



# Surgical Technique

## 2.7mm Wise-Lock Modular Foot System

# about us

Auxein Medical is an integrated, research based, orthopaedic Implants & instruments manufacturing company, producing a wide range of quality, affordable generic implants, trusted by healthcare professionals and patients across geographies. It is the Company's constant endeavor to provide a wide basket of generic and our innovator products that exceed the highest expectations of customers in term of quality and safety. The company has world-class manufacturing unit established in india and serves customers in over 75 countries worldwide.

## Our Achievements



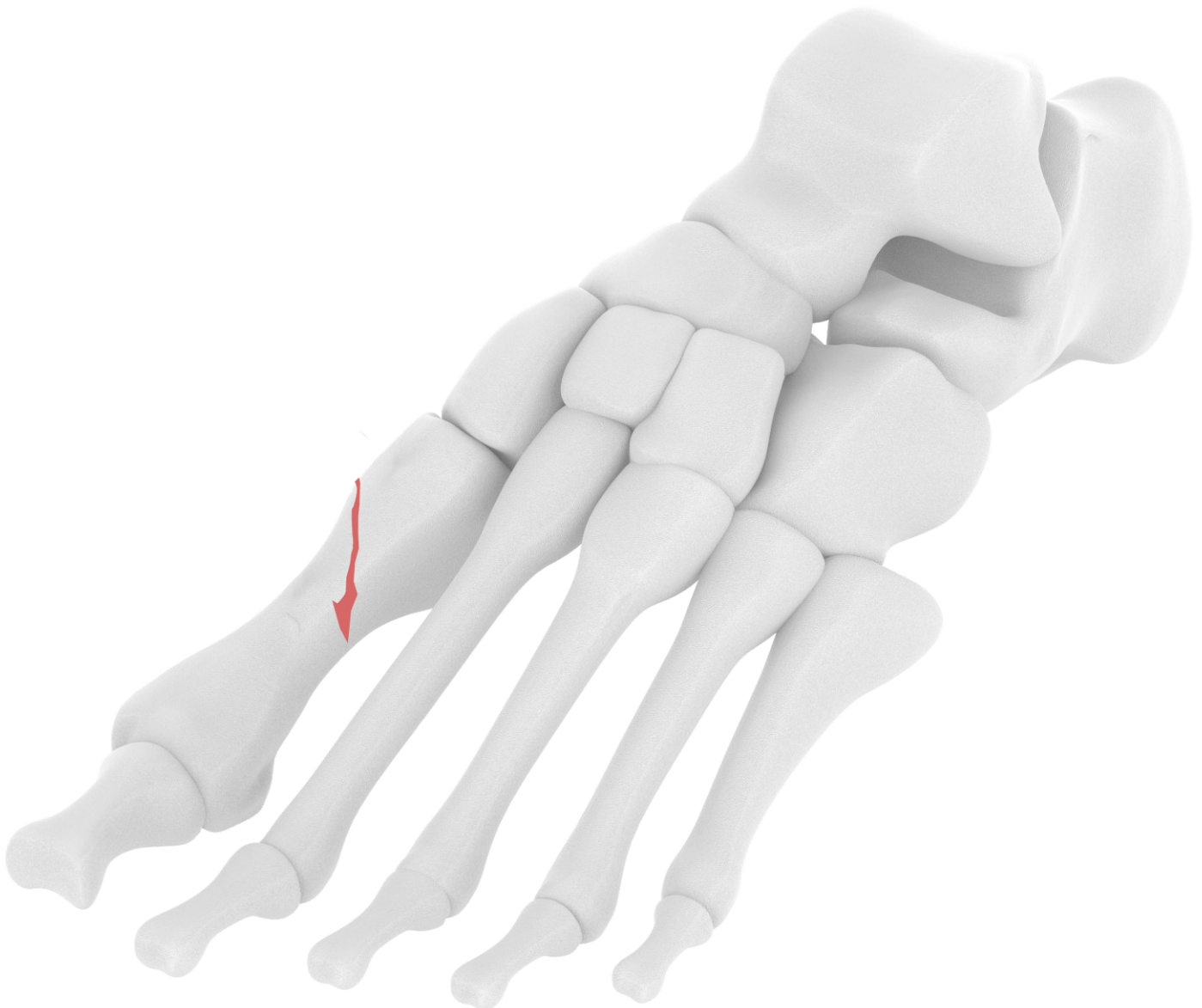
## Indications

Wise-Lock plates may in principle be used for the same indications as for the corresponding standard plates.

Thanks to the angular stability provided by the plate-screw connection, better clinical results can be obtained in patients with metaphyseal fractures, comminuted fractures and osteoporotic bone.

### Possible indications for implants of size 2.7 include:

- Fractures of metatarsal I
- Fractures of the tarsals
- MTP 1 fusions
- Osteotomies and arthrodeses of the tarsals (e.g. calcaneo-cuboidal fusion)

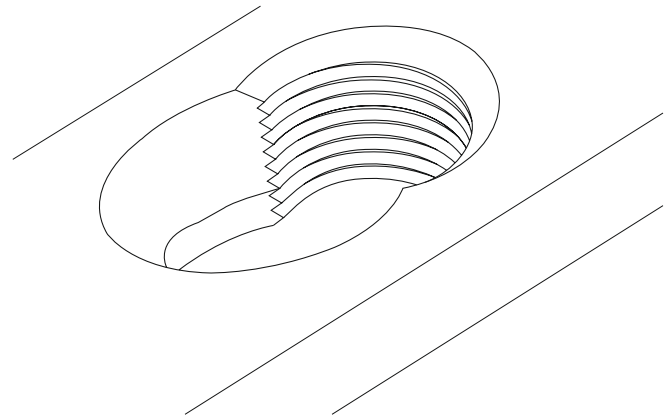


## System description

### The Combi-hole

The Wise-Lock (Locking Compression Plate) system offers the surgeon the choice, preoperatively and intraoperatively, of using either standard screws or locking screws – or a combination of the two screw types – for fracture fixation.

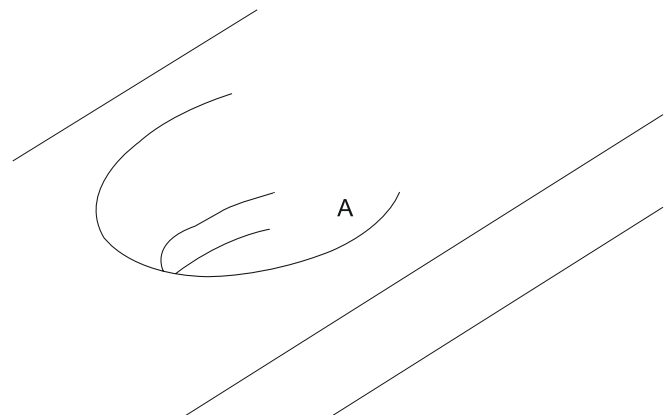
Experience in the use of Wise-Lock plates or instruction by a surgeon with experience of their use is recommended.



### Tapered, threaded hole for locking screws (A)

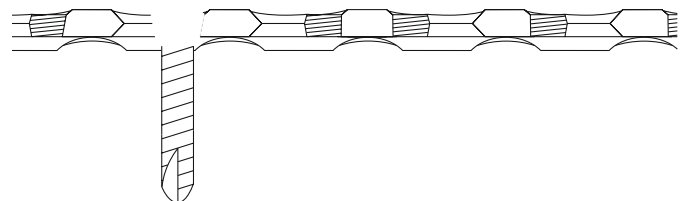
The self-tapping locking screws can be locked in the tapered threaded hole to ensure angular stability. Plate and screw systems in which the screws are locked in the plate function according to the principle of an internal fixator and are used to resolve the following problem situations:

- Primary intraoperative loss of reduction
- Secondary postoperative loss of reduction, particularly in cases of osteoporosis or poor bone quality or of comminuted fractures without bony support
- Compression of the periosteum and the resulting impairment of cortical circulation



### Functional principle of the internal fixator

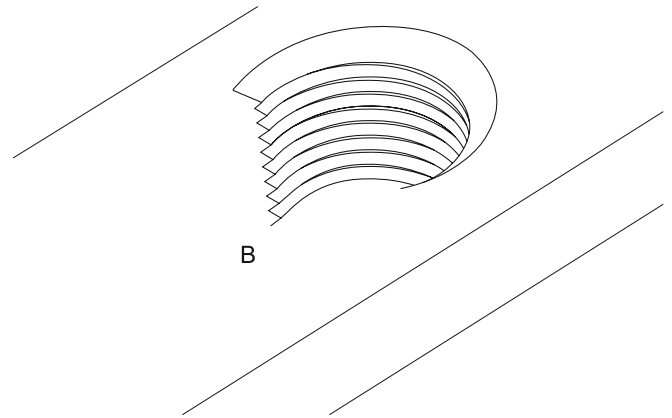
When Wise-Lock plates are used with angularly stable locking screws, the plate and screws together form a stable system; the stability of the fracture is mainly dependent on the strength of the resulting assembly. Since the plate does not need to be compressed against the bone, blood flow to the bone is not additionally impaired.



## Wise-Lock Dynamic Compression hole for standard screws (B)

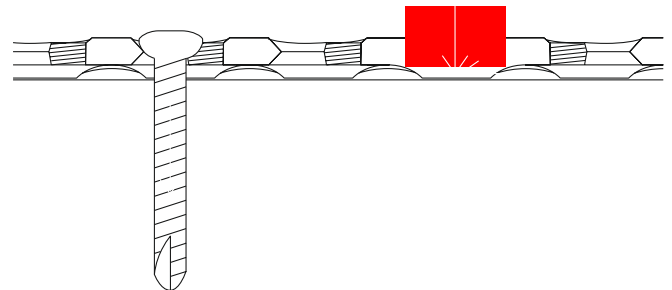
The hole corresponds to the Wise-Lock Dynamic Compression Unit of the Wise-Lock plate and is designed for standard cortex screws. As with any standard Wise-Lock plate, axial compression of the fracture can be achieved by predrilling off-centre. Lag screws can also be angled laterally and longitudinally in relation to the plate for interfragmental compression. The Wise-Lock Dynamic Compression hole is not suitable for the insertion of a locking screw.

**Note: The standard screw must be placed first within a fragment in order to achieve compression.**



## Functional principle of absolute stability

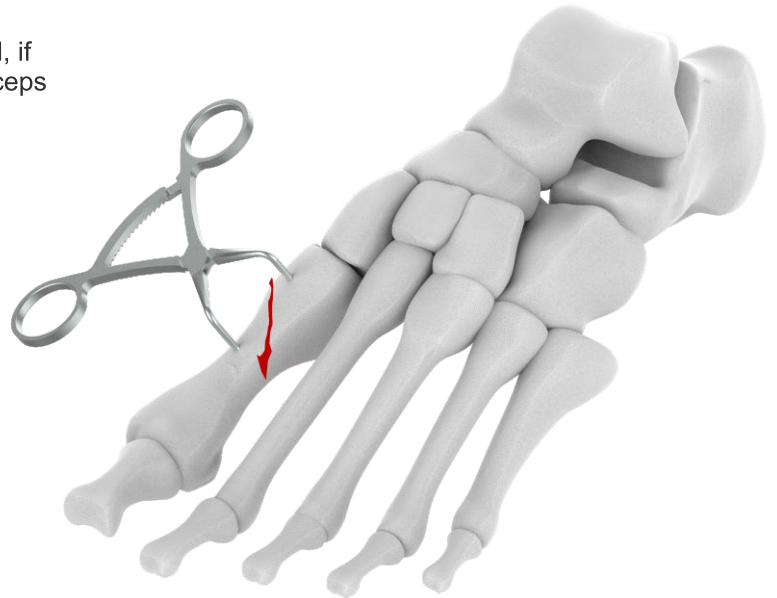
Securing the plate with standard screws creates friction between the underside of the plate and the surface of the bone by compression at the interface. In order to ensure absolute stability, the frictional resistance must be greater than the forces produced during rehabilitation. Cortical screws are essential for this type of fixation.



## Surgical technique

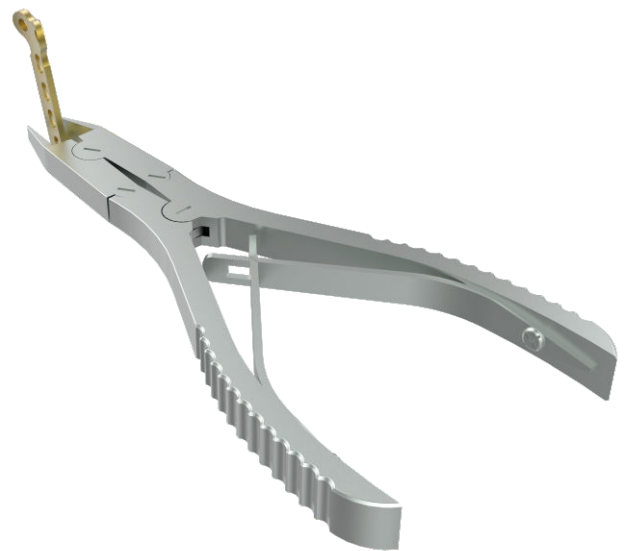
### 1. Reduce fracture

- Reduce the fracture under the image intensifier and, if necessary, fix with Kirschner wires or reduction forceps (1138-31).



### 2. Trim plate

- Trim plate to the desired length using the cutting pliers for Hand & Foot System (1138-30) and remove the burrs.



### 3. Bend plate

- Bend the plate using the Bending Pliers for Hand & Foot System (1138-31) The Bending Pin With Thread For 2.4mm/2.7mm Wise-Lock Plates (1137-03) can be used to bend the round threaded holes.

**Note: If possible, bend the plate between the combi-holes.** Do not deform the combi-holes during bending as this may hinder the subsequent insertion of locking screws.



#### 4. Position plate

- Position the plate over the reduced fracture and, if necessary, fix provisionally with Kirschner wires or reduction forceps.



#### 5. Determine screw type

- Depending on the indication and situation in each case, standard screws and/or Wise-Lock locking screws may be inserted. If both cortex and locking screws are used in one plate, the cortex screws must be inserted first in order to compress the plate against the bone before the locking screws are inserted.

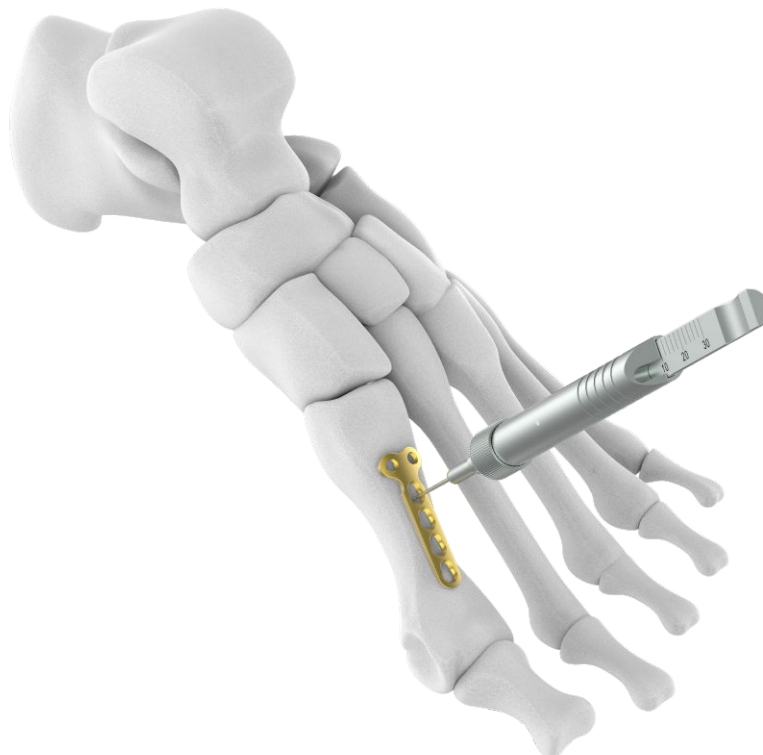
**Note:** If angularly-stable buttress pins are used, one screw per bone fragment must be inserted additionally.

**Insertion of standard screws****6a. Predrill screw hole**

- Using the Wise-Lock Drill Sleeve 2.7mm For Drill Bits Ø2.0mm (**1138-02**), predrill the screw hole either neutrally or off-centre.

**6b. Determine screw length**

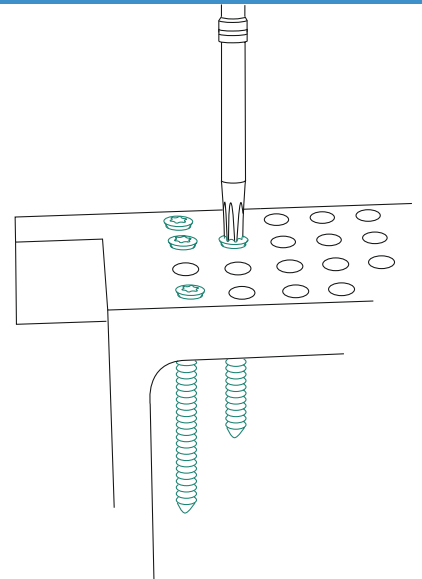
- Determine the screw length with the Depth Gauge measuring up to 30mm, for Hand & Foot System (**1138-14**).



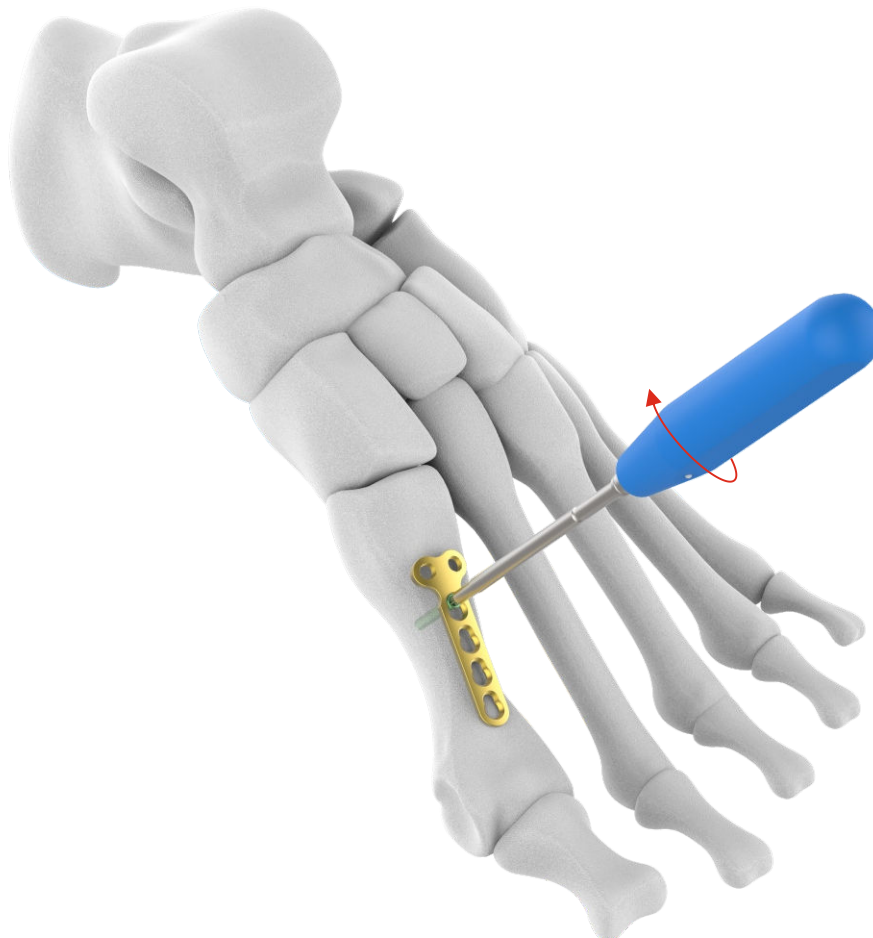


**6c. Pick up screw**

- Select and pick up the matching Star Screwdriver for 2.7mm Wise-Lock Screw, Self-Tapping, (Star Head) or 2.7mm Cortical Screw, Self-Tapping, (Star Head).

**6d. Insert standard screw**

- Insert self-tapping standard screw either neutrally or off-centre.



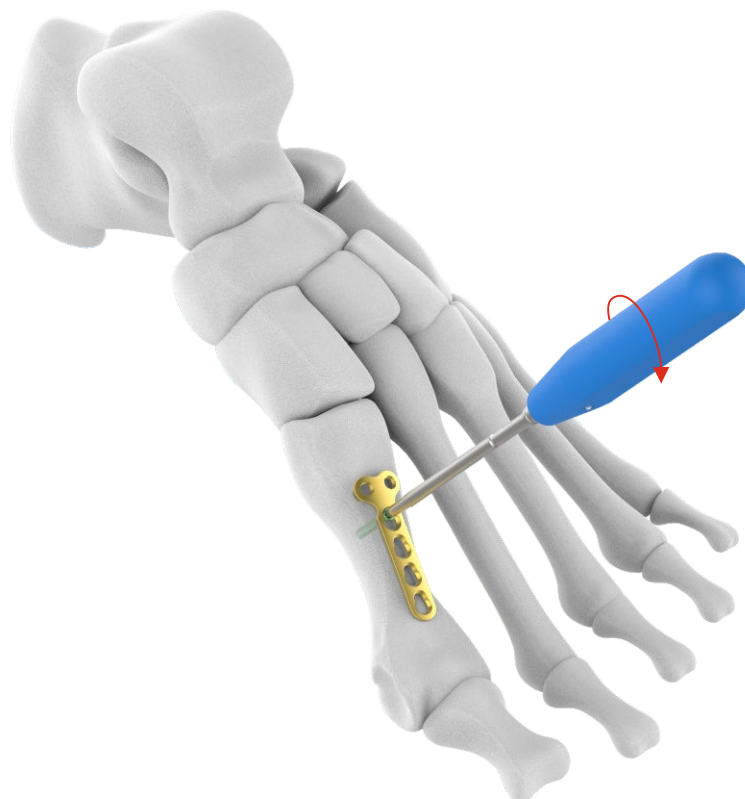
### 6e. Insert additional standard screws

- Insert additional standard screws depending on the corresponding indication and situation.



### 8. Remove implants

- To remove the plate, first unlock all screws then definitively remove them in a second step, otherwise the plate may rotate while the last screw is being removed and cause soft tissue damage.



### 2.7mm Wise-Lock Plate, Straight

Code	Holes
<b>TI-505.404</b>	4
<b>TI-505.405</b>	5
<b>TI-505.406</b>	6
<b>TI-505.407</b>	7
<b>TI-505.408</b>	8
<b>TI-505.410</b>	10



### 2.7mm Wise-Lock Condylar Plate

Code	Holes
<b>TI-559.404</b>	Shaft 4, Head 2
<b>TI-559.405</b>	Shaft 5, Head 2
<b>TI-559.406</b>	Shaft 6, Head 2
<b>TI-559.407</b>	Shaft 7, Head 2



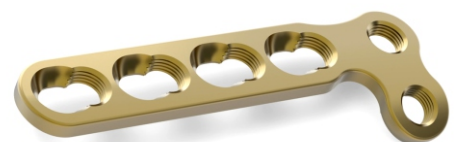
### 2.7mm Wise-Lock T-Plate

Code	Holes
<b>TI-556.403</b>	Shaft 3, Head 2
<b>TI-556.404</b>	Shaft 4, Head 2



### 2.7mm Wise-Lock L-Plate

Code	Holes	Type
<b>TI-813.403L</b>	Shaft 3, Head 2	Left
<b>TI-813.403R</b>	Shaft 3, Head 2	Right
<b>TI-813.404L</b>	Shaft 4, Head 2	Left
<b>TI-813.404R</b>	Shaft 4, Head 2	Right



### 2.7mm Wise-Lock L-Plate, Oblique

Code	Holes	Type
<b>TI-1133.03L</b>	Shaft 3, Head 2	Left
<b>TI-1133.03R</b>	Shaft 3, Head 2	Right
<b>TI-1133.04L</b>	Shaft 4, Head 2	Left
<b>TI-1133.04R</b>	Shaft 4, Head 2	Right



### 2.7mm Wise-Lock Mini Condylar Plate

Code	Holes	Type
<b>TI-516.307L</b>	7	Left
<b>TI-516.307R</b>	7	Right



### 2.7mm Wise-Lock Straight Plate

Code	Holes
<b>TI-1134.02</b>	2



### 2.4/2.7mm Wise-Lock X-Plate

Code	Holes	Length
<b>TI-812.301</b>	4	22x14mm
<b>TI-812.302</b>	4	24x18mm
<b>TI-812.303</b>	4	30x20mm
<b>TI-812.304</b>	4	36x20mm



### 2.7mm Cortical Screw, Self-Tapping, (Star Head)



Code	Length
TI-1242.06	6
TI-1242.08	8
TI-1242.10	10
TI-1242.12	12
TI-1242.14	14
TI-1242.16	16
TI-1242.18	18
TI-1242.20	20
TI-1242.22	22
TI-1242.24	24
TI-1242.26	26
TI-1242.28	28
TI-1242.30	30
TI-1242.32	32
TI-1242.34	34
TI-1242.36	36
TI-1242.38	38
TI-1242.40	40
TI-1242.42	42
TI-1242.44	44
TI-1242.46	46
TI-1242.48	48
TI-1242.50	50

### 2.7mm Wise-Lock Screw, Self-Tapping, (Star Head)



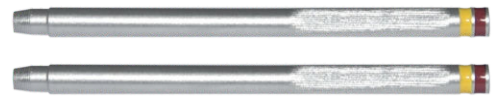
Code	Length
TI-1241.06	6mm
TI-1241.07	7mm
TI-1241.08	8mm
TI-1241.09	9mm
TI-1241.10	10mm
TI-1241.12	12mm
TI-1241.14	14mm
TI-1241.16	16mm
TI-1241.18	18mm
TI-1241.20	20mm
TI-1241.22	22mm
TI-1241.24	24mm
TI-1241.26	26mm
TI-1241.28	28mm
TI-1241.30	30mm
TI-1241.32	32mm
TI-1241.34	34mm
TI-1241.36	36mm
TI-1241.38	38mm
TI-1241.40	40mm
TI-1241.42	42mm
TI-1241.44	44mm
TI-1241.46	46mm
TI-1241.48	48mm
TI-1241.50	50mm
TI-1241.52	52mm
TI-1241.54	54mm
TI-1241.56	56mm
TI-1241.58	58mm
TI-1241.60	60mm

### INSTRUMENTS

**1137-07** Screwdriver Shaft, T8 For 2.4mm/2.7mm Screws



**1137-03** Bending Pin With Thread For 2.4mm/2.7mm Wise-Lock Plates



**1137-09** Holding Sleeve For 2.4/2.7mm Wise-Lock Screws



**1136-06** Countersink For 2.0/2.4/2.7mm Screws



**1138-01** Self-Centering Double Drill Guide  $\varnothing 2.7/2.0$ mm



**1138-02** Wise-Lock Drill Sleeve 2.7mm For Drill Bits  $\varnothing 2.0$ mm



## INSTRUMENTS

**1138-04** Drill Bit Quick Coupling Ø2.0mm x Length 110mm, 2-Flute



**1138-05** Drill Bit Quick Coupling Ø2.7mm x Length 102mm, 2-Flute



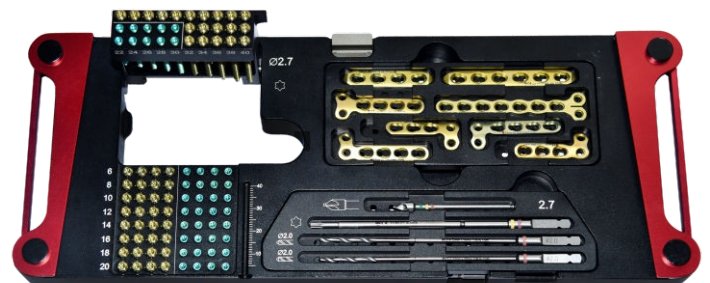
**1138-41** Holding Sleeve For 2.7mm Cortical Screws



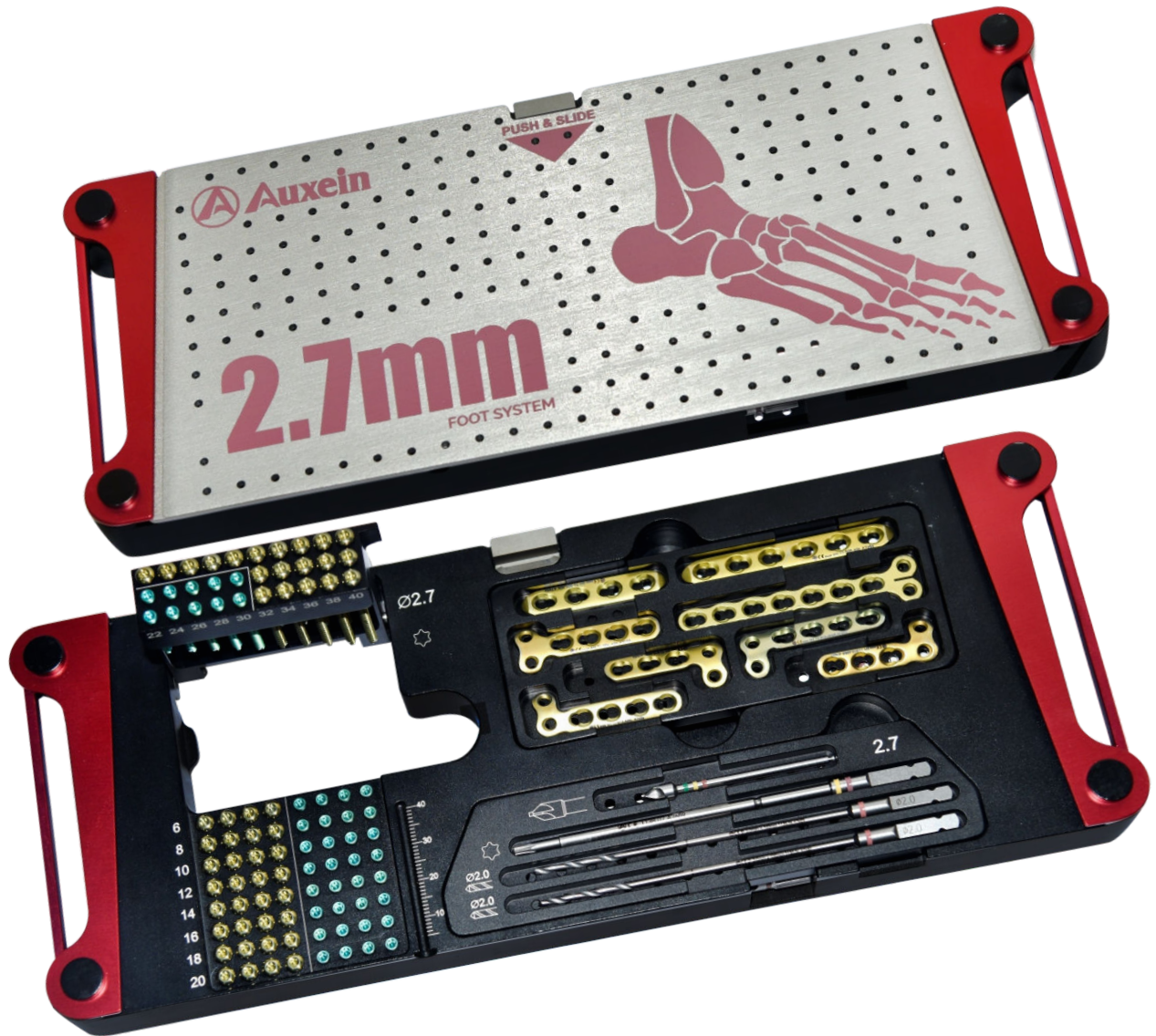
**1138-11** Container with Tray and Lid For 2.7mm Implant & Instrument Set



**1138-11** Container with Tray and Lid For 2.7mm Implant & Instrument Set



## 1138-11 Container with Tray and Lid For 2.7mm Implant & Instrument Set



### Instruments For 2.7mm Wise-lock Modular Foot System

Code	Items	Qty
1137-07	Screwdriver Shaft, T8 For 2.4mm/2.7mm Screws	1
1137-03	Bending Pin With Thread For 2.4mm/2.7mm Wise-Lock Plates	2
1137-09	Holding Sleeve For 2.4/2.7mm Wise-Lock Screws	1
1136-06	Countersink For 2.0/2.4/2.7mm Screws	1
1138-01	Self-Centering Double Drill Guide $\varnothing 2.7/2.0$ mm	1
1138-02	Wise-Lock Drill Sleeve 2.7mm For Drill Bits $\varnothing 2.0$ mm	2
1138-04	Drill Bit Quick Coupling $\varnothing 2.0$ mm x Length 110mm, 2-Flute	2
1138-05	Drill Bit Quick Coupling $\varnothing 2.7$ mm x Length 102mm, 2-Flute	2
1138-41	Holding Sleeve For 2.7mm Cortical Screws	1
1138-11	Container with Tray and Lid For 2.7mm Implant & Instrument Set	1



**1138-11 Container with Tray and Lid For 2.7mm Implant & Instrument Set**
**Instruments For 2.7mm Wise-lock Modular Foot System**

	Code	Items	Qty
Plates	<b>TI-505.404</b>	2.7mm Wise-Lock Plate, Straight, 4 Holes	1
	<b>TI-505.406</b>	2.7mm Wise-Lock Plate, Straight, 6 Holes	1
	<b>TI-559.407</b>	2.7mm Wise-Lock Condylar Plate, (2 Head Holes), 7 Holes	1
	<b>TI-556.404</b>	2.7mm Wise-Lock T-Plate, (2 Head Holes), 4 Holes	1
	<b>TI-813.403L</b>	2.7mm Wise-Lock L-Plate, (2 Head Holes), 3 Holes - Left	1
	<b>TI-813.404L</b>	2.7mm Wise-Lock L-Plate, (2 Head Holes), 4 Holes - Left	1
	<b>TI-813.403R</b>	2.7mm Wise-Lock L-Plate, (2 Head Holes), 3 Holes - Right	1
	<b>TI-813.404R</b>	2.7mm Wise-Lock L-Plate, (2 Head Holes), 4 Holes - Right	1
Screws	<b>TI-1242.06</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 6mm, Titanium	4
	<b>TI-1242.08</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 8mm, Titanium	4
	<b>TI-1242.10</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 10mm, Titanium	4
	<b>TI-1242.12</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 12mm, Titanium	4
	<b>TI-1242.14</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 14mm, Titanium	4
	<b>TI-1242.16</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 16mm, Titanium	4
	<b>TI-1242.18</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 18mm, Titanium	4
	<b>TI-1242.20</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 20mm, Titanium	4
	<b>TI-1242.22</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 22mm, Titanium	1
	<b>TI-1242.24</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 24mm, Titanium	1
	<b>TI-1242.26</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 26mm, Titanium	1
	<b>TI-1242.28</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 28mm, Titanium	1
	<b>TI-1242.30</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 30mm, Titanium	1
	<b>TI-1242.32</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 32mm, Titanium	4
	<b>TI-1242.34</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 34mm, Titanium	4
	<b>TI-1242.36</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 36mm, Titanium	4
	<b>TI-1242.38</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 38mm, Titanium	4
	<b>TI-1242.40</b>	2.7mm Cortical Screws, Self-Tapping, (Star Head), Length 40mm, Titanium	4
Screws	<b>TI-1241.06</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 6mm, Titanium	4
	<b>TI-1241.07</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 7mm, Titanium	4
	<b>TI-1241.08</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 8mm, Titanium	4
	<b>TI-1241.09</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 9mm, Titanium	4
	<b>TI-1241.10</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 10mm, Titanium	4
	<b>TI-1241.12</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 12mm, Titanium	4
	<b>TI-1241.14</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 14mm, Titanium	4
	<b>TI-1241.16</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 16mm, Titanium	4
	<b>TI-1241.18</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 18mm, Titanium	4
	<b>TI-1241.20</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 20mm, Titanium	4
	<b>TI-1241.22</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 22mm, Titanium	2
	<b>TI-1241.24</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 24mm, Titanium	2
	<b>TI-1241.26</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 26mm, Titanium	2
<b>TI-1241.28</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 28mm, Titanium	2	
<b>TI-1241.30</b>	2.7mm Wise-Lock Screws, Self-Tapping, (Star Head), Length 30mm, Titanium	2	

**GENERAL INSTRUMENTS**

**1138-12** Handle with Mini Quick Coupling, for Hand & Foot System



**1138-13** Handle With Quick Coupling (Straight), for Hand & Foot System



**1138-14** Depth Gauge measuring upto 30mm, for Hand & Foot System



**1138-15** Depth Gauge measuring upto 50mm, for Hand & Foot System



**1138-17** Screw Holding Forcecp, for Hand & Foot System



**1138-18** Cutting Forcecp, for Hand & Foot System



### GENERAL INSTRUMENTS

**1138-23** Torque Limiting attachment, 0.8Nm, with AO quick coupling - Hand & Foot System



**1138-24** Torque Limiting attachment, 0.4Nm, with AO Quick Coupling - Hand & Foot System



**1138-26** Hohmann Retractor, 15mm, for Hand & Foot System



**1138-27** Hohmann Retractor, 6.5mm, for Hand & Foot System



**1138-28** Periosteal Elevator, Round, for Hand & Foot System



**1138-29** Periosteal Elevator, Flat, for Hand & Foot System



**GENERAL INSTRUMENTS**

**1138-30** Cutting Plier (For pins and plates), for Hand & Foot System



**1138-31** Bending Pliers for Hand & Foot System



**1138-33** Reduction Forcep, Pointed, Small, for Hand & Foot System



**1138-36** Plate File, for Hand & Foot System



**1138-37** Reduction Forcep, Serrated Jaws, for Hand & Foot System



**1138-38** Star Screwdriver for 1.5mm Screws - Hand & Foot System



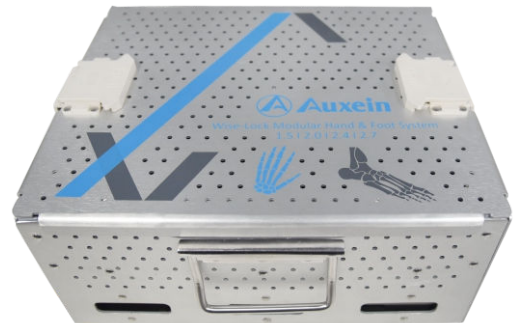
**1138-39** Star Screwdriver for 2.0mm Screws - Hand & Foot System

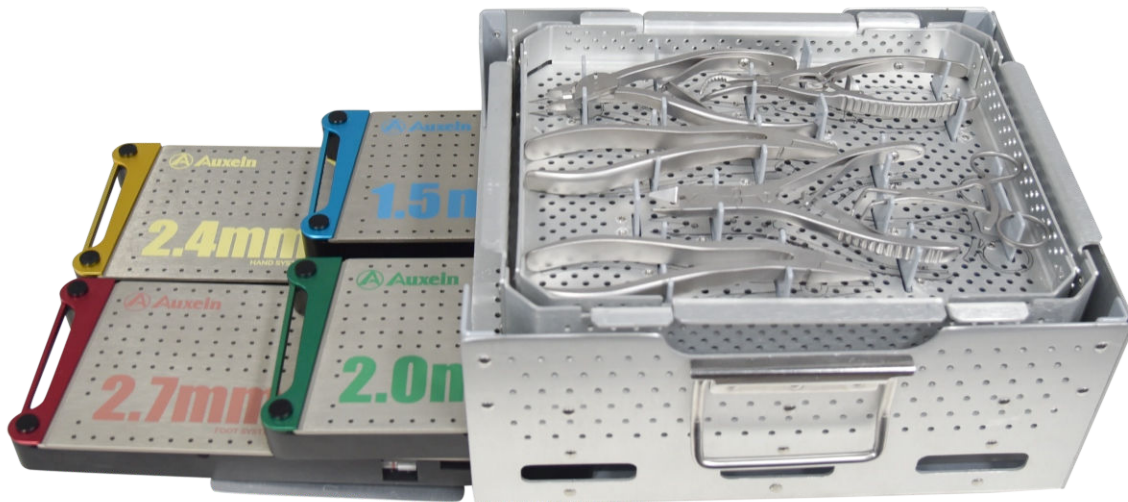


**1138-40** Star Screwdriver for 2.4/2.7mm Screws - Hand & Foot System



**1138-35** Container for Hand & Foot Instrument & Implant set



**5001-000 Modular Hand & Foot System Instrument Set**


Code	Items	Qty
1138-12	Handle with Mini Quick Coupling, for Hand & Foot System	1
1138-13	Handle With Quick Coupling (Straight), for Hand & Foot System	1
1138-14	Depth Gauge measuring upto 30mm, for Hand & Foot System	1
1138-15	Depth Gauge measuring upto 50mm, for Hand & Foot System	1
1138-17	Screw Holding Forcep, for Hand & Foot System	1
1138-18	Cutting Forcep, for Hand & Foot System	1
1138-23	Torque Limiting attachment, 0.8Nm, with AO quick coupling - Hand & Foot System	1
1138-24	Torque Limiting attachment, 0.4Nm, with AO Quick Coupling - Hand & Foot System	1
1138-26	Hohmann Retractor, 15mm, for Hand & Foot System	1
1138-27	Hohmann Retractor, 6.5mm, for Hand & Foot System	1
1138-28	Periosteal Elevator, Round, for Hand & Foot System	1
1138-29	Periosteal Elevator, Flat , for Hand & Foot System	1
1138-30	Cutting Plier (For pins and plates), for Hand & Foot System	1
1138-31	Bending Pliers for Hand & Foot System	2
1138-33	Reduction Forcep, Pointed, Small, for Hand & Foot System	1
1138-36	Plate File, for Hand & Foot System	1
1138-37	Reduction Forcep, Serrated Jaws, for Hand & Foot System	1
1138-38	Star Screwdriver for 1.5mm Screws - Hand & Foot System	1
1138-39	Star Screwdriver for 2.0mm Screws - Hand & Foot System	1
1138-40	Star Screwdriver for 2.4/2.7mm Screws - Hand & Foot System	1
1138-35	Container for Hand & Foot Instrument & Implant set	1

### Instruments For 2.7mm Wise-lock Modular Foot System

Code	Items	Qty
<b>1137-07</b>	Screwdriver Shaft, T8 For 2.4mm/2.7mm Screws	1
<b>1137-03</b>	Bending Pin With Thread For 2.4mm/2.7mm Wise-Lock Plates	2
<b>1137-09</b>	Holding Sleeve For 2.4/2.7mm Wise-Lock Screws	1
<b>1136-06</b>	Countersink For 2.0/2.4/2.7mm Screws	1
<b>1138-01</b>	Self-Centering Double Drill Guide Ø2.7/2.0mm	1
<b>1138-02</b>	Wise-Lock Drill Sleeve 2.7mm For Drill Bits Ø2.0mm	2
<b>1138-04</b>	Drill Bit Quick Coupling Ø2.0mm x Length 110mm, 2-Flute	2
<b>1138-05</b>	Drill Bit Quick Coupling Ø2.7mm x Length 102mm, 2-Flute	2
<b>1138-41</b>	Holding Sleeve For 2.7mm Cortical Screws	1
<b>1138-11</b>	Container with Tray and Lid For 2.7mm Implant & Instrument Set	1



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