

SURGICAL TECHNIQUE

ALP plate for anterolateral distal tibia titanium Tibi-AL



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SURGICAL TECHNIQUE

1. Introduction

This technique is proposed to describe the use of the instruments and TRAUFIX implants, without the intention of interfering with the experience and decisions of the orthopedic surgeon, since the vast clinical and surgical experience supports him to determine which is the best proposal for each particular patient. Therefore, this description of the product is not sufficient for its immediate clinical application. Hands-on training with an experienced surgeon is strongly recommended.

The anterolateral distal tibia plate system is designed to provide a versatile solution for treating fractures in this region. These implants enhance periarticular fixation through 2.7 mm locking screws in the distal portion, while delivering the necessary stiffness to address comminuted fractures and bone loss. A low-profile, carefully contoured and anatomically fitted design has been prioritized to minimize soft tissue irritation and support minimally invasive surgical techniques.

2. Anterolateral distal tibia plates

2.1 Implant features

The anterolateral plate features a row of 2.7 mm distal locking screws designed to address high-energy distal tibial pilon fractures. The use of 2.7 mm screws distally enables high-density screw placement and a low-profile periarticular fit, while 3.5 mm fixation throughout the rest of the plate provides strength. An oblong hole and K-wire holes aid in accurate plate positioning and temporary fixation. The anatomical contour of the Anterolateral Distal Tibial Plate ensures excellent bone surface adaptation.

- They are manufactured in titanium (Ti6Al4V ELI).
- They are supplied non-sterile.
- Two different plate designs to fit the right or left tibia.
- It has Kirschner wire holes which support the initial positioning of the plate to facilitate the adjustment with the least bone damage.
- Its anatomical design reduces the risk of soft tissue irritation.
- It has combined holes (LCP) along the body.
- Low Contact of the plate allows blood vascularization for the formation of the periosteum.

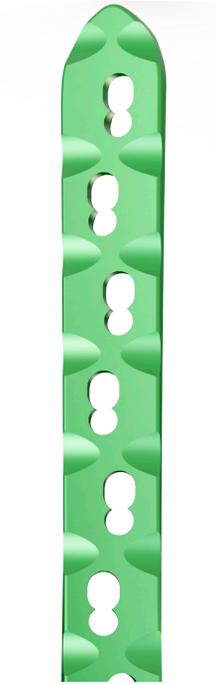


Image 1

CODE	DESCRIPTION	HOLES
613.13	ALP plate for right anterolateral distal tibia anterolateral right titanium 13 holes	13
613.11	ALP plate for right anterolateral distal tibia anterolateral right titanium 11 holes	11
613.09	ALP plate for right anterolateral distal tibia anterolateral right titanium 09 holes	09
613.07	ALP plate for right anterolateral distal tibia anterolateral right titanium 07 holes	07
613.05	ALP plate for right anterolateral distal tibia anterolateral right titanium 05 holes	05
614.13	ALP plate for anterolateral distal tibia left anterolateral left titanium 13 holes	13
614.11	ALP plate for anterolateral distal tibia left anterolateral left titanium 11 holes	11
614.09	ALP plate for anterolateral distal tibia left anterolateral left titanium 09 holes	09
614.07	ALP plate for anterolateral distal tibia left anterolateral left titanium 07 holes	07
614.05	ALP plate for anterolateral distal tibia left anterolateral left titanium 05 holes	05

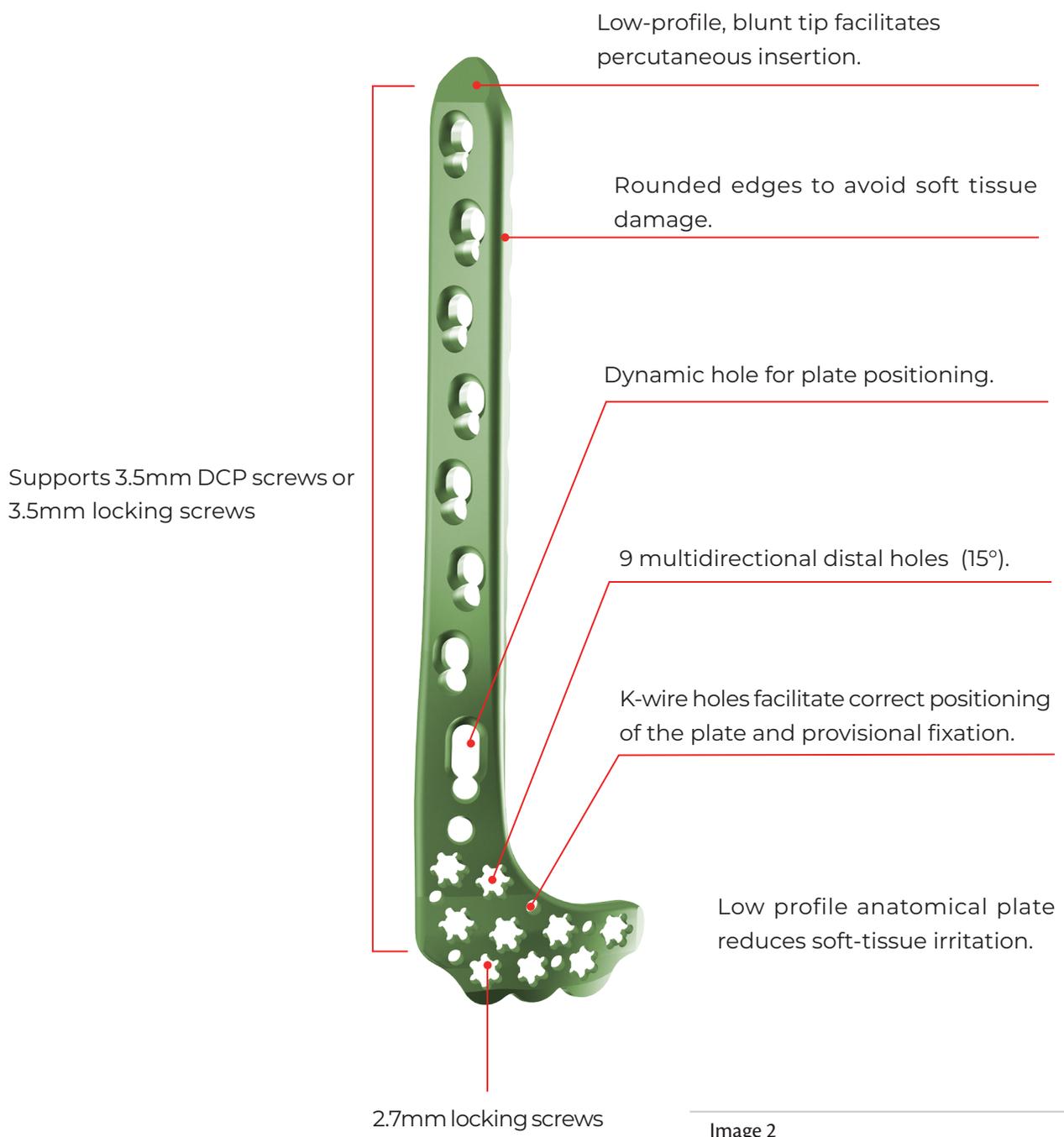


Image 2

2.2 Screws

- They are manufactured in titanium (Ti6Al4V ELI).
- They are supplied non-sterile.
- Hexagonal inlet.
- Self-Tapping.

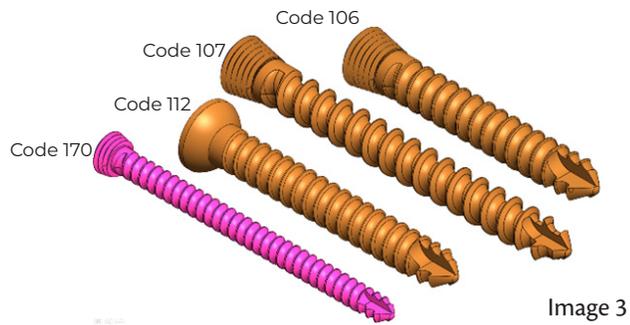


Image 3

CODE	DESCRIPTION	LENGTHS
106	3.5mm ALP titanium cortex screw	From 12mm to 40mm in increments of 2mm by 2mm. From 45mm to 60mm in increments of 5mm by 5mm.
107	ALP Titanium 3.5mm sponge screw	From 12mm to 40mm in increments of 2mm by 2mm From 45mm to 60mm in increments of 5mm by 5mm.
112	3.5mm titanium cortex screw	From 12mm to 40mm in increments of 2mm by 2mm. From 45mm to 60mm in increments of 5mm by 5mm.
170	2.7mm ALP titanium cortex screw	From 6mm to 50mm in increments of 2mm by 2mm. From 55mm to 60mm in increments of 5mm by 5mm.

3. Surgical indications

The LCP 3.5 anterolateral distal tibia plate is indicated for:

- Simple extra-articular and intra-articular fractures of the distal tibia.
- Distal tibia fractures that can be reduced percutaneously (through a small incision) or via a limited arthrotomy.
- Distal tibia fractures extending into the diaphyseal region.

4. General contraindications

- Systemic inflammatory response syndrome (to be assessed by the surgeon).
- Septicemia
- Osteomyelitis
- Patient unable to comply with postoperative care.
- Hypersensitivity to the material (Ti6Al4V ELI)

2. Surgical description

5.1 Patient positioning

The patient should be positioned supine on a radiolucent table. Fluoroscopy is recommended to adequately visualize the distal tibia in both lateral and anteroposterior views. The affected limb should rest on a padded support, with slight knee flexion to maintain neutral alignment. The contralateral leg should remain aligned with the tabletop plane (See Image 4).

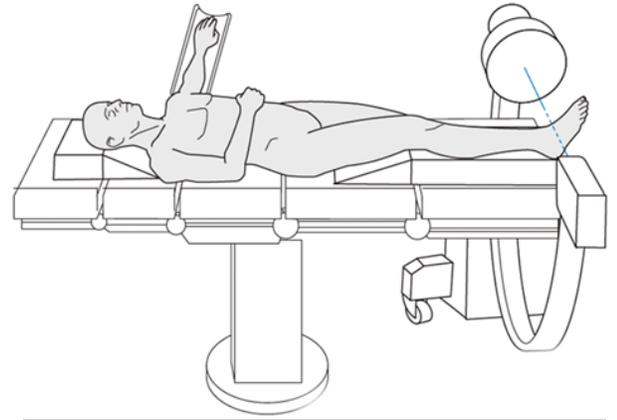


Image 4

5.2 Approach

The incision should be made longitudinally and straight, centered over the ankle region. Distally, its trajectory should follow a line parallel to the fourth metatarsal, while proximally, it should be positioned between the tibia and fibula. The proximal extension of the incision should reach approximately 7 to 8 centimeters above the joint. Distally, it may be extended to the level of the talonavicular joint, allowing visualization of the talar neck. If necessary, the joint may be opened via an arthrotomy (See Image 5).

Note: The superficial peroneal nerve typically crosses the surgical incision proximally to the ankle joint and must be protected throughout the procedure.

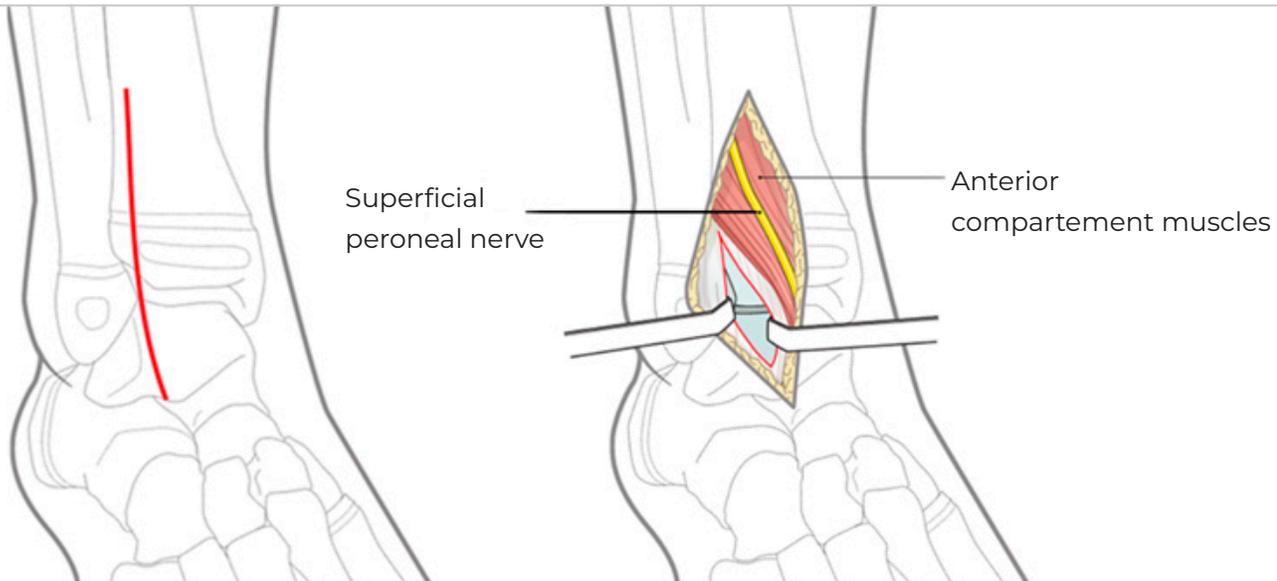


Image 5

5.3 Fracture reduction, articular surface

Articular reduction is confirmed using fluoroscopic imaging. Temporary reduction can be achieved with multiple Kirschner wires. These wires may be placed through the distal end of the plate to assist in provisional reduction and plate positioning.

Articular fractures must be anatomically reduced and compressed prior to fixation with the anterolateral distal tibia plate using locking screws.

Note: To ensure that the locking screws do not interfere with plate positioning, screw placement should be evaluated intraoperatively using anteroposterior and lateral fluoroscopic imaging

5.4 Plate introduction

Place the 3.5 mm drill guide into the most lateral hole of the second distal screw row. Slide the plate proximally through the previously created submuscular pocket. It is recommended to advance the plate upward first, then retract it distally into its final position (See image 6)

Once the plate is in position, drill through the 2.5 mm drill guide using a 2.5 mm drill bit. Measure the depth with a depth gauge, and insert a 3.5 mm cortical screw into the oblong hole. (See image 7).

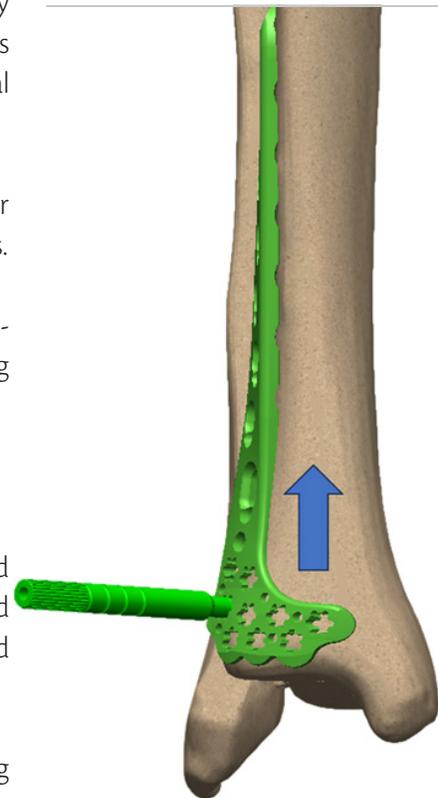


Image 6

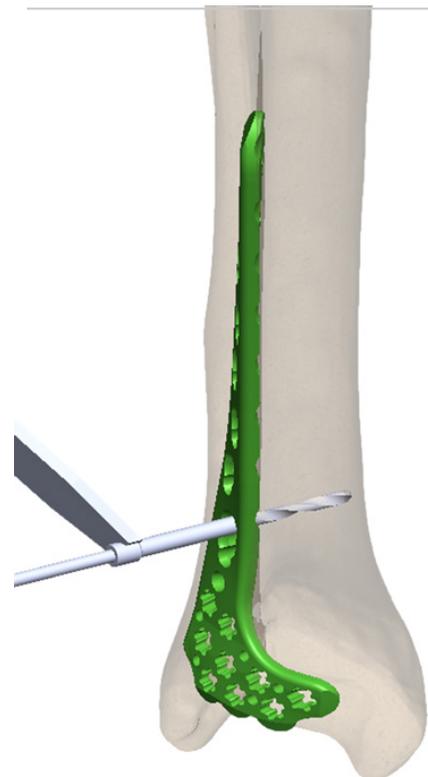
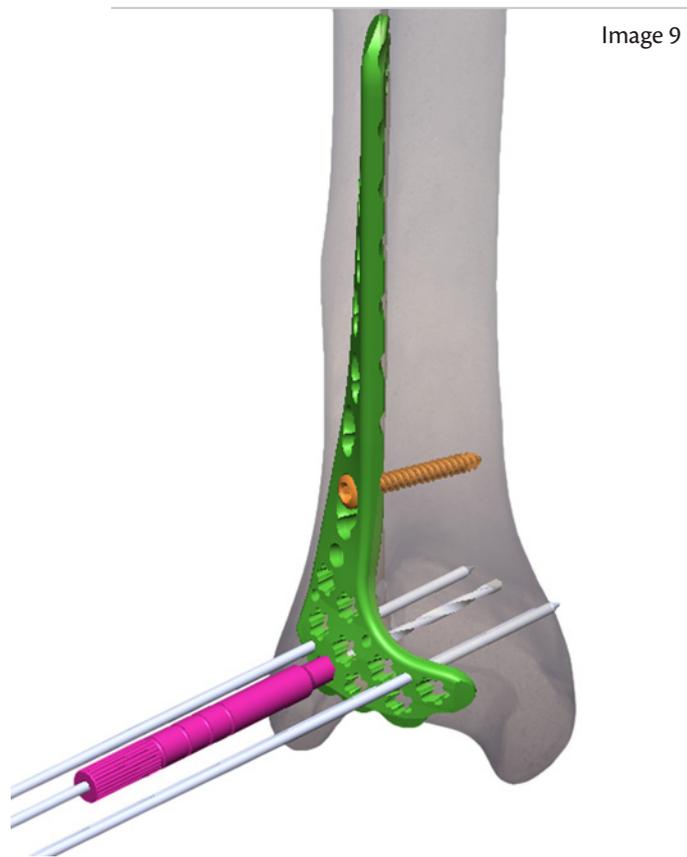


Image 7

Insert 2.0 mm Kirschner wires into the K-wire holes in the most distal row to secure the plate and verify the trajectory of the distal screw. On the lateral fluoroscopic image, the Kirschner wires should be positioned above the central portion of the tibial plafond and parallel to the joint line. The plate may be adjusted by loosening the 3.5 mm cortical screw in the oblong hole. (See image 8)

Use 2.7 mm cortical screws distally to bring the plate to the bone. Drill with the long 2.0 mm drill bit through the 2.0 mm drill guide, measure with the long depth gauge, and insert a 2.7 mm cortical screw. (See image 9)



Insert 3.5 mm locking screws in the second distal row as needed. Drill with the long 2.7 mm drill bit through the 2.7 mm threaded drill guide. Screw lengths can be read directly from the calibrated drill guide or measured with a depth gauge. (See image 10).

Once distal fixation is complete, insert 3.5 mm cortical or locking screws proximally, as needed. (See Image 11).

Image 10

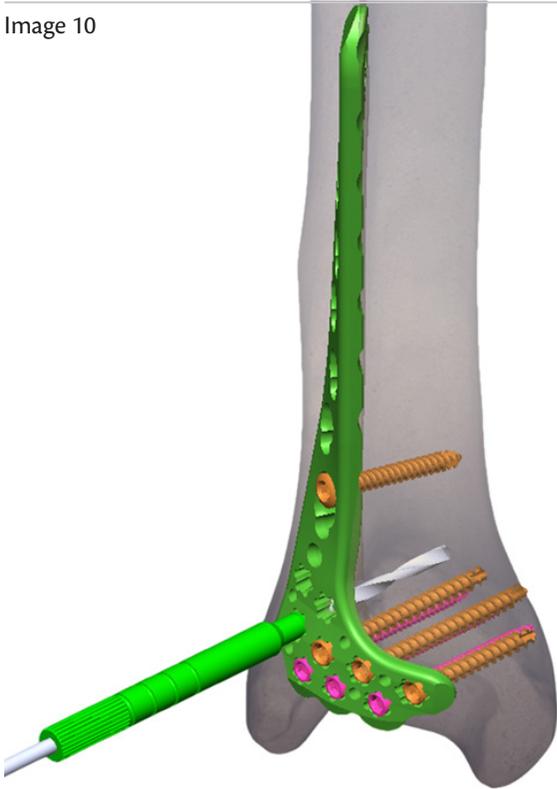
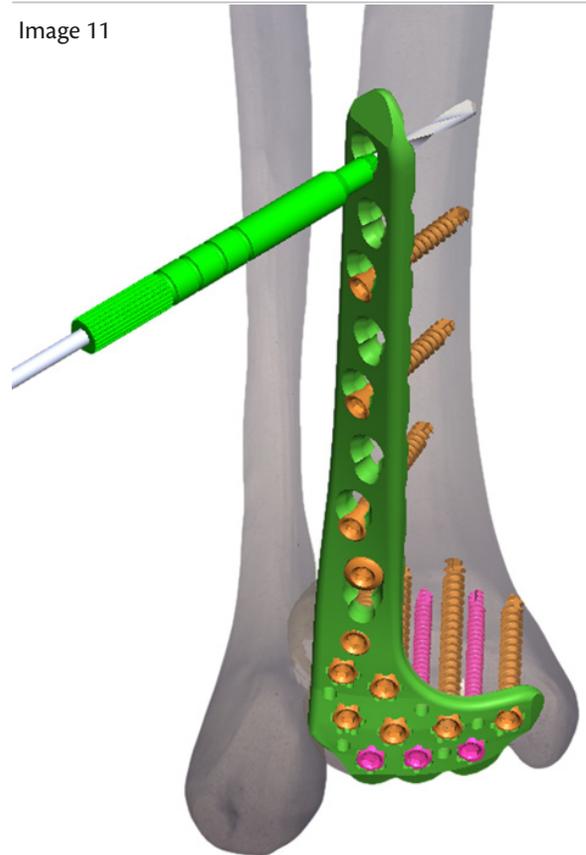
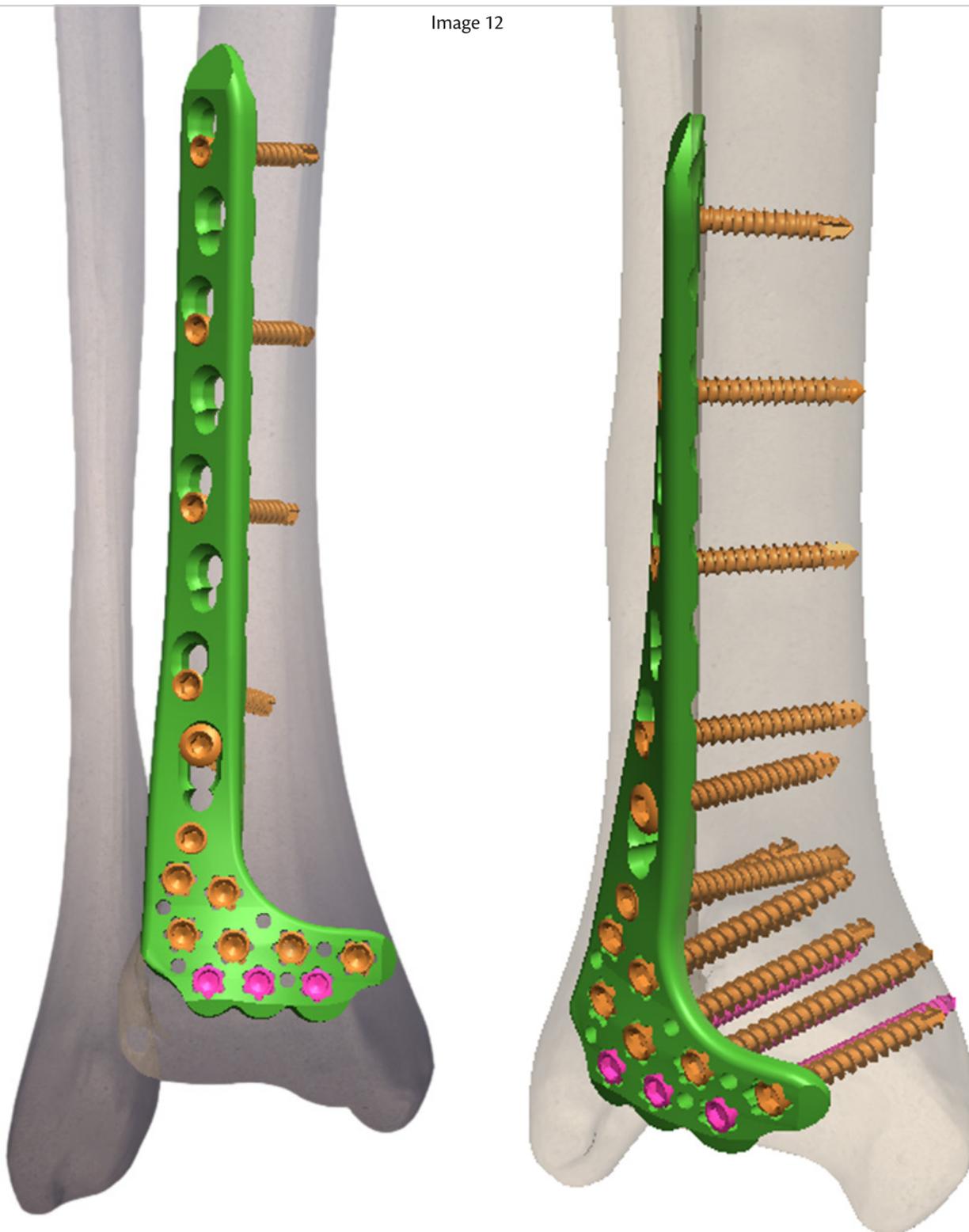


Image 11



Final image showing the anterolateral distal tibia plate in place with all screws positioned. X-rays confirm proper screw alignment and good plate fit to the bone. (See image 12).

Image 12



5.5 Implant removal

The decision to remove the implant rests with the treating physician. Implant removal is recommended once the consolidation process is complete, provided it is feasible and appropriate for the patient.

To remove the screws, first clear the screw head by eliminating any tissue that may have penetrated the hexagonal recess to ensure proper engagement of the screwdriver and reduce the risk of screw head damage that may hinder removal. Unscrew all screws and remove them prior to extracting the plate.

6. Instruments

The instrumentation required for plate implantation is the “Small Fragment Multi-System” set, as can be seen in images 13, 14, 15 and 16. Any additional instruments are left to the surgeon’s discretion.

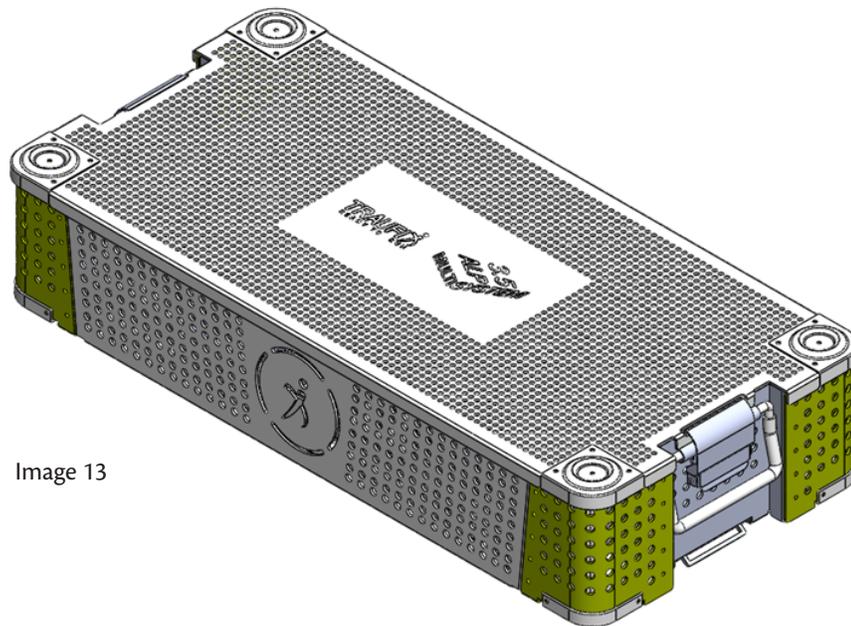


Image 13

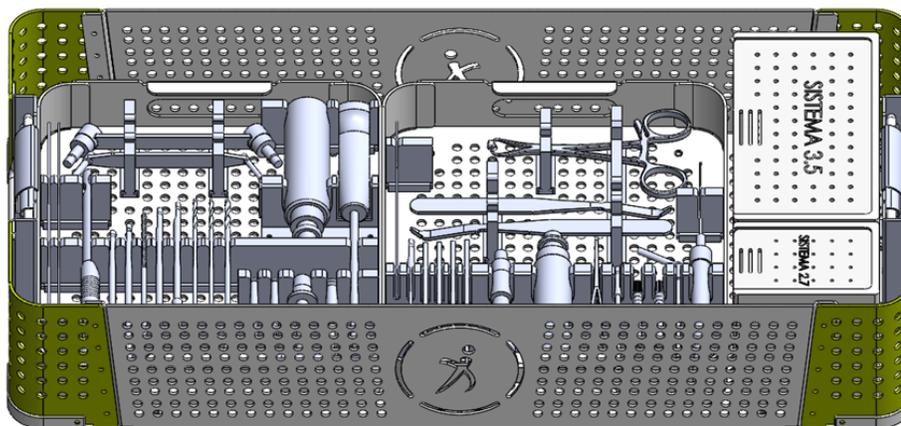


Image 14

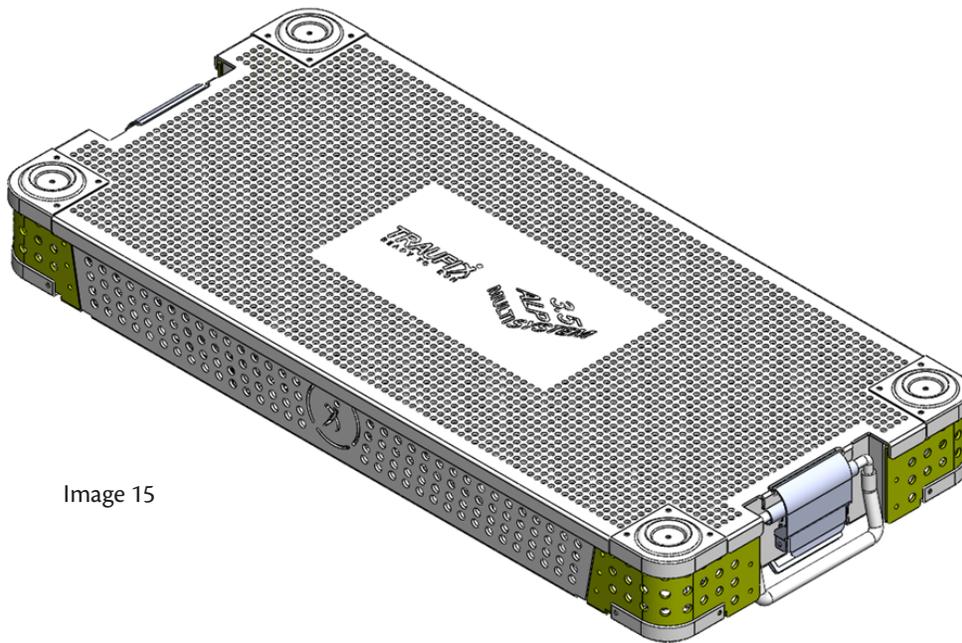


Image 15

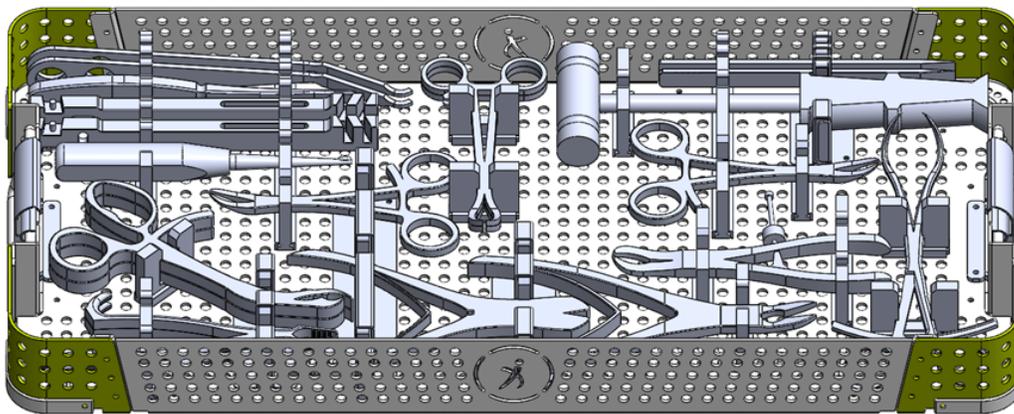


Image 16

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