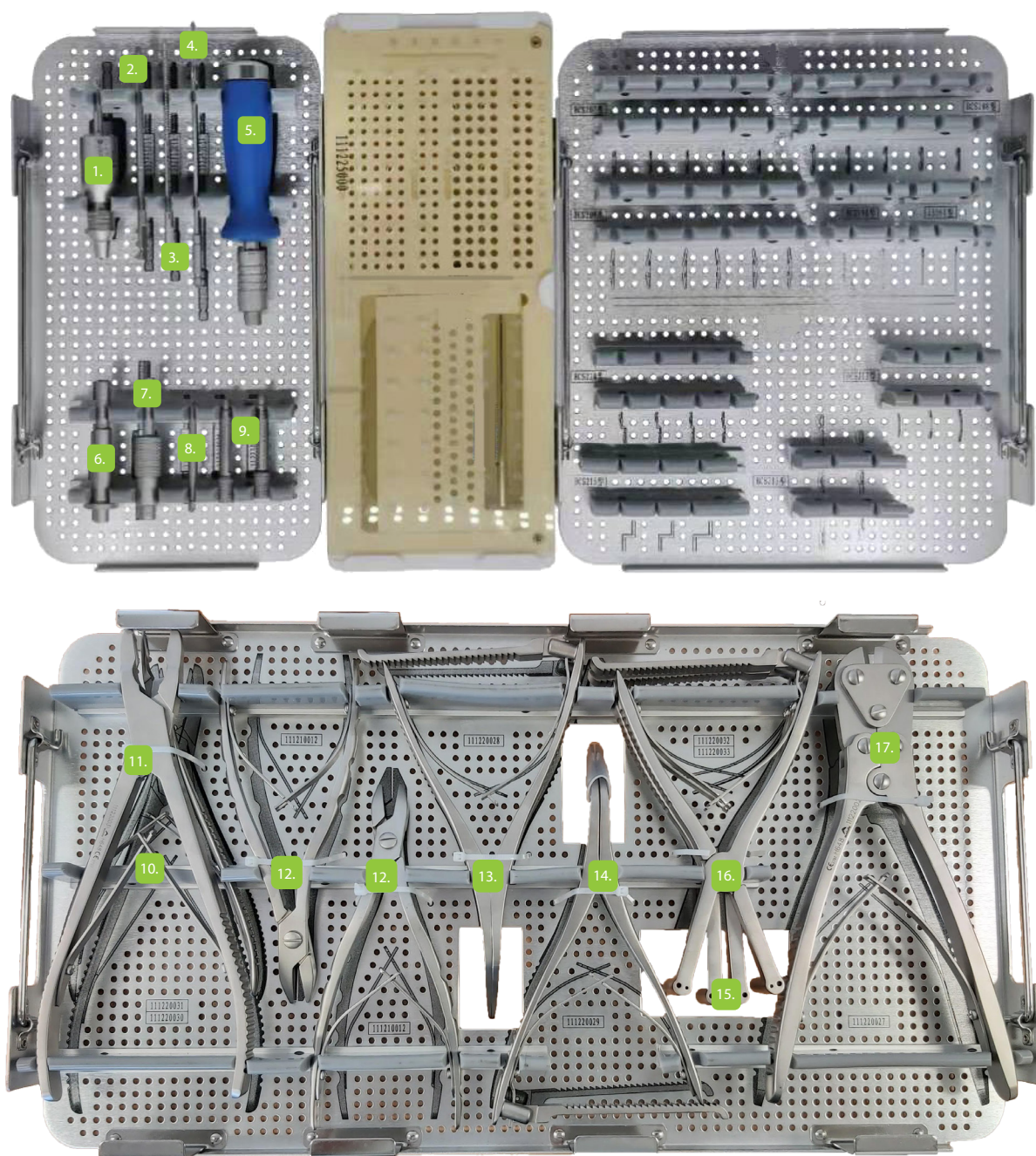
Foot and Ankle Locking Screw - Self - tapping		
Length	2.7mm	3.5mm
8	1059-00-27008	-
10	1059-00-27010	-
12	1059-00-27012	4194-00-35012
14	1059-00-27014	4194-00-35014
16	1059-00-27016	4194-00-35016
18	1059-00-27018	4194-00-35018
20	1059-00-27020	4194-00-35020
22	1059-00-27022	4194-00-35022
24	1059-00-27024	4194-00-35024
26	1059-00-27026	4194-00-35026
28	1059-00-27028	4194-00-35028
30	1059-00-27030	4194-00-35030
32	-	4194-00-35032
34	-	4194-00-35034
35	1059-00-27035	-
36	-	4194-00-35036
38	-	4194-00-35038
40	1059-00-27040	4194-00-35040
42	-	4194-00-35042
44	-	4194-00-35044
45	1059-00-27045	-
46	-	4194-00-35046
48	-	4194-00-35048
50	1059-00-27050	4194-00-35050
55	1059-00-27055	-
60	1059-00-27060	-



**Foot and Ankle Cortex Screw -
Self - tapping**

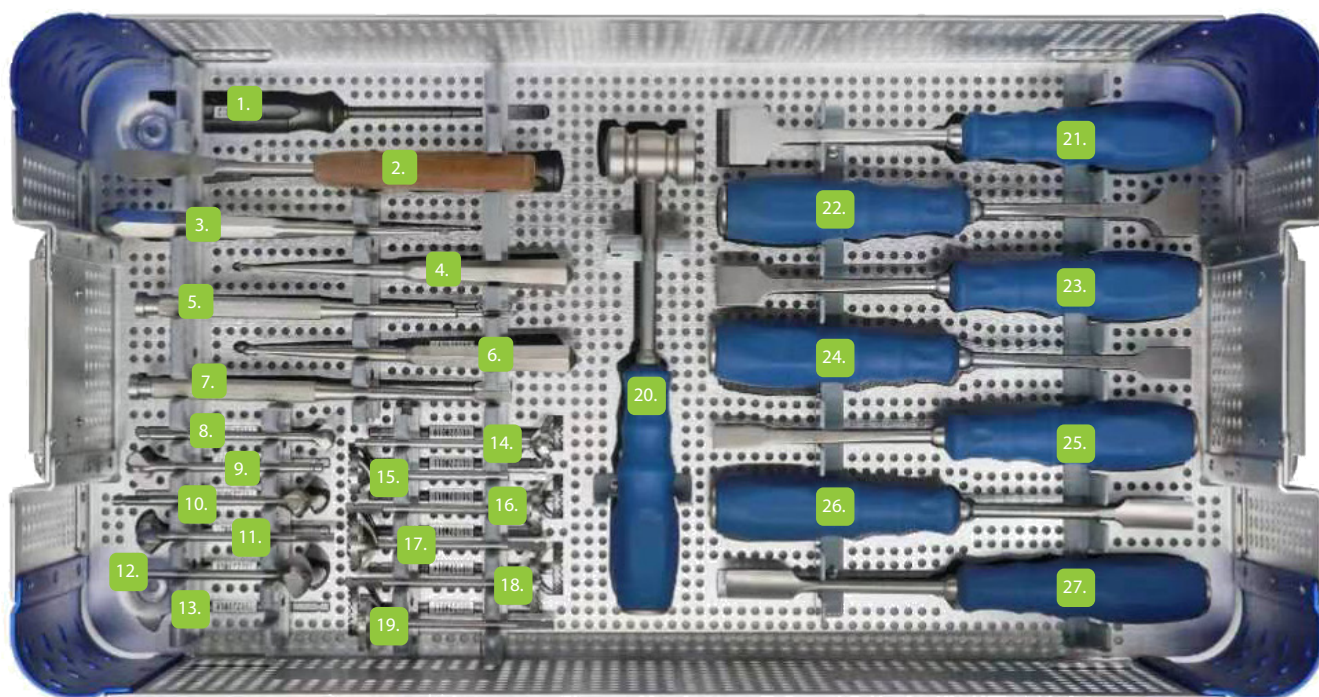
Foot and Ankle Cortex Screw - Self - tapping		
Length	2.7mm	3.5mm
10	4183-00-27010	-
12	4183-00-27012	4184-00-35012
14	4183-00-27014	4184-00-35014
16	4183-00-27016	4184-00-35016
18	4183-00-27018	4184-00-35018
20	4183-00-27020	4184-00-35020
22	4183-00-27022	4184-00-35022
24	4183-00-27024	4184-00-35024
26	4183-00-27026	4184-00-35026
28	4183-00-27028	4184-00-35028
30	4183-00-27030	4184-00-35030
32	-	4184-00-35032
34	-	4184-00-35034
36	-	4184-00-35036
38	-	4184-00-35038
40	-	4184-00-35040
42	-	4184-00-35042
44	-	4184-00-35044
46	-	4184-00-35046
48	-	4184-00-35048
50	-	4184-00-35050

Instruments



Instruments

#	Code	Description	Qty	#	Code	Description	Qty
1	112110057	Torque Limit Adapter 1.5Nm	1	10	111220030	Bone Rongeur 3mm (Narrow)	1
2	112230003	Screwdriver T10 (Long)	1	11	111220031	Bone Rongeur 6mm (Narrow)	1
3	112100018	Tap for Cortex Screw Ø3.5mm	1	12	111210012	Flat Plier	2
4	112230007	Drill Bit Ø2.5mm	2	13	111220028	Distractor (Narrow)	1
5	112230005	Straight Quick Connect Handle	1	14	111220029	Distractor (Wide)	1
6	112230009	Screw Holder 3.5mm	1	15	111220032	Bone Needle Distractor	1
7	112230004	Quick adapter	1	16	111220033	Bone Needle Pressure Clamp	1
8	112230006	Screwdriver T10 (Short)	1	17	111220027	Bone Needle Scissors	1
9	112230008	Drill Guide Ø2.5mm	2				

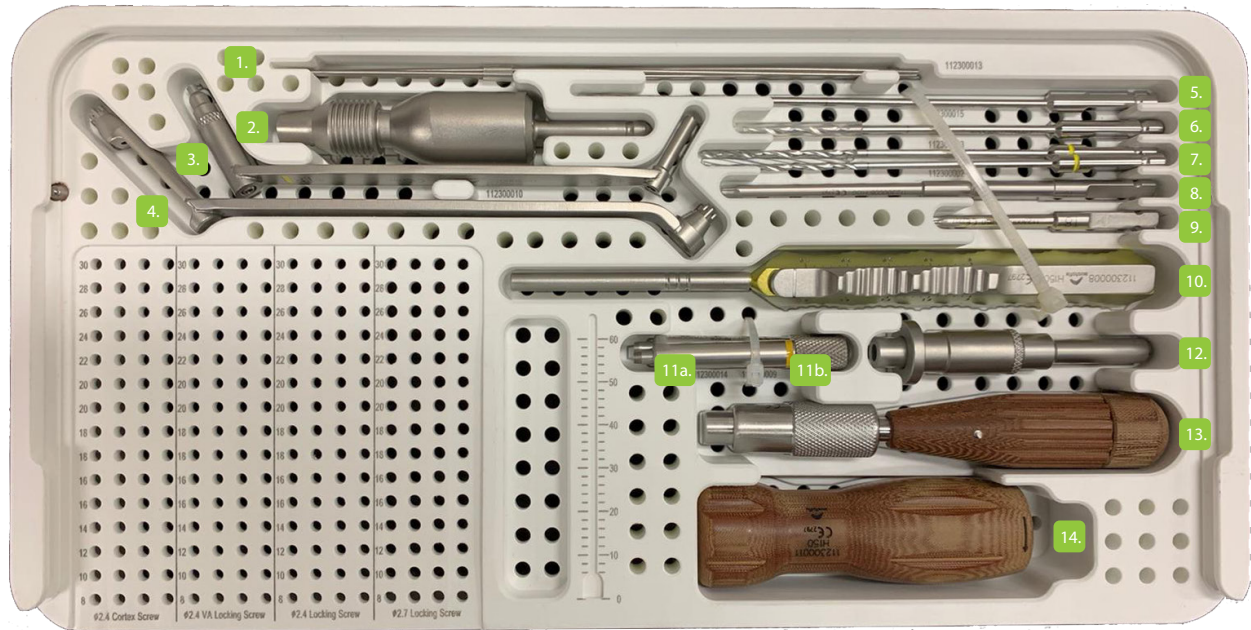


Instruments

#	Code	Description	Qty	#	Code	Description	Qty
1	111220045	Periosteal Stripper (Small)	1	14	111220010	Phalange Reamer 14mm (Concave)	1
2	111220042	Periosteal Stripper (Large)	1	15	111220011	Phalange Reamer 16mm (Concave)	1
3	111220034	Curette 4mm	1	16	111220012	Phalange Reamer 18mm (Concave)	1
4	111220036	Curette 6mm	1	17	111220013	Phalange Reamer 20mm (Concave)	1
5	111220026	Bone Chisel, Round 5mm	1	18	111220014	Phalange Reamer 22mm (Concave)	1
6	111220044	Curette 8mm	1	19	111220015	Phalange Reamer 24mm (Concave)	1
7	111220002	Osteotome 6mm	1	20	111220025	Bone Hammer	1
8	111220004	Phalange Reamer 14mm (Convex)	1	21	111220043	Osteotome 26mm	1
9	111220005	Phalange Reamer 16mm (Convex)	1	22	111220024	Osteotome 22mm	1
10	111220006	Phalange Reamer 18mm (Convex)	1	23	111220023	Osteotome 18mm	1
11	111220007	Phalange Reamer 20mm (Convex)	1	24	111220022	Osteotome 14mm	1
12	111220008	Phalange Reamer 22mm (Convex)	1	25	111220021	Osteotome 10mm	1
13	111220009	Phalange Reamer 24mm (Convex)	1	26	111220020	Bone Chisel, Round 13mm (Front Edge)	1
				27	111220019	Bone Chisel, Round 13mm (Reverse Edge)	1

Screw Set

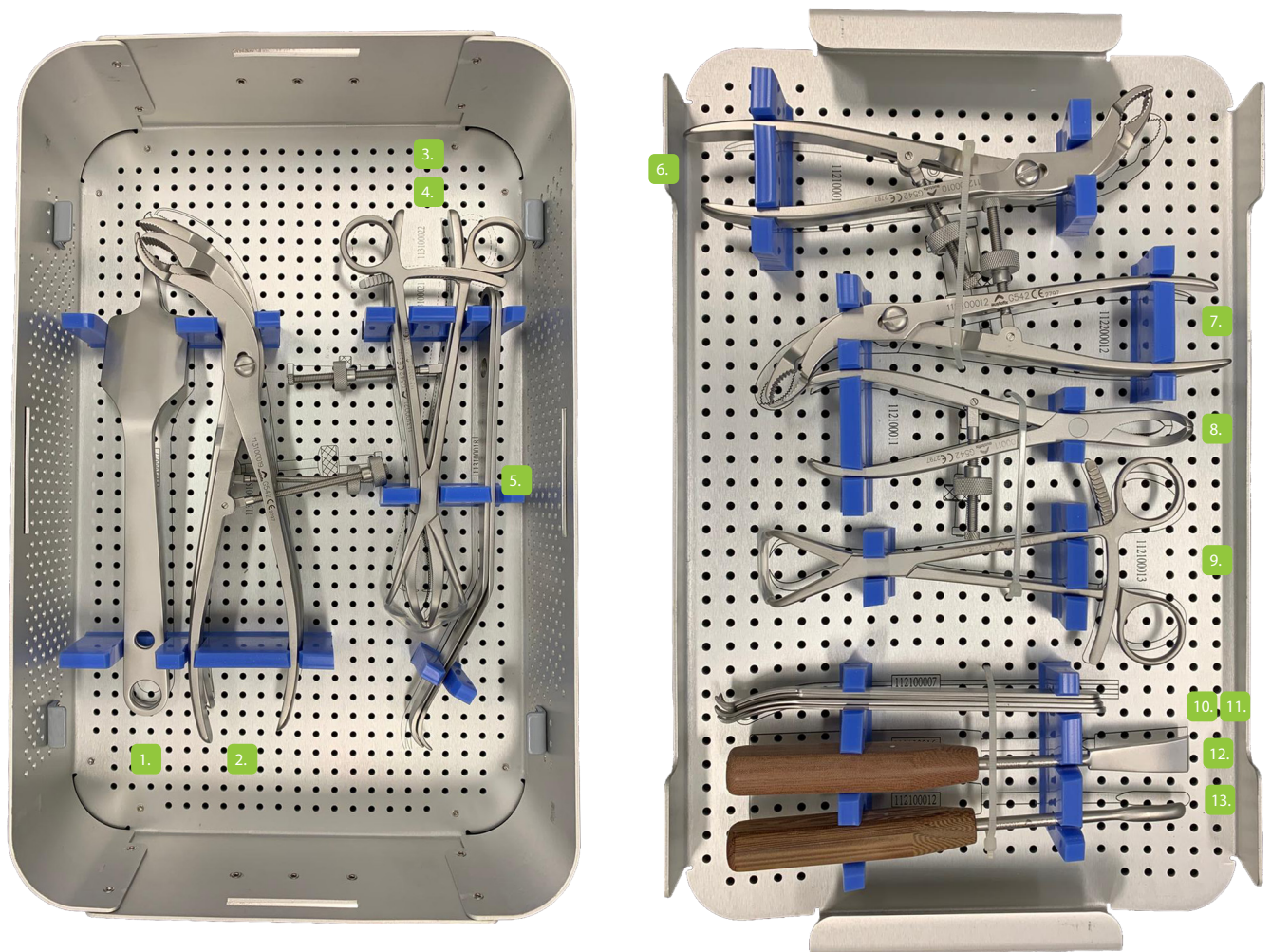
Ø2.4/Ø2.7 Screw Set



Instruments			
#	Code	Description	Qty
1	112300013	Guide Wire 1.1 x 150mm	4
2	112300012	Torque Limiter 0.8Nm	1
3	112300010	Drill Guide, Universal 1.8/2.4mm	1
4	112300001	Drill Sleeve 1.8 - 2.4mm	1
5	112300015	Drill Bit 2.0 x 102mm	1
6	112300003	Drill Bit 2.0 x 140mm	1
7	112300002	Drill Bit 1.8mm	2
8	112300006	Screwdriver, Long 4.5 x 105mm (Star)	1
9	112300005	Screwdriver, Short 4.5 x 55mm (Star)	1
10	112300008	Depth Gauge 2.0 & 2.4mm	1
11a	112300014	Drill Sleeve (L&C) 2.0mm	1
11b	112300009	Drill Sleeve (L&C) 1.8mm	1
12	112300007	Holding Sleeve	1
13	112300004	Straight Handle with Quick Coupling	1
14	112300011	T-Handle with Quick Coupling	1

Optional Set

Universal Trauma Set



Instruments			
#	Code	Description	Qty
1	113100017	Hohmann Retractor (Large) 43.5 x 267mm	2
2	113100019	Self-Centering Bone Holding Forceps (Speed Lock) 266mm	1
3	113100021	Reduction Forceps (Serrated Jaws) 220mm	2
4	113100022	Reduction Forceps (Point) 207mm	1
5	113100018	Hohmann Retractor (Small) 16 x 267mm	1
6	112100010	Self-Centering Bone Holding Forceps (Speed Lock) 191.8mm	2
7	112200012	Self-Centering Bone Holding Forceps (Compression)	1
8	112100011	Reduction Forceps (Serrated Jaws) 158mm	1
9	112100013	Reduction Forceps (Points) 182mm	1
10	112100006	Hohmann Retractor (Large) 15.5 x 159mm	2
11	112100007	Hohmann Retractor (Small) 10.5 x 170mm	2
12	113100016	Periosteal Elevator (Large) 191mm	1
13	112100012	Periosteal Elevator (Small) 190mm	1

Instrument Trays & Sets

Instrument Tray		
Code	Description	Qty
111229001	Foot & Ankle Reconstruction Instrument Set (Empty)	1
112309001	2.4 / 2.7 Instrument Set (Empty)	1
113122000	Universal Trauma Instrument Tray (Empty)	1

Instrument Set		
Code	Description	Qty
SET-INS-F&A	Full Foot & Ankle Reconstruction Instrument Set	-
SET-INS-2.4/2.7	Full 2.4 / 2.7 Instrument Set	-
SET-INS-UTRA	Full Universal Trauma Instrument Set	-

Single Use Items

Recommended K-Wires*		
Code	Description	Qty
511415	1.4 x 150mm K-Wire	4
114200003	1.6 x 150mm K-Wire	4
522015	2.0 x 150mm K-Wire	4

* **Note:** Not supplied in the instrument set, supplied sterile packed for all K-Wires separately.



Optional K-Wires		
Code	Description	Qty
611.112	1.1 x 120mm K-Wire	2
081.010	0.8 x 100mm K-Wire	2



Drill		
Code	Description	Qty
112300003	Drill Bit 2.0 x 100mm (For 2.7mm Screws)	1
112300015	Drill Bit 2.0 x 140mm (For 2.7mm Screws)	1
112230007	Drill Bit Ø2.5mm (For 3.5mm Screws)	1



Optional Instrument*		
Code	Description	Qty
112100001	Depth Gauge 2.5/4.0mm	1



* **Note:** Requires Small Fragment Instrument Set. (SET-INS-SML)

MRI Safety

Austofix has not evaluated its devices for safety and compatibility in a Magnetic Resonance (MR) environment. However, the materials used in their manufacture are known to have minimal ferromagnetism, with minimal risk to patients in strong magnetic fields.

Austofix has performed a review of published, peer-reviewed data, which confirms that only minor rises in MRI-related heating are observed from devices manufactured from the same titanium and stainless-steel materials. Trauma devices are considered unlikely to produce injury to patients, including in the worst-case 3.0T systems.

The devices and materials observed in the literature experience forces too weak to cause significant displacement; the risk being further mitigated by their implantation in bone. Risks of imaging artifacts are known to MRI operators, and can be reduced by choosing appropriate pulse sequences and optimizing scanning parameters by using a large bandwidth, small field-of-view and appropriate echo train length.

Average temperature changes have been observed in studies at 0.48°C in titanium and 0.74°C in stainless-steel. Rises in temperature in clinical situations may depend on individual patient factors. It should be recommended that patients be thoroughly monitored when undergoing MR scanning, and that impaired patient thermoregulation be considered a contraindication for MRI procedures.

Sources:

Chen CA, Chen W, Goodman SB, et al. New MR Imaging Methods for Metallic Implants in the Knee: Artifact Correction and Clinical Impact. 2011, 1121-1127.

Gill A, Shellock FG. Assessment of MRI issues at 3-Tesla for metallic surgical implants: findings applied to 61 additional skin closure staples and vessel ligation clips. J Cardiovasc Magn Reson. 2012, 14(1):3.

Shellock FG. Biomedical Implants and Devices: Assessment of Magnetic Field Interactions With a 3.0-Tesla MR System. 2002, 721-732.

Zou Y, Chu B, Wang C, Hu Z. Evaluation of MR issues for the latest standard brands of orthopedic metal implants, Plates and screws. Eur J Radiol. 2015, 84(3):450-457.



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