ST

SURGICAL
TECHNIQUE

enovis™

ARSENAL ANKLE PLATING SYSTEM™

COVERED FROM ALL ANGLES

PLATING SYSTEM

TABLE OF CONTENTS

A COMMANDING ANKLE PLATING PORTFOLIO ADDRESSING BOTH TRI-MALLEOLAR AND INTRA-ARTICULAR FRACTURE PATTERNS

DJO® is a manufacturer of orthopedic implants and does not practice medicine. This surgical technique was prepared in conjunction with licensed health care professionals, with special thanks to Drs. Christopher Juels, DPM and Daniel Perez, DPM, FACFAS. The treating surgeon is responsible for determining the appropriate treatment, technique(s), and product(s) for each individual patient.

See package insert for complete list of potential adverse effects, contraindications, warnings and precautions.

A workshop training is recommended prior to performing your first surgery. All non-sterile devices must be cleaned and sterilized before use.

Multi-component instruments must be disassembled for cleaning. Please refer to the corresponding assembly/disassembly instructions, if applicable. Please remember that the compatibility of different product systems has not been tested unless specified otherwise in the product labeling.

The surgeon must discuss all relevant risks including the finite lifetime of the device with the patient.

WHY ARSENAL ANKLE PLATING SYSTEM?

The Arsenal Ankle Plating System provides a plating portfolio to address both tri-malleolar and intra-articular fracture patterns with the availability to use Utility Plates (Straight, Tubular, Buttress), Lateral Fibula (Non and Symmetric), Posterior Fibula, Medial Malleolus, Hook, Tension Band, Posterior Tibia, Anterior Tibia, and Anterolateral Tibia plate options. All plates are designed to be sturdy where it counts and low-profile in areas of importance with the ability to accept any solid-core diameter screw in any of the plate's recessed holes.

Arsenal's patented variable angle locking technology, allowing a 60° cone of angulation, multi-lock functionality, accepting repeatable lock and relock of screw to plate interface up to 5 times, and dual lead screws makes for a powerful combination of patented and innovative solutions.

With a comprehensive malleoli fixation offering the Arsenal Plating System Additionally Introduces exclusive solutions to address malleoli fractures.
A cannulated implant that strategically segues from cortical to cancellous thread types to capture all bone densities in the Tibia and the Modernization of the proven AO technique of tension band wiring.
The Arsenal Ankle Tension Band Plate mimics the screw/wire construct with less steps and security of a plate.

"The plates are stout where it matters and sleek where needed which makes a difference when treating complex ankle and distal tibia fractures in the OR."
– Matthew Herring, MD

INDICATIONS, CONTRAINDICATIONS, & WARNINGS

INDICATIONS
ARSENAL ANKLE PLATING SYSTEM™

The Arsenal Ankle Plating System™ is intended for use in trauma and reconstructive procedures of the small bones in the hand/foot, ankle, and other bones appropriate for the size of the device. The plates (implants), screws (implants), olive wires (instruments), and guide wires (instruments) are intended for single use only.

CONTRAINDICATIONS
ARSENAL ANKLE PLATING SYSTEM

Use of the Arsenal Ankle Plating System is contraindicated in cases of active or suspected infection or in patients who are immunocompromised, previously sensitized to titanium, or with certain metabolic diseases. It is further contraindicated in patients exhibiting disorders that would cause the patient to ignore the limitations of internal fixation.

WARNINGS
ARSENAL ANKLE PLATING SYSTEM

1. Re-operation to remove or replace implants may be required at any time due to medical reasons or device failure. If corrective action is not taken, complications may occur.
2. Use of an undersized implant in areas of high functional stresses may lead to implant fracture and failure.
3. Instruments, guide wires, olive wires, and screws are to be treated as sharps.
4. Re-use of devices indicated as single use can result in decreased mechanical and clinical performance of devices.

REFERENCE INSTRUCTIONS FOR USE
900-01-022, Rev A

SYSTEM COMPONENTS

PLATES

37 plates within 9 plate families address any ankle fracture personality.

ANTERIOR TIBIA

Features angled distal screw trajectories designed to provide superior strength and fixation to have the ability to capture all fragment pieces with transitional thickness above this cluster.

8-HOLE ANTERIOR TIBIA

10-HOLE ANTERIOR TIBIA

TENSION BAND

Most used on avulsion and transverse fractures patterns of the Medial Malleolus, the Tension Band modernizes the proven AO technique of tension band wiring by mimicing the screw/wire construct with less steps and security of a plate.

TENSION BAND

POSTERIOR TIBIA

Contoured to the posterior tibia to treat posterior pilon variant fractures or large trimalleolar posterior tibia fragments

Available in 4- and 6- hole plates

4-HOLE POSTERIOR TIBIA

6-HOLE POSTERIOR TIBIA

HOOK

Distal tines has a counterbore feature that allows a partially threaded 4.0mm cannulated to be inserted to allow more compression to be achieved.

Available in 4- and 6- hole plates

4-HOLE HOOK

6-HOLE HOOK

SYSTEM COMPONENTS

ANTEROLATERAL TIBIA

Features angled distal screw trajectories designed to provide superior strength and fixation to have the ability to capture all fragment pieces while proximal plate curves to mate with the anterior surface of the tibia

Available in 7-, 9-, 11- hole plates

7-HOLE ANTEROLATERAL TIBIA (LEFT & RIGHT)

9-HOLE ANTEROLATERAL TIBIA (LEFT & RIGHT)

11-HOLE ANTEROLATERAL TIBIA (LEFT & RIGHT)

SYSTEM COMPONENTS

LATERAL FIBULA

Distal screw cluster paired with the variable cone of angulation at 60° allows for multiple points of fixation in the lateral malleolus.

Available in 8-, 10-, 12- Hole plates symmetric and 6-, 8-, 10- hole plates anatomic

8-HOLE SYMMETRIC LATERAL FIBULA

10-HOLE SYMMETRIC LATERAL FIBULA

12-HOLE SYMMETRIC LATERAL FIBULA

6-HOLE NON-SYMMETRIC LATERAL FIBULA (LEFT & RIGHT)

8-HOLE NON-SYMMETRIC LATERAL FIBULA (LEFT & RIGHT)

10-HOLE NON-SYMMETRIC LATERAL FIBULA (LEFT & RIGHT)

SYSTEM COMPONENTS

UTILITY

The straight plate in the Arsenal Ankle Plating System is a universal plate that can be used to treat multiple different fracture patterns on the tibia and fibula. The scalloped plate design is intended for ease of plate contouring to the anatomy and minimize the plates footprint.

Available in 4-, 6-, 8-, 10-, 12- hole plates

BUTTRESS

6-HOLE STRAIGHT

8-HOLE STRAIGHT

10-HOLE STRAIGHT

12-HOLE STRAIGHT

UTILITY (CONTINUED)

The 1/3 tubular plate can be used to treat multiple fracture patterns on the tibia and fibula in patients with poor bone quality where increased stiffness is required.

Available in 6-. 8-. 10-, 12- hole plates

6-HOLE TUBULAR

8-HOLE TUBULAR

10-HOLE TUBULAR

12-HOLE TUBULAR

SYSTEM COMPONENTS

POSTEROLATERAL FIBULA

Angled distal screw hole to avoid the tendons and follow the anatomy of the posterior fibula. The distal end of the plate thins to about 1.0mm, which ensures low palpability.

Available in 6-, and 9- Hole plates

6-HOLE POSTEROLATERAL FIBULA (RIGHT & LEFT)

9-HOLE POSTEROLATERAL FIBULA (RIGHT & LEFT)

MEDIAL MALLEOLUS

Designed to address various types of medial malleolus fracture types

Available in 7- and 9- hole plates

7-HOLE MEDIAL MALLEOLUS

9-HOLE MEDIAL MALLEOLUS

SCREWS

LOCKING CORTICAL (2.7 & 3.5 MM)

4.0 MM LOCKING CANCELLOUS

NON-LOCKING CORTICAL (2.7 & 3.5 MM)

4.0 MM NON-LOCKING CANCELLOUS

4.0 MM CANNULATED

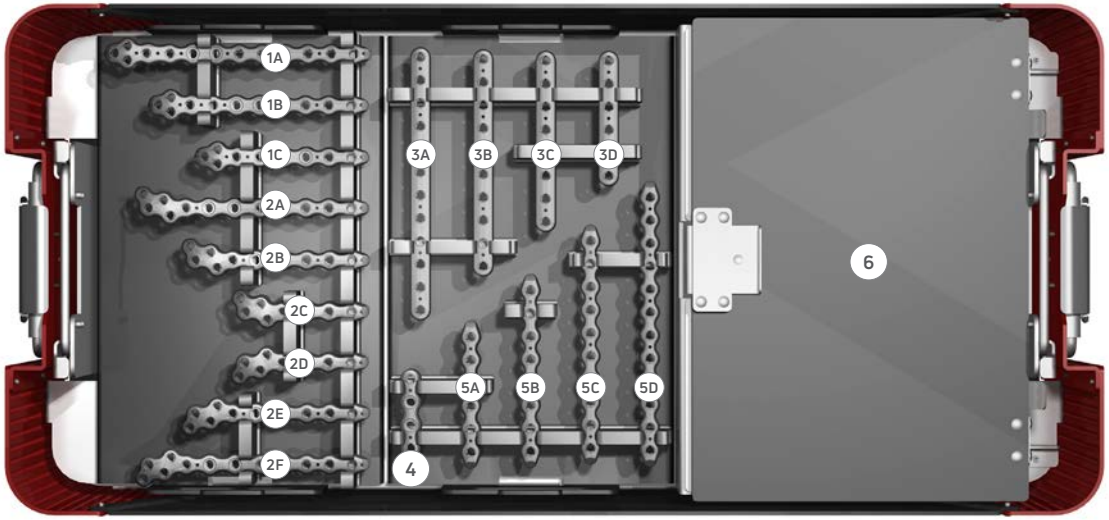
MALLEOLUS IMPLANT

A purposefully designed cannulated implant transitioning a 3.5mm cortical to 4.5mm cancellous thread pitch to capture varying bone densities in the Tibia. The cancellous threads on the implant were deliberate to capture the epiphyseal scar whereas the cortical threads provide fixation of the distal cortices.

MALLEOLUS IMPLANT (65 MM – 100 MM)

INSTRUMENT TRAY

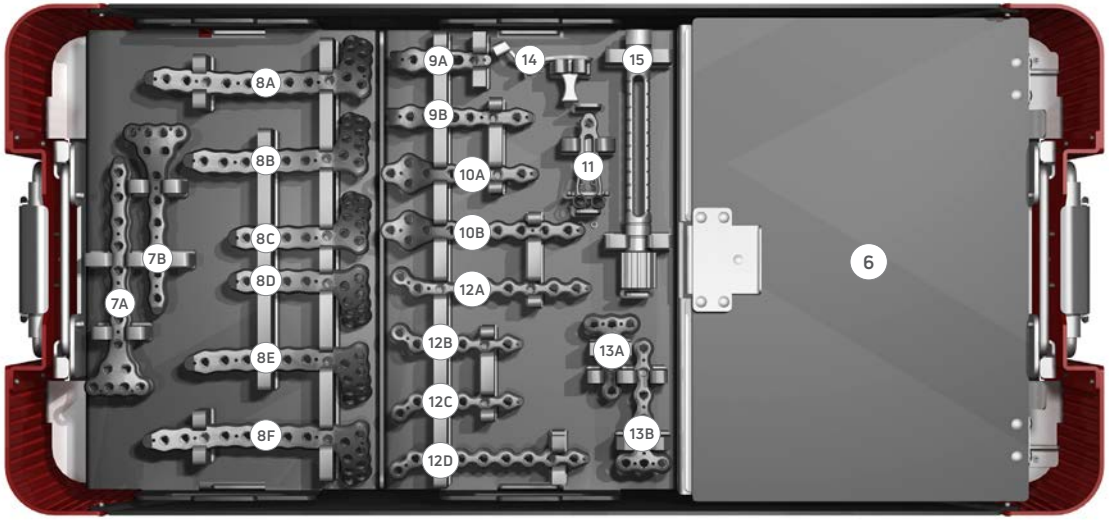
UPPER SUBLEVEL



#	DESCRIPTION	PART #	QTY
1A	12-HOLE SYMMETRIC LATERAL FIBULA PLATE	300-92-003	2
1B	10-HOLE SYMMETRIC LATERAL FIBULA PLATE	300-92-002	2
1C	8-HOLE SYMMETRIC LATERAL FIBULA PLATE	300-92-001	2
2A	10-HOLE NON-SYMMETRIC LATERAL FIBULA PLATE, RIGHT	300-93-006	2
2B	8-HOLE NON-SYMMETRIC LATERAL FIBULA PLATE, RIGHT	300-93-004	2
2C	6-HOLE NON-SYMMETRIC LATERAL FIBULA PLATE, RIGHT	300-93-002	2
2D	6-HOLE NON-SYMMETRIC LATERAL FIBULA PLATE, LEFT	300-93-001	2
2E	8-HOLE NON-SYMMETRIC LATERAL FIBULA PLATE, LEFT	300-93-003	2
2F	10-HOLE NON-SYMMETRIC LATERAL FIBULA PLATE, LEFT	300-93-005	2
3A	12-HOLE TUBULAR PLATE	300-90-004	2
3B	10-HOLE TUBULAR PLATE	300-90-003	2
3C	8-HOLE TUBULAR PLATE	300-90-002	2
3D	6-HOLE TUBULAR PLATE	300-90-001	2

#	DESCRIPTION	PART #	QTY
4	BUTTRESS PLATE	300-91-001	2
5A	6-HOLE STRAIGHT PLATE	300-91-002	2
5B	8-HOLE STRAIGHT PLATE	300-91-003	2
5C	10-HOLE STRAIGHT PLATE	300-91-004	2
5D	12-HOLE STRAIGHT PLATE	300-91-005	2
6	2.7MM, 3.5MM, 4.0MM SCREW CADDY	340-01-202	1

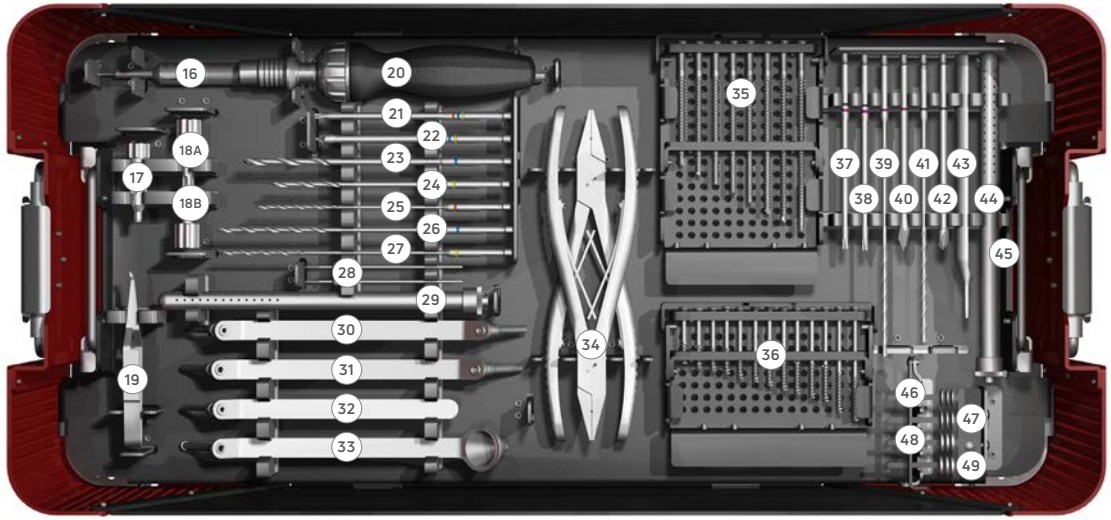
UPPER SUBLEVEL



#	DESCRIPTION	PART #	QTY
7A	10-HOLE ANTERIOR TIBIA PLATE	300-10-002	1
7B	8-HOLE ANTERIOR TIBIA PLATE	300-10-001	1
8A	11-HOLE ANTEROLATERAL TIBIA PLATE, RIGHT	300-11-006	1
8B	9-HOLE ANTEROLATERAL TIBIA PLATE, RIGHT	300-11-004	1
8C	7-HOLE ANTEROLATERAL TIBIA PLATE, RIGHT	300-11-002	1
8D	7-HOLE ANTEROLATERAL TIBIA PLATE, LEFT	300-11-001	1
8E	9-HOLE ANTEROLATERAL TIBIA PLATE, LEFT	300-11-003	1
8F	11-HOLE ANTEROLATERAL TIBIA PLATE, LEFT	300-11-005	1
9A	4-HOLE HOOK PLATE	300-97-001	2
9B	6-HOLE HOOK PLATE	300-97-002	2
10A	7-HOLE MEDIAL MALLEOLAR PLATE	300-95-001	2
10B	9-HOLE MEDIAL MALLEOLAR PLATE	300-95-002	2
11	TENSION BAND PLATE	300-96-001	2

#	DESCRIPTION	PART #	QTY
12A	9-HOLE POSTERIOR FIBULA PLATE, LEFT	300-94-003	2
12B	6-HOLE POSTERIOR FIBULA PLATE, LEFT	300-94-001	2
12C	6-HOLE POSTERIOR FIBULA PLATE, RIGHT	300-94-002	2
12D	9-HOLE POSTERIOR FIBULA PLATE, RIGHT	300-94-004	2
13A	4-HOLE POSTERIOR TIBIA PLATE	300-12-001	2
13B	6-HOLE POSTERIOR TIBIA PLATE	300-12-002	2
14	HOOK PLATE DRILL GUIDE	340-00-002	1
15	HOOK PLATE TAMP	340-00-003	1
6	2.7MM, 3.5MM, 4.0MM SCREW CADDY	340-01-202	1

LOWER SUBLEVEL

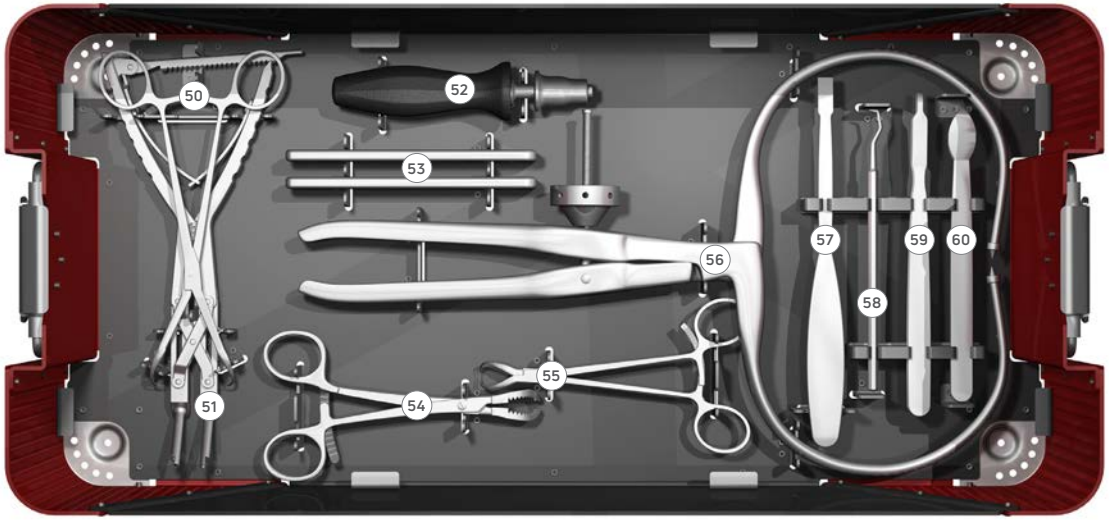


#	DESCRIPTION	PART #	QTY
16	2.7MM/3.5MM/4.0MM SCREW DEPTH GAUGE	340-00-005	1
17	DRILL TOWER OUTER SLEEVE	330-00-020	1
18A	DRILL TOWER 2.7/4.0MM INSERT	330-00-021	1
18B	DRILL TOWER 3.5MM INSERT	330-00-022	1
19	FORCEPS	340-00-019	1
20	RACHETING HANDLE	210-00-004	1
21	2.7/3.5/4.0MM SCREW DRIVER BIT	330-10-003	3
22	2.7/3.5/4.0MM COUNTERSINK	330-27-002	1
23	3.5MM OVERDRILL BIT	340-35-011	2
24	2.7MM OVERDRILL BIT	340-27-011	2
25	4.0MM DRILL BIT	340-40-001	3
26	3.5MM DRILL BIT	340-35-001	3
27	2.7MM DRILL BIT	340-27-001	3

#	DESCRIPTION	PART #	QTY
28	0.062" x 3" OLIVE WIRES	340-60-005	10
29	0.062" X 6" K-WIRE, STANDARD (WITHIN TUBE)	210-60-004	10
30	2.7MM DRILL SLEEVE	340-27-006	1
31	3.5MM DRILL SLEEVE	340-35-006	1
32	4.0MM DRILL SLEEVE	340-40-006	1
33	VARIABLE/STATIC ANGLE DRILL GUIDE	340-00-001	1
34	BENDING PLIERS	330-00-010	2
35	MALLEOLUS IMPLANTS (65MM - 100MM)	309-45-0XX	2ea
36	4.0 MM CANNULATED SCREWS (30MM - 60MM)	201-40-0XX	2ea
37	SOLID CORE REMOVAL BIT	340-15-007	2
38	CANNULATED DRIVER BIT	340-15-003	2
39	MALLEOLUS IMPLANT DRILL BIT	340-45-001	2

#	DESCRIPTION	PART #	QTY
40	MALLEOLUS IMPLANT COUNTERSINK	340-45-002	1
41	4.0 CANNULATED DRILL BIT	211-40-001	2
42	4.0 CANNULATED COUNTERSINK	211-40-002	1
43	CANNULATED DEPTH GAUGE	211-40-004	1
44	0.045" K-WIRE STANDARD & PARTIAL THREAD (WITHIN TUBE)	210-40-004 210-40-005	5ea
45	ARSENAL ANKLE ALL SCREW REMOVER	340-00-009	1
46	SMOOTH WASHER, CANNULATED	200-45-001	3
47	RIDGED WASHER, CANNULATED	200-45-003	3
48	SMOOTH WASHER, ARSENAL	303-90-001	3
49	RIDGED WASHER, ARSENAL	303-90-002	3

TRAY BASE



#	DESCRIPTION	PART #	QTY
50	WEBER POINTED CLAMP	320-00-003	1
51	PARALLEL DISTRACTOR	340-00-004	1
52	STANDARD HANDLE	320-00-005	1
53	BENDING IRONS	340-00-006	2
54	SERRATED (LOBSTER) BONE CLAMP	320-00-001	2
55	POINT TO POINT CLAMP	340-00-007	2
56	PERIARTICULAR REDUCTION (SYNDESMOTIC) CLAMP	340-00-008	1
57	PERIOSTEAL ELEVATOR	340-00-010	1
58	BONE PICK	320-00-013	1
59	8MM HOHMANN RETRACTOR	320-00-011	2
60	15MM HOHMANN RETRACTOR	340-00-011	2

SET-UP

Patient is positioned supine such that the foot is near the end of the table or in lateral decubitus, based on surgeon preference or fracture extent.

A longitudinal incision is made over the lateral aspect of the fibula, appropriately sized for the fracture pattern and anticipated plate length. Soft tissue dissection is continued until the fracture site is visible. Care should be taken during proximal dissection to identify and protect the crossing peroneal nerve. The fracture site is identified and debrided. Fracture reduction is performed and temporary stabilization is achieved using a K-wire, Pointed Reduction Forceps, or a Lobster Claw Clamp, per surgeon preference.

LATERAL FIBULA PLATE FEATURING USE OF AN INDEPENDENT LAG SCREW

In this instance a 3.5mm fully threaded, non-locking Arsenal Ankle screw is used as a lag screw across the fracture site prior to plate fixation.

1. Use the 3.5mm Over Drill with the over drill side of the 3.5mm Drill Sleeve to perform a lag by drilling technique (FIGURE 1). Maintaining position, flip the Drill Guide to pilot drill across the fracture line bicortically with the 3.5mm Pilot Drill (FIGURE 2).

⚠ WARNING: Take care not to violate the fracture line with the Over Drill.

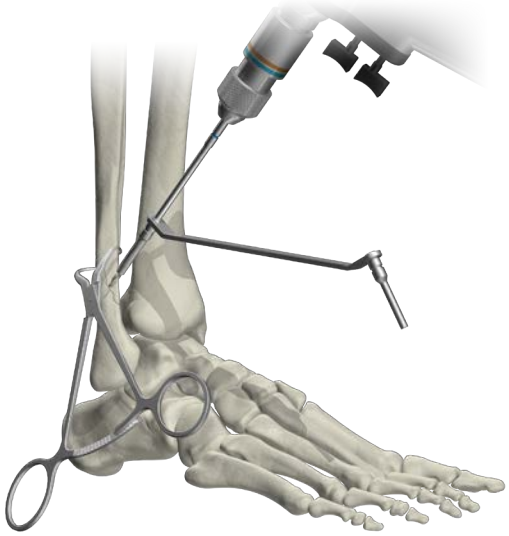


FIGURE 1

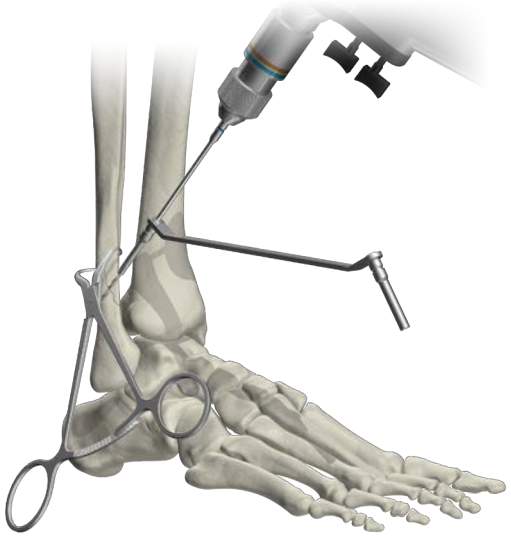


FIGURE 2

2. Countersink the proximal cortex with the Arsenal Ankle Screw Countersink.

3. Measure the screw length utilizing the provided Arsenal Ankle Depth Gauge (FIGURE 3). Select desired 3.5mm screw length. Insert screw into the pilot hole and drive into position rotating clockwise with the driver.

Proceed to plate placement upon interfragmentary screw insertion.

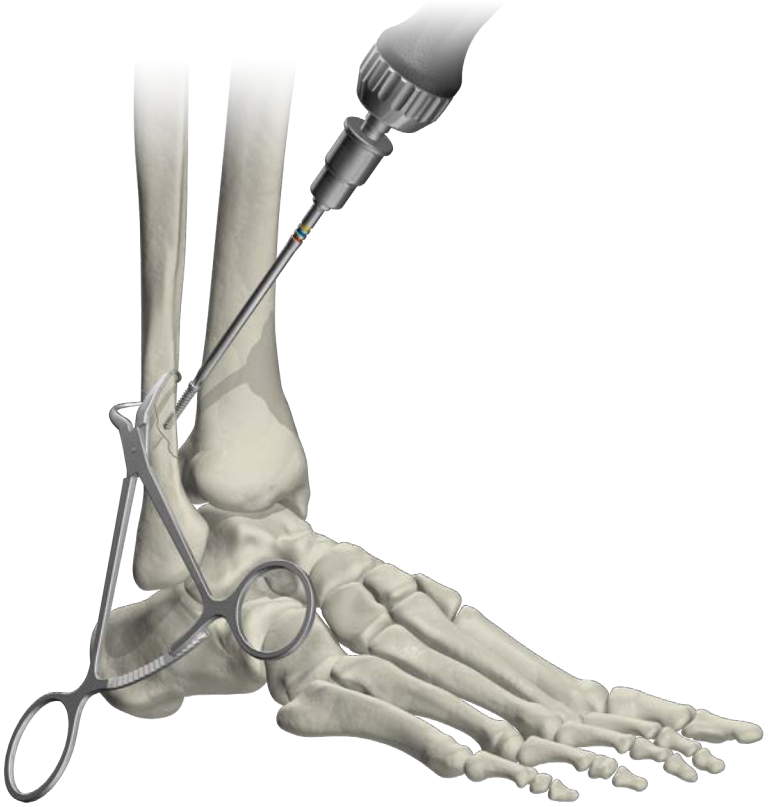


FIGURE 3

LATERAL FIBULA PLATE PLACEMENT FEATURING THE SYNDESMOTIC TENACULUM CLAMP

1. The fracture site is identified and debrided. Fracture reduction is performed. If the fracture morphology is amenable, an independent lag screw can be inserted first, as shown in FIGURE 4. Temporary stabilization is achieved using K-wires or a clamp, per surgeon preference.

2. Select the appropriately sized lateral fibula plate for the fracture type and size. The symmetric lateral fibula plate is intended to sit further distally than the non-symmetric lateral fibula plate. Temporarily fixate the plate to the lateral fibula by placing 1-2 Olive Wires or K-wires in the plate's screw holes or temporary fixation holes, per surgeon preference (FIGURE 5). Confirm plate placement using fluoroscopy.

⚠ PRECAUTION: Though plates are pre-contoured, slight adjustments may be required and made using the plate bending instruments.

⚠ WARNING: Excessive or multiple plate bends could cause weakness in the plate.

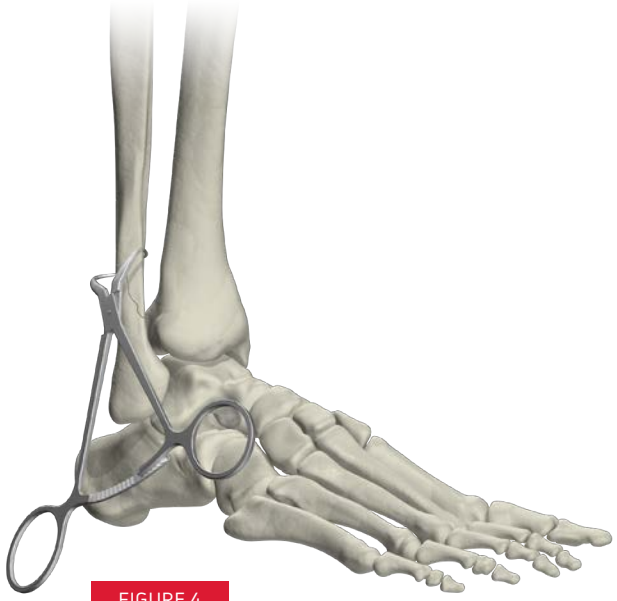


FIGURE 4

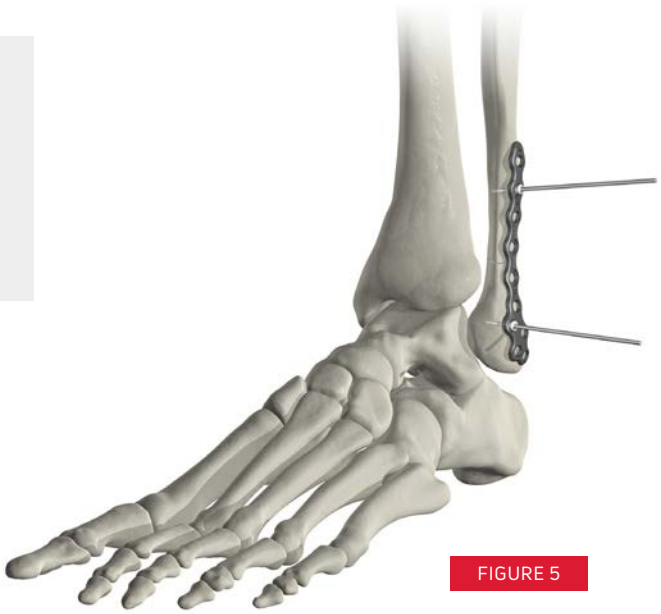


FIGURE 5

3. All plate holes accept 2.7mm, 3.5mm, and 4.0mm locking and non-locking screws. Drill for the desired screw diameter utilizing the appropriate Drill Sleeve placed into the first plate hole nearest the fracture site. Drill the pilot hole with the corresponding drill diameter at the desired angle of approach through the drill sleeve. Take care to leave the plate's syndesmotic holes empty if syndesmotic fixation is desired. For distal screws, take care not to drill past the far cortex and penetrate into the lateral gutter of the ankle joint.

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

⚠ WARNING: If the variable angle drill guide is used, locking screw placement angle is possible up to 30° off axis (60° cone of angulation).

4. Insert the Arsenal Ankle Depth Gauge into the pilot hole to determine screw length. Select desired screw length and type. Insert screw into the pilot hole and drive into position rotating clockwise with the driver.

5. Repeat steps 3-4 to fill the remaining screw holes as desired. The same steps are used for both locking and non-locking screws. Confirm screw placement under fluoroscopy throughout fixation to ensure positioning.

6. If syndesmotic fixation is necessary, a Syndesmotic Tenaculum Clamp is available within the lower level of the tray to assist in reduction of the syndesmosis. A small stab incision is made over the distal medial tibia with blunt dissection carried down to bone. Place the olive portion of the clamp into the medial incision and into the distal fibula (FIGURE 6). Reduction of the syndesmosis is performed by closing the handles together and utilizing the dial in mechanism to maintain position of the clamp. Placement of one or two 3.5mm non-locking screws (or placement of a flexible syndesmotic fixation device) can be performed following reduction of the syndesmosis. Ensure that the ankle is held in a dorsiflexed position during clamp tightening to prevent over compression of the syndesmosis.

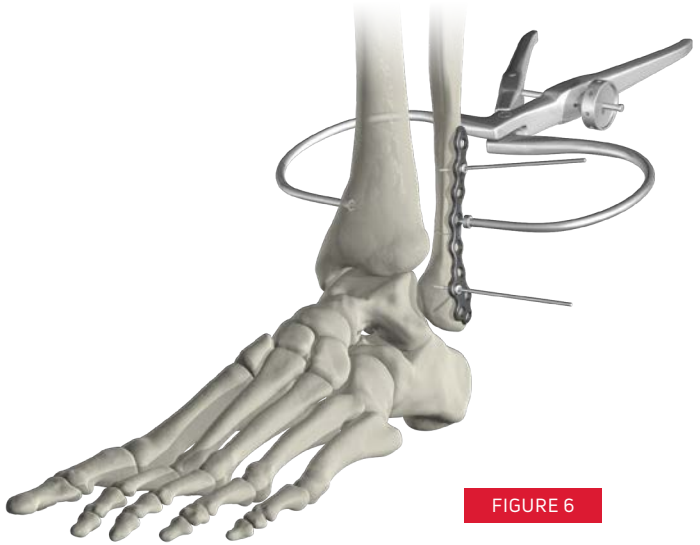


FIGURE 6

LATERAL FIBULA PLATE SURGICAL TECHNIQUE

7. Once appropriate reduction is achieved, placement of one or two 3.5mm non-locking cortical screws can be performed following steps 3-4. If 2 screws are desired for rigid syndesmotic fixation, remove the syndesmotic Tenaculum Clamp to allow space to place a second 3.5mm non-locking screw.

8. Proceed to incision closure or adjunctive procedures.

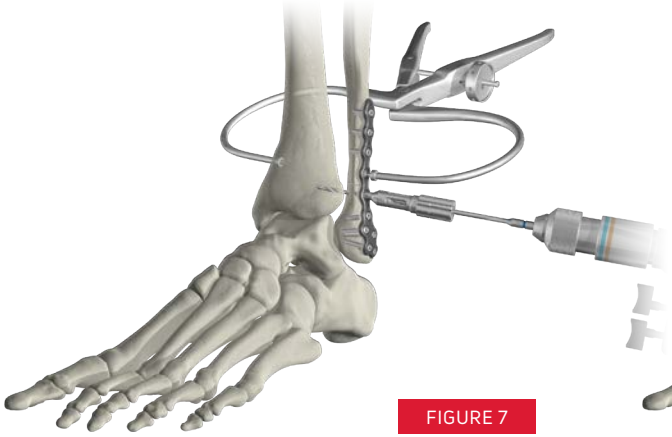


FIGURE 7

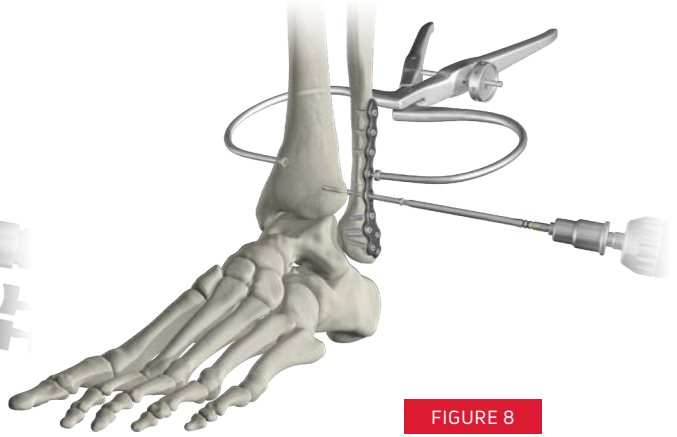


FIGURE 8

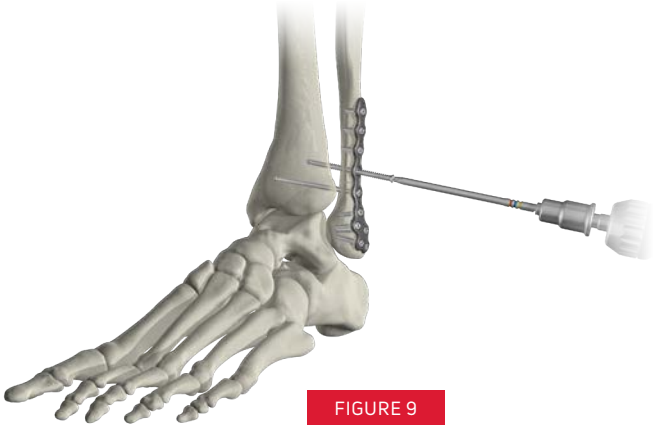


FIGURE 9

FIGURE 10

NON-SYMMETRIC LATERAL FIBULA

FIGURE 11

SYMMETRIC LATERAL FIBULA

POSTEROLATERAL FIBULA PLATE SURGICAL TECHNIQUE

SET-UP

Posterior or posterolateral plate placement can be achieved through a lateral or posterolateral incision. Incision placement and patient positioning may be dependent on fibular fracture pattern and the presence and extent of a tibial fracture and planned fixation.

A lateral incision may require supine or lateral decubitus patient position with the foot near the end of the table. For a posterolateral incision, the patient is positioned in the lateral decubitus position or prone, per surgeon preference. Soft tissue dissection is carried down until the fracture site is visible. Retract the peroneal tendons to allow for plate and screw placement.

TECHNIQUE

1. The fracture site is identified, mobilized, debrided, and reduced. Temporary stabilization is achieved using K-wires or a clamp, per surgeon preference (FIGURE 12).

2. Select the posterolateral fibula plate appropriate for the fracture type and size. Temporarily fixate the plate to the fibula by placing 1-2 Olive Wires or K-wires in the plate's screw holes or temporary fixation holes, per surgeon preference (FIGURE 13). Confirm plate placement using fluoroscopy.

⚠ PRECAUTION: Though plates are pre-contoured, slight adjustments may be required and made using the plate bending instruments.

⚠ WARNING: Excessive or multiple plate bends could cause weakness in the plate.

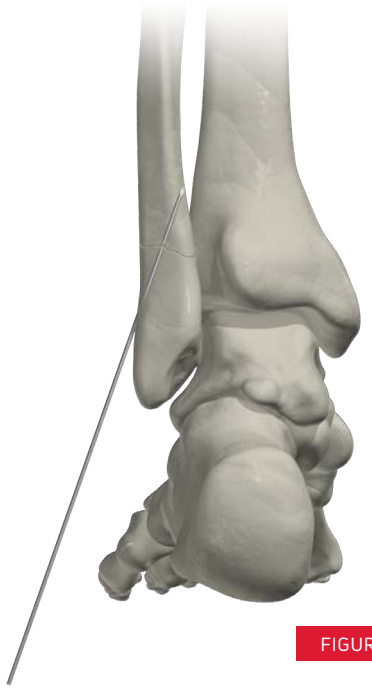


FIGURE 12

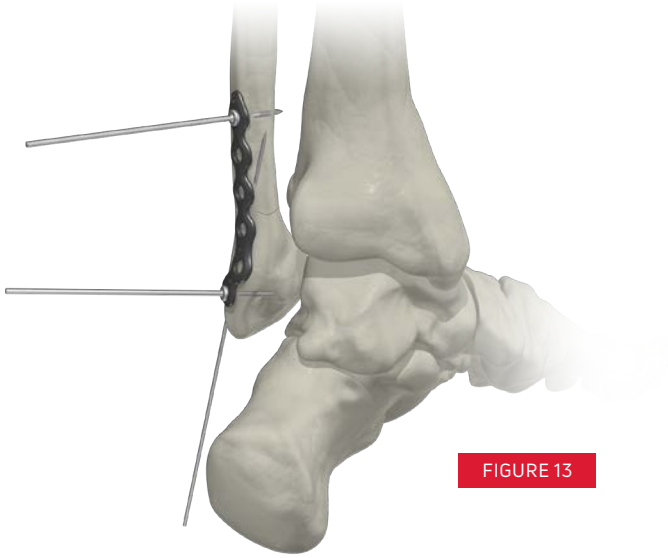


FIGURE 13

3. All plate holes accept 2.7mm, 3.5mm, and 4.0mm locking and non-locking screws. Drill for the desired screw diameter utilizing the appropriate Drill Guide placed into the first plate hole nearest the fracture line. Drill the pilot hole with the corresponding drill diameter at the desired angle of approach through the Drill Sleeve.

PRECAUTION: It is recommended to irrigate during pilot drilling.

WARNING: If the variable angle Drill Guide is used, locking screw placement angle is possible up to 30° off axis.

4. Insert the Arsenal Ankle Depth Gauge into the pilot hole to determine screw length. Select desired screw length and type. Insert screw into the pilot hole and drive into position rotating clockwise with the driver.

TIP: If the anti-glide technique is being used, it's recommended to first place a non-locking screw just proximal to the fracture spike in order to achieve the best buttressing and reduction of the fibular fracture.

5. Repeat steps 3 and 4 to fill the remaining screw holes as desired (FIGURE 14). The same steps are used for both locking and non-locking screws. Confirm screw placement under fluoroscopy throughout fixation to ensure positioning.

6. Proceed to incision closure or adjunctive procedures.

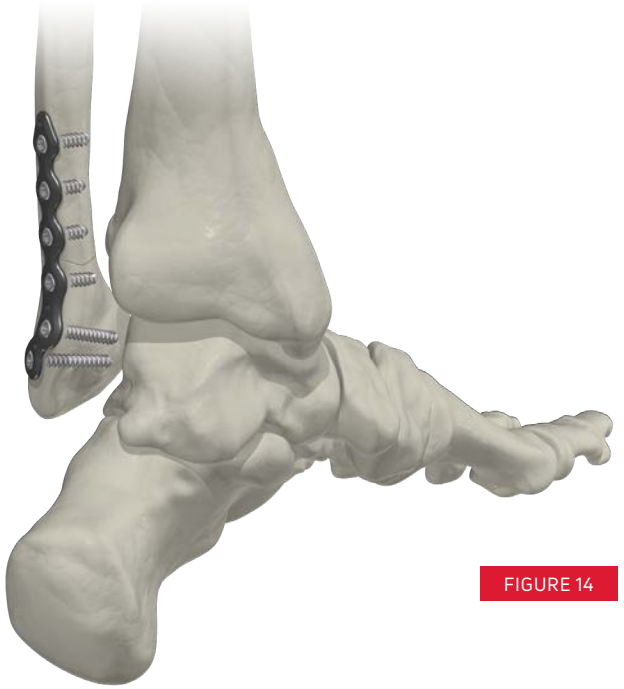


FIGURE 14

MEDIAL MALLEOLUS HOOK PLATE SURGICAL TECHNIQUE

SET-UP

Patient is positioned supine such that the foot is near the end of the table. A longitudinal incision appropriately sized for the fracture and plate length is made over the central aspect of the medial malleolus. Continue soft tissue dissection until the fracture site is visible

TECHNIQUE

1. The fracture site is identified (FIGURE 15), debrided, and mobilized. Fracture reduction is performed, and temporary stabilization is achieved using a K-wire, Pointed Reduction Forceps, or Lobster Claw Clamp, per surgeon preference.

The Arsenal Ankle Hook Plate Drill Guide is available within the system to provide a template for positioning the desired size hook plate and for pre-drilling the distal tine holes. The Hook Plate Drill Guide can be secured on the bone with either Olive Wire or K-wire for temporary fixation while pre-drilling the distal holes. In addition to pre-drilling for the tines of the plate, a K-wire can be placed for an optional 4.0mm cannulated screw to be inserted following plate fixation.

2. Using a 0.045" K-wire or Olive Wire, secure the Arsenal Ankle Hook Plate Drill Guide temporarily to the bone (FIGURE 16). The 3.5mm Pilot Drill will be used to pre-drill for the hook plates tines (FIGURE 17). Following completion of drilling, one has the option to place a 0.045" K-wire for insertion of a 4.0mm cannulated screw through the guide following plate fixation.

FIGURE 15

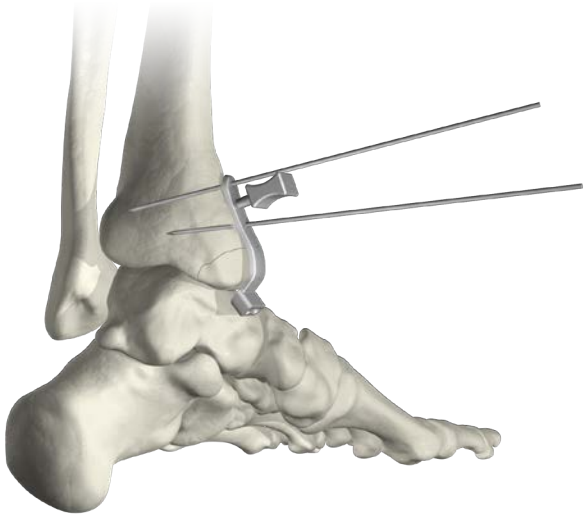


FIGURE 16

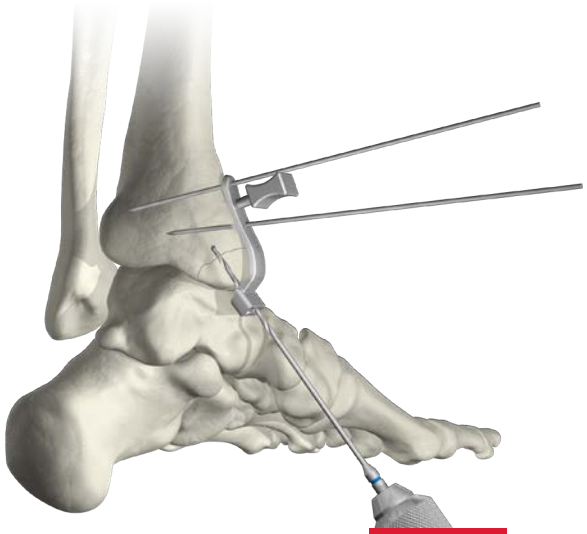


FIGURE 17

3. Select the appropriate size malleolus hook plate for the fracture type and size and apply to the prepared surgical site (FIGURE 18). Approximate the position of the plate to the bone/pre-drilled guide holes, and confirm proper placement and reduction through anteroposterior and lateral fluoroscopic imaging.

⚠ **PRECAUTION:** Though plates are pre-contoured, slight adjustments may be required and made using the plate bending instruments.

⚠ **WARNING:** Excessive or multiple plate bends could cause weakness in the plate.

FIGURE 18

4. Using the Tamp, impact the hooks of the plate until the desire reduction is achieved (FIGURE 19). A mallet or other preferred method can be used to impact the tamp. Do not use the Standard or Ratcheting Handles, as they may cause damage to the instrumentation.

NOTE: Remove all temporary fixation prior to tamping.

5. Select the desired non-locking screw diameter for the eccentric plate hole. Note the eccentric hole accepts 2.7, 3.5, and 4.0mm screw diameters.

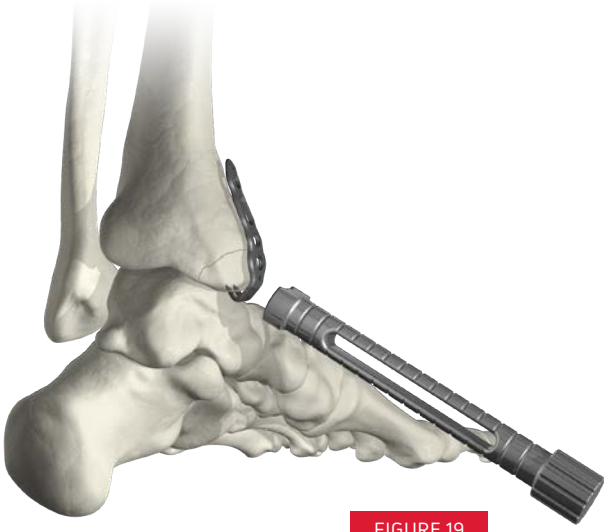


FIGURE 19

6. Drill for the desired screw diameter utilizing the appropriate Drill Sleeve placed into the most superior end of the plate's eccentric hole. Drill the pilot hole with the corresponding drill diameter at the desired angle of approach through the Drill Sleeve (FIGURE 20).

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

⚠ PRECAUTION: If variable angle Drill Guide is used, locking screw placement angle is possible up to 30° off axis.

6. Insert the Depth Gauge into the pilot hole to determine screw length. Select desired non-locking screw length. Insert screw into the pilot hole and drive into position, rotating clockwise with the driver until the head of the screw is fully engaged in the plate (FIGURE 21). Confirm proper placement and reduction through fluoroscopic imaging (FIGURE 22).

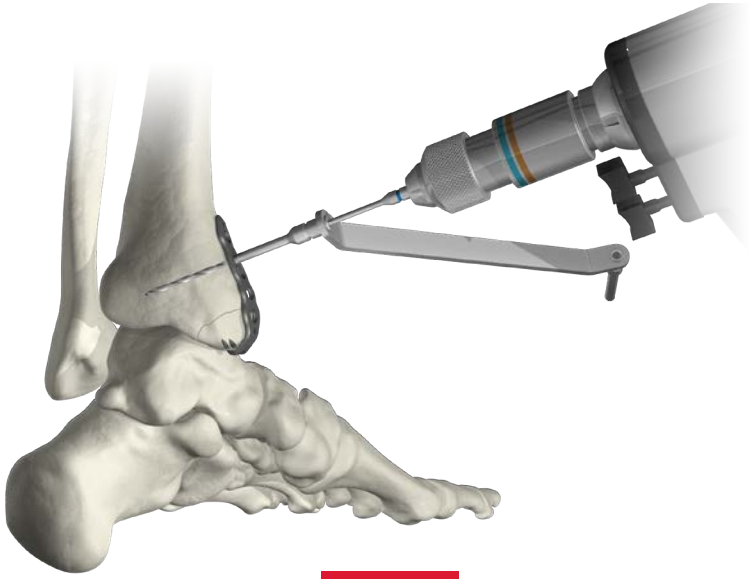


FIGURE 20

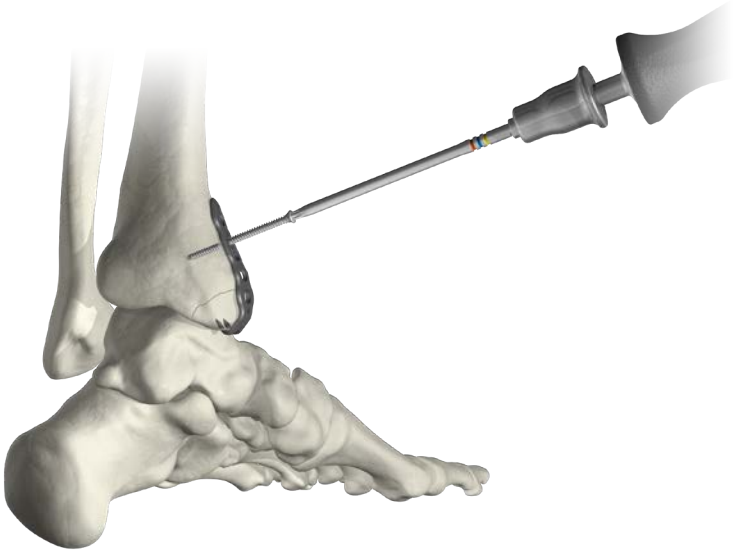


FIGURE 21

FIGURE 22

8. For the remaining screw holes, select the desired locking or non-locking screw diameter and the corresponding Pilot Drill. If use of a 4.0 cannulated screw is desired, ensure distal screw holes remain empty. Select the corresponding Drill Sleeve, and place it into the desired plate hole. Drill the pilot hole with the corresponding drill diameter at the desired angle of approach through the Drill Sleeve (static or variable angle) (FIGURE 23).

PRECAUTION: If variable angle Drill Guide is used, locking screw placement angle is possible up to 30° off axis.

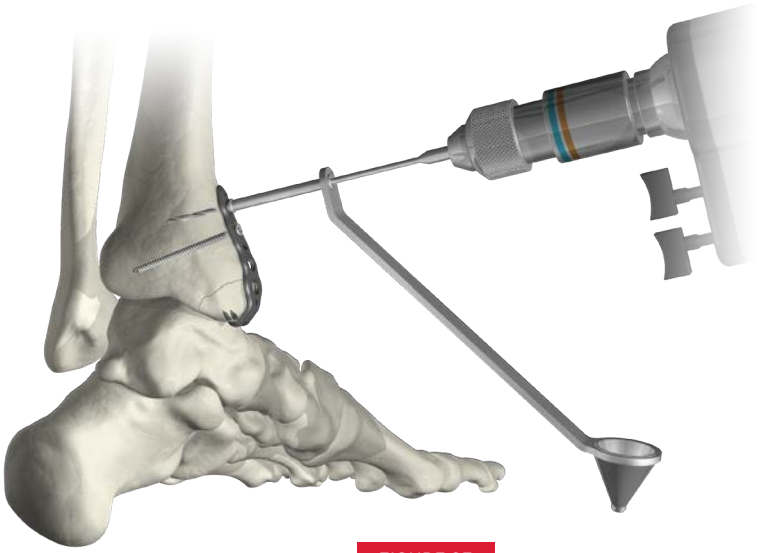


FIGURE 23

9. Insert the Depth Gauge into the pilot hole to determine screw length. Select an appropriate length screw. Insert screw into the pilot hole and drive screw to the final position with the driver (FIGURE 24).

NOTE: If variable angle Drill Guide is used, locking screw placement angle is possible up to 20° off axis.

10. Repeat steps 8 and 9 to fill the remaining screw holes as desired. The same steps are used for both locking and non-locking screws. Confirm screw placement under fluoroscopy throughout fixation to ensure positioning.

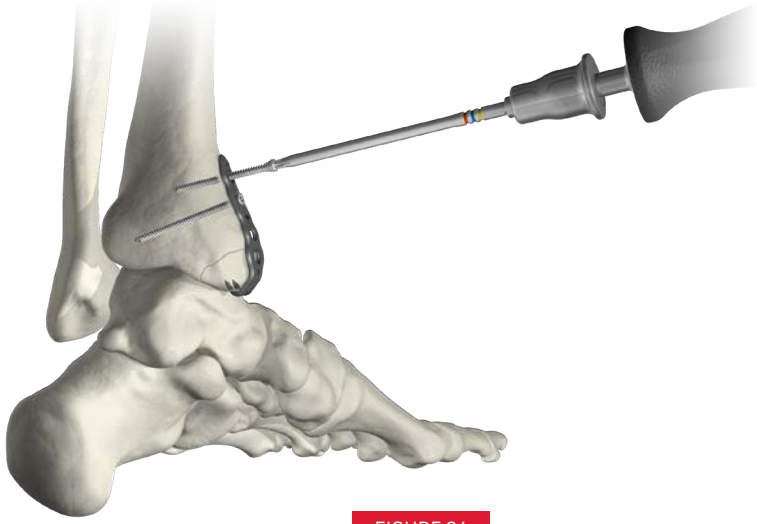


FIGURE 24

11. (OPTIONAL) Based on surgeon preference, a 4.0mm cannulated screw may be placed between the tines in an oblique fashion. At this time, a 0.045" K-wire placed in the central aspect of the Arsenal Ankle Hook Plate Drill Guide can be used or a 0.045" placed for guidance (FIGURE 25).

Drill for the intended cannulated screw with the Cannulated Pilot Drill, epoxy lined black, at the desired angle of approach over the placed wire (FIGURE 26).

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

Insert the Cannulated Depth Gauge into the pilot hole to determine screw length. Select an appropriate length 4.0mm cannulated screw. Insert screw into the pre-drilled hole, and drive the screw into the final position with the driver (FIGURE 27).

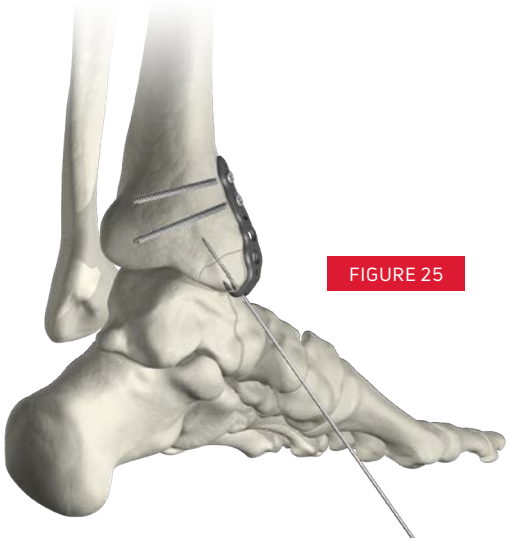


FIGURE 25

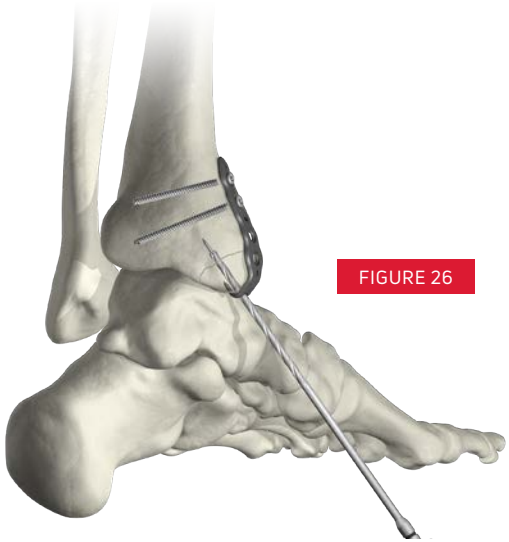


FIGURE 26

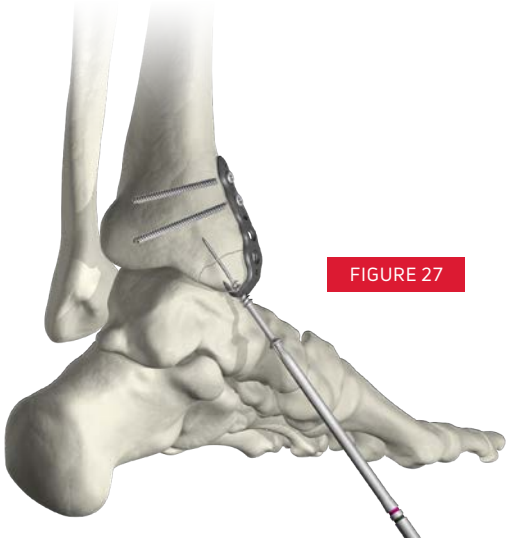


FIGURE 27

12. Proceed to incision closure or adjunctive procedures.

FIGURE 28

FINAL PLACEMENT WITH CANNULATED SCREW

FIGURE 29

FINAL PLACEMENT WITHOUT CANNULATED SCREW

LATERAL MALLEOLUS

The Arsenal Ankle Hook Plate is universal and can additionally be used on the lateral malleolus. The Medial Malleolus Hook Plate Surgical Technique steps may be followed for placement on the lateral malleolus as well.

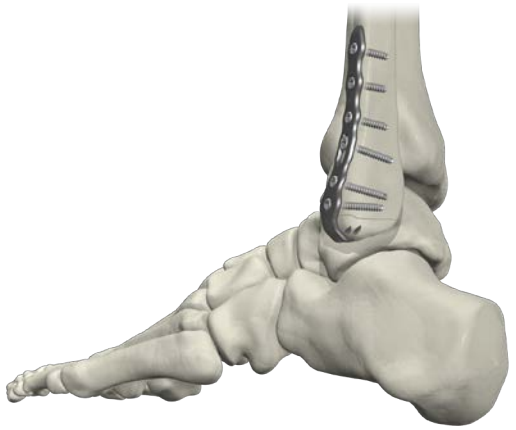


FIGURE 30

HOOK PLATE ON THE LATERAL MALLEOLUS

TENSION BAND PLATE SURGICAL TECHNIQUE

SET-UP

Place the patient in the supine position with the foot near the end of the table. A direct medial approach is recommended for placement of the Arsenal Ankle Tension Band Plate. During dissection, the long saphenous vein is usually found just anterior to the incision and should be protected and retracted medially. Similarly, the long saphenous nerve travels next to the vein and, if identified, should also be protected.

The tension band plate will first be fixated distally with cannulated screws, followed by addressing the plate's gliding hole and completing the construct with optionally inserting a 2.7mm, 3.5mm, or 4.0mm locking or non-locking screw into the plate's most proximal screw hole.

TECHNIQUE

1. The fracture site is identified (FIGURE 31), and fracture planes are debrided and mobilized. Fracture reduction is performed. Provisional fixation may be achieved using K-wires or clamps, per surgeon preference.

2. Position the tension band plate so that the two distal holes of the plate wrap around the distal-most end of the bone. The tension band plate should not be pre-contoured prior to placement, although slight adjustments may be required and made using the plate bending instruments.

⚠ WARNING: Excessive or multiple plate bends could cause weakness in the plate.

3. Insert 0.045" partially threaded K-wires through the distal holes of the plate, crossing the fracture/osteotomy site, to guide the cannulated instrumentation and screws (FIGURE 32). Confirm placement of wires under fluoroscopy.

4. Slide the Cannulated Depth Gauge over the Guide Wire to determine screw length by examining the end of the K-wire in relation to the marks on the Cannulated Depth Gauge.

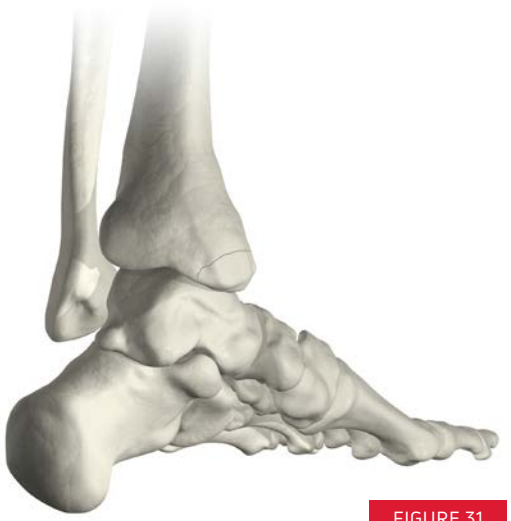


FIGURE 31

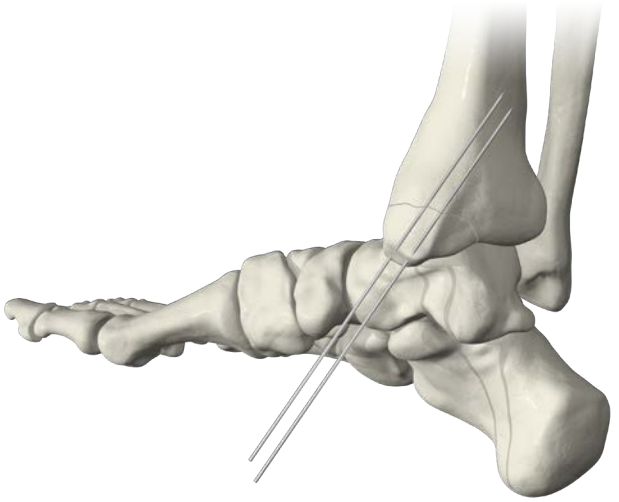


FIGURE 32

5. Drill the distal pilot hole with the corresponding drill diameter (FIGURE 33).

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

6. Select the measured 4.0mm cannulated screw length. Insert the screw over the K-wire and into the pilot hole. Drive the screw into position by rotating clockwise with the driver (FIGURE 34). Confirm screw placement under fluoroscopy.

7. Repeat steps 4-6 to place the second screw (FIGURE 35).

8. Manually hold or temporarily fixate the shaft of the plate to bone.

⚠ PRECAUTION: Ensure the plate arms sit flush against the bone when the plate is in its final position.

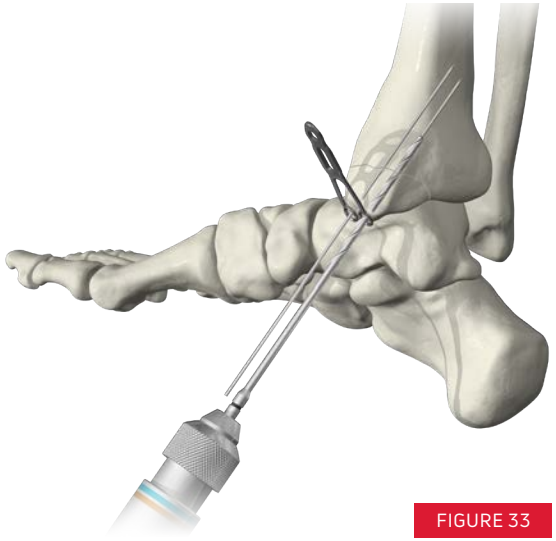


FIGURE 33

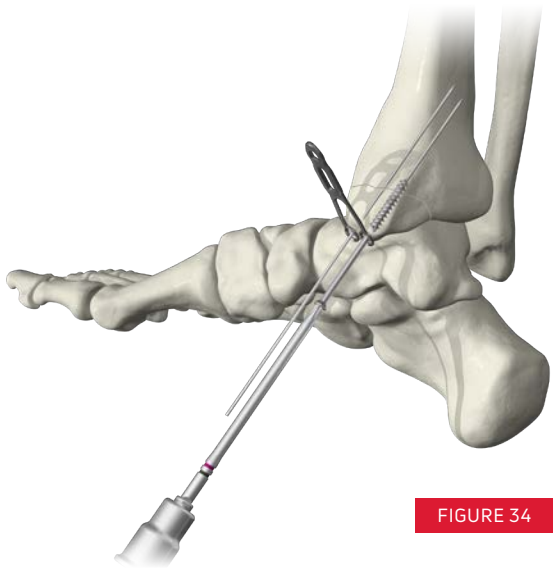


FIGURE 34

FIGURE 35

9. In the plate's gliding hole, drill for the desired non-locking screw diameter at the proximal aspect of the hole (FIGURE 36). The plate's gliding hole accepts 2.7mm, 3.5mm, and 4.0mm non-locking screws.

TIP: Aim parallel or slightly proximal to the tibiotalar joint. Be sure not to drill distally or else the tibial plafond may be penetrated.

PRECAUTION: It is recommended to irrigate during pilot drilling.

10. Insert the Arsenal Ankle Depth Gauge into the pilot hole to determine screw length.

11. Select the desired screw length and type. Insert screw into the pilot hole and drive into position by rotating clockwise with the driver (FIGURE 37).

PRECAUTION: Variable angle application is not recommended when using a non-locking screw in a gliding hole.

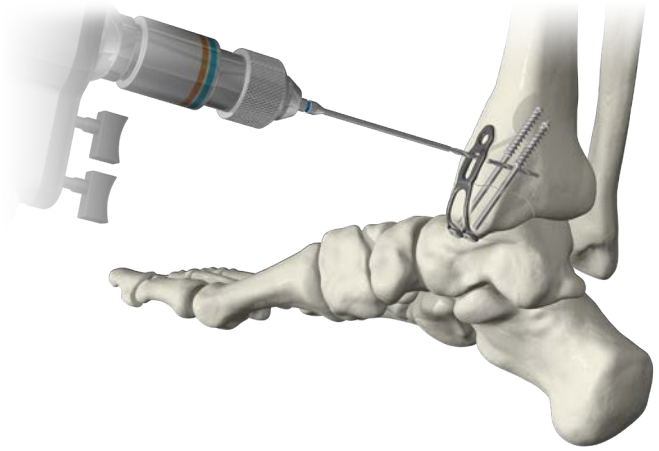


FIGURE 36

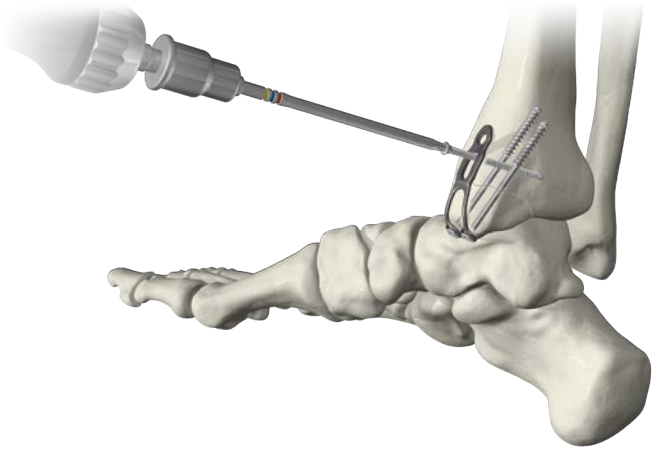


FIGURE 37

12. To complete the construct, place a final locking or non-locking screw of the desired diameter into the most proximal hole of the tension band plate (FIGURE 38). Confirm plate and screw placement using fluoroscopy.

13. Proceed to incision closure or adjunctive procedures.

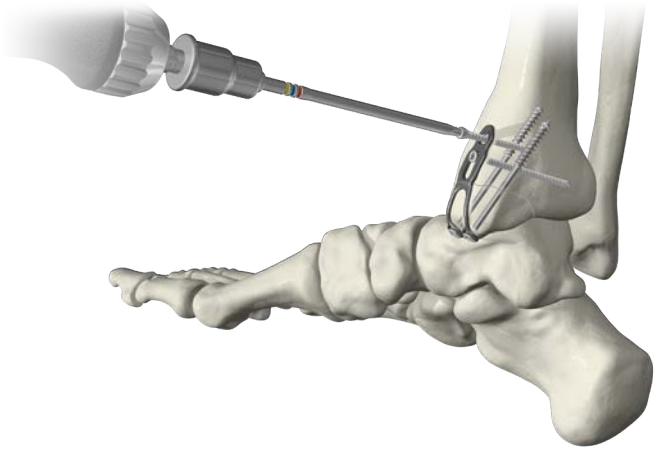


FIGURE 38

FIGURE 39

MEDIAL MALLEOLUS PLATE SURGICAL TECHNIQUE

SET-UP

Patient is positioned supine such that the foot is near the end of the table. A longitudinal incision is made over the central aspect of the medial malleolus, appropriately sized for the fracture and plate length. Continue soft tissue dissection until the fracture site is visible.

TECHNIQUE

1. The fracture site is identified (FIGURE 40), debrided, and mobilized. Fracture reduction is performed and temporary stabilization is achieved using a K-wire, Pointed Reduction Forceps, or Lobster Claw Clamp, per surgeon preference.

2. Select the medial malleolus plate appropriate for the fracture type and size. Temporarily fixate the plate to the fibula by placing 1-2 Olive Wires or K-wires in the plate's screw holes or temporary fixation holes, per surgeon preference (FIGURE 41). Confirm plate placement using fluoroscopy.

⚠ PRECAUTION: Though plates are pre-contoured, slight adjustments may be required and made using the plate bending instruments.

⚠ WARNING: Excessive or multiple plate bends could cause weakness in the plate.

FIGURE 40

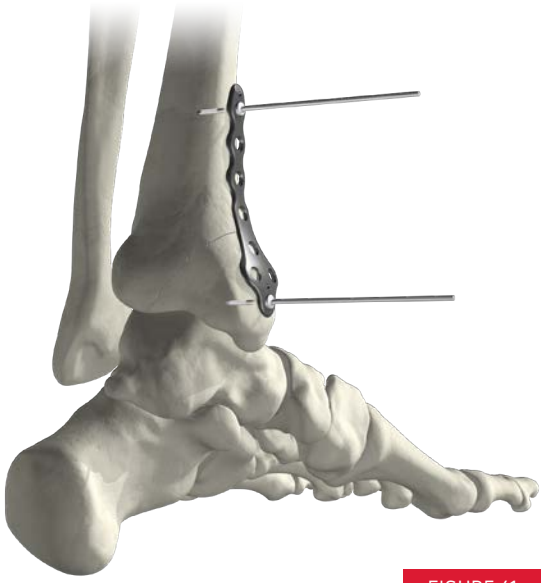


FIGURE 41

3. All plate holes accept 2.7mm, 3.5mm, and 4.0mm locking and non-locking screws. Drill for the desired screw diameter utilizing the appropriate Drill Sleeve placed into the first plate hole nearest the fracture line. Drill the pilot hole with the corresponding drill diameter at the desired angle of approach through the Drill Sleeve (FIGURE 42).

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

⚠ PRECAUTION: If variable angle Drill Guide is used, locking screw placement angle is possible up to 30° off axis.

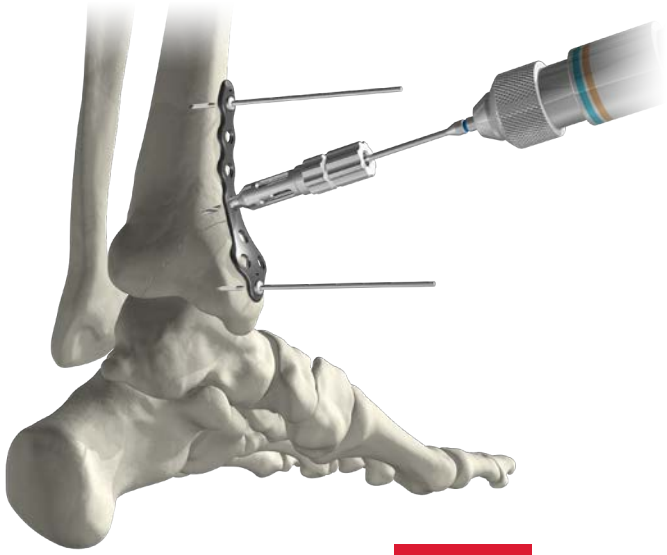


FIGURE 42

4. Insert the Depth Gauge into the pilot hole to determine screw length. Select desired screw length and type. Insert screw into the pilot hole and drive into position rotating clockwise with the driver (FIGURE 43).

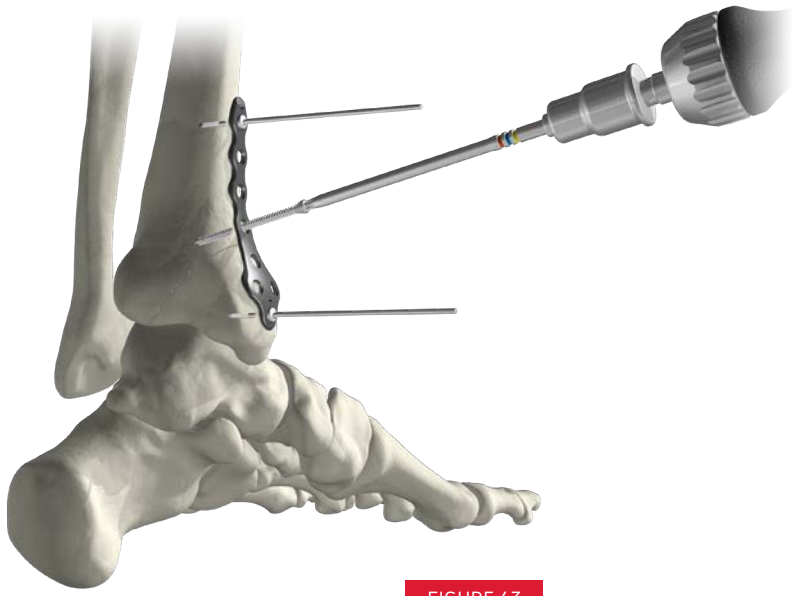


FIGURE 43

5. Repeat steps 3 and 4 to fill the remaining screw holes (FIGURES 44 & 45). The same steps are use for both locking and non-locking screws. Confirm screw placement under fluoroscopy throughout fixation to ensure positioning.

6. Proceed to incision closure or adjunctive procedures

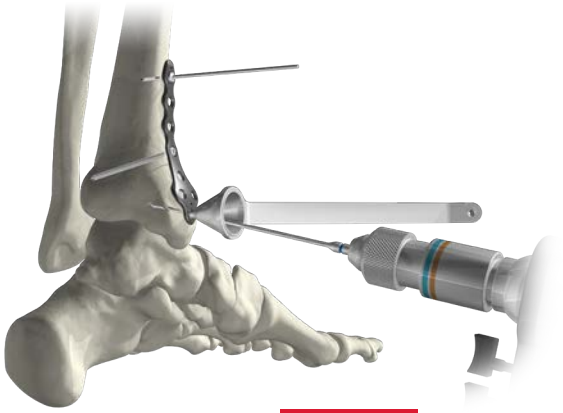


FIGURE 44

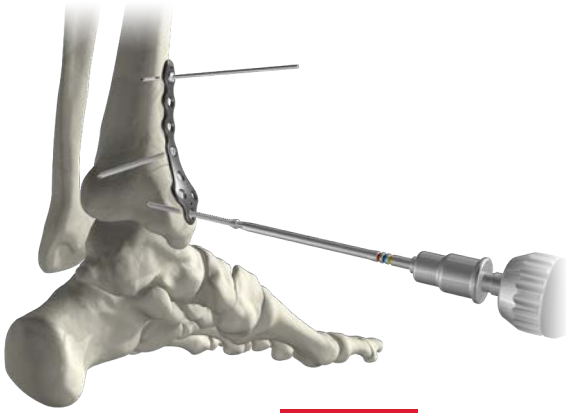


FIGURE 45

FIGURE 46

SET-UP

An anterolateral approach for use of the anterolateral tibia plate is recommended. Place the patient in the supine position with the foot near the end of the table. A small bump can be placed under the ipsilateral thigh.

An anterolateral approach to the distal tibia is performed by creating an incision in line with the forth ray at the level of the tibiotalar joint. Skin is incised and the superficial peroneal nerve is identified and protected. The extensor retinaculum is then incised and the extensor tendons are retracted medially, exposing the distal tibia. The joint capsule may be incised to better visualize the joint, although care should be taken to limit dissection of capsule of the tibia.

TECHNIQUE

1. The fracture site is identified (FIGURE 47), debrided, and mobilized. Reduced K-wires and Reduction Forceps can all be used to temporize reduction.

2. Select the appropriate length anterolateral plate for the fracture type and size. Use a Cobb or Periosteal Elevator to create a sub muscular plane to allow for the entire length of the plate to be placed against the bone.

TIP: A drill tower for the desired screw diameter may be placed into one of the circular holes at the lateral aspect of the distal plate to facilitate plate insertion into the surgical site. Insert the proximal aspect of the plate through the incision, sliding the plate proximally to follow the sub muscular plane created, until the distal aspect of the plate is appropriately positioned over the distal tibia. Confirm plate length and position using fluoroscopy.

3. Temporarily fixate the plate to the tibia by placing 1-2 Olive Wires or K-wires in the plate's screw holes or temporary fixation holes (FIGURE 48), per surgeon preference. Confirm plate placement using fluoroscopy.

PRECAUTION: Though plates are pre-contoured, slight adjustments may be required and made using the plate bending instruments.

WARNING: Excessive or multiple plate bends could cause weakness in the plate.

FIGURE 47

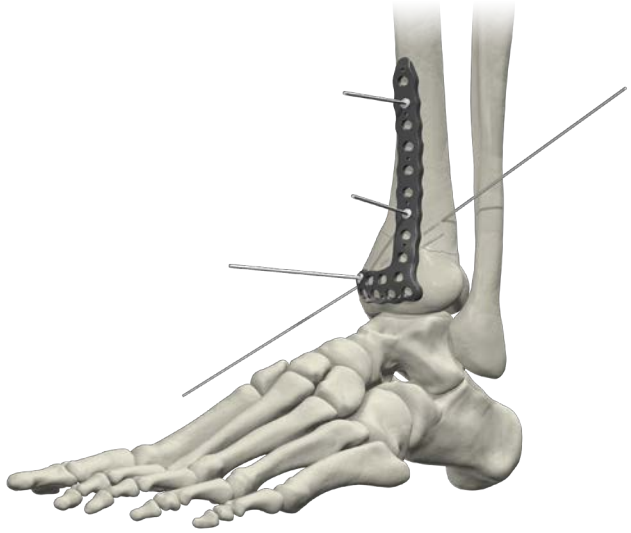


FIGURE 48

4. All plate holes accept 2.7mm, 3.5mm, and 4.0mm locking and non-locking screws. The order of screw placement is per surgeon preference and may vary with fracture pattern.

5. To place screws, drill through the Drill Tower at the desired angle of approach using the drill size that corresponds to the desired screw diameter (FIGURE 49).

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

⚠ PRECAUTION: If variable angle Drill Guide is used, locking screw placement angle is possible up to 30° off axis.

6. Insert the Depth Gauge into the pilot hole to determine screw length. Select desired screw length and type. Insert screw into the pilot hole and drive into position rotating clockwise with the driver (FIGURE 50).

7. Repeat steps 5 and 6 to fill the remaining screw holes. The same steps are used for both locking and non-locking screws. Confirm screw placement under fluoroscopy throughout fixation to ensure positioning.

8. Proceed to incision closure or adjunctive procedures.

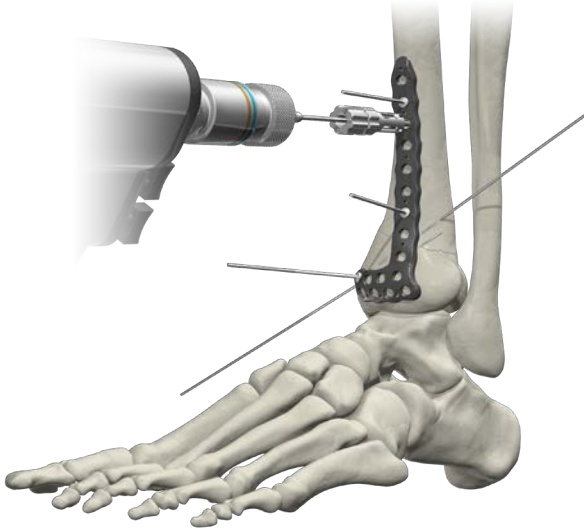


FIGURE 49

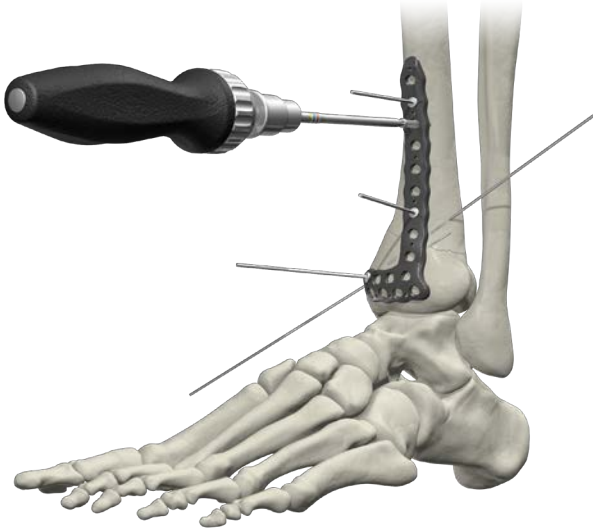


FIGURE 50

FIGURE 51

SET-UP

An anteromedial, anterior, or anterolateral approach to the distal tibia is recommended with supine patient positioning. Start the incision midline and stay superficial to protect and retract the superficial peroneal nerve branches. Incise the extensor retinaculum (which may be tagged with vicryl to repair later) and stay between the EHL and TA tendon. Retract the EHL and deep neurovascular bundle laterally (anterior tibial artery and deep peroneal nerve). Reflect the anterior joint capsule medial and lateral.

TECHNIQUE

1. Execute fracture reduction per surgeon preference, achieving temporary stabilization of the tibia and fibula using available instruments and implants. Fibula fixation is performed per surgeon preference and can be performed before or after tibial fixation.

2. Select the anterior plate appropriate for the fracture type and size. Temporarily fixate the plate to the tibia by placing 1-2 Olive Wires or K-wires in the plate's screw holes or temporary fixation holes (FIGURE 52), per surgeon preference. Confirm plate placement using fluoroscopy.

⚠ PRECAUTION: Though plates are pre-contoured, slight adjustments may be required and made using the plate bending instruments.

⚠ WARNING: Excessive or multiple plate bends could cause weakness in the plate.

3. All plate holes accept 2.7mm, 3.5mm, and 4.0mm locking and non-locking screws. Drill for the desired screw diameter utilizing the appropriate Drill Guide placed into the first plate hole nearest the fracture line. Drill the pilot hole with the corresponding drill diameter at the desired angle of approach through the drill guide (FIGURE 53).

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

⚠ PRECAUTION: If variable angle Drill Guide is used, locking screw placement angle is possible up to 30° off axis.

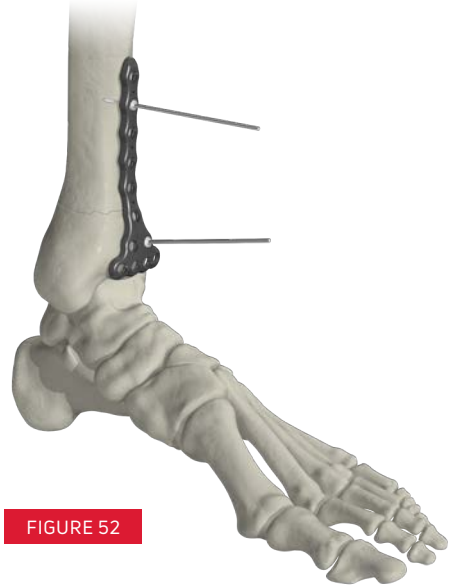


FIGURE 52

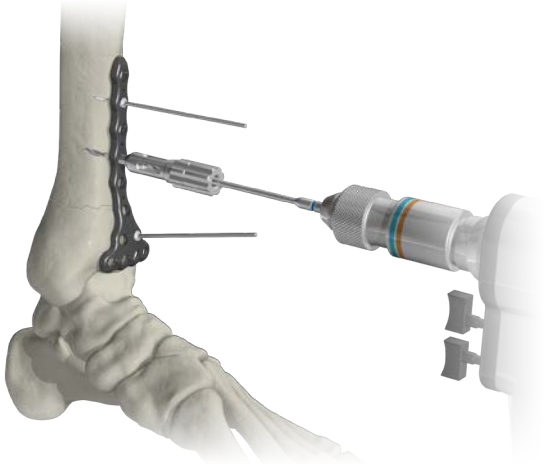


FIGURE 53

4. Insert the Depth Gauge into the pilot hole to determine screw length. Select desired screw length and type. Insert screw into the pilot hole and drive into position rotating clockwise with the driver (FIGURE 54).

5. Repeat steps 3 and 4 to fill the remaining screw holes. The same steps are used for both locking and non-locking screws. Confirm screw placement under fluoroscopy throughout fixation to ensure positioning (FIGURES 55–58).

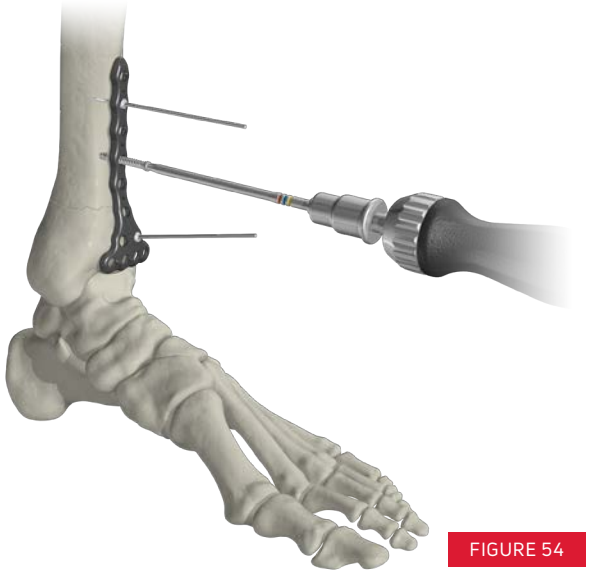


FIGURE 54

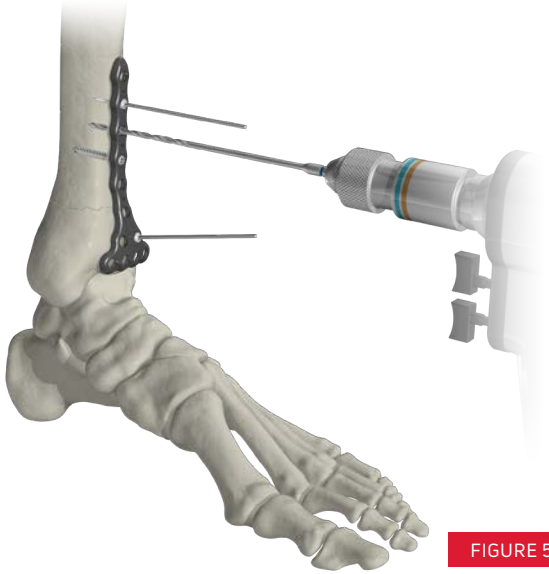


FIGURE 55

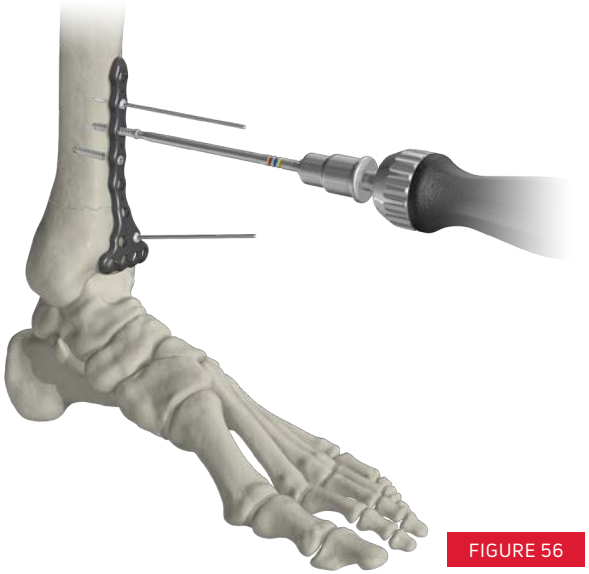


FIGURE 56

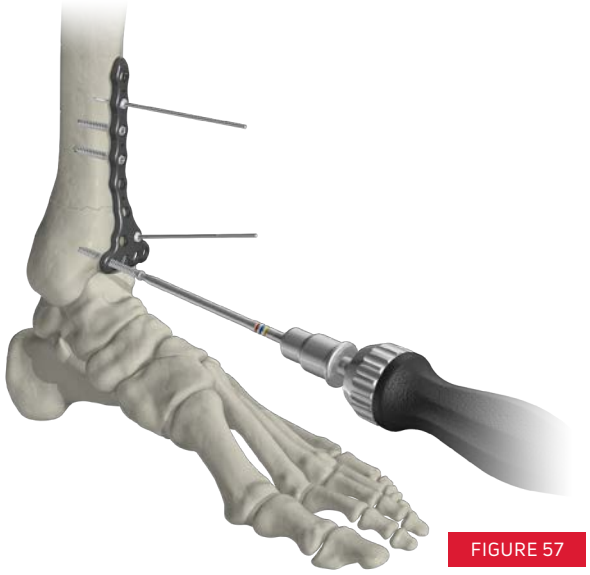


FIGURE 57

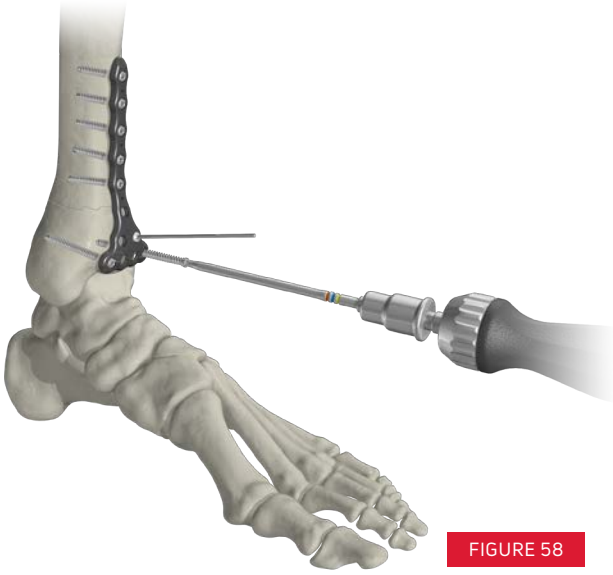


FIGURE 58

6. Proceed to incision closure or adjunctive procedures.

FIGURE 59

SET-UP

A posterolateral approach for use of the posterior malleolus tibia plate is recommended. Place the patient in the prone position with the foot near the end of the table. A small bump can be placed under the hip to get the limb to neutral rotation.

TIP: A posteromedial approach can be taken to allow fixation of medial and posterior pieces with one incision if the fracture is an extension of a medial malleolar fracture.

POSTEROLATERAL APPROACH

The posterolateral approach utilizes an internervous plane between the flexor hallucis longus (FHL), innervated by the tibial nerve, and the peroneal muscles, innervated by the Sural nerve. The incision is made just medial to the posterior border of the fibula (or between the medial border of the peroneals and the lateral border of the Achilles tendon). When performing a posterolateral approach to the ankle, particular care should be taken at the midpoint of the incision and to identify and avoid the sural nerve. Soft tissue dissection is carried down until the fracture site is visible.

Access to the fibula is obtained with medial retraction of the peroneal tendons. Access to the posterior malleolus is obtained with lateral retraction of the peroneals. Identify the interval between the flexor hallucis longus and peroneal tendons, and bluntly dissect tissue. Elevate the flexor hallucis longus off the distal posterior tibia. Retract the FHL medially to allow access to the posterior malleolus, exposing the fracture. Place self-retaining retractors and incise the periosteum over the posterior malleolus.

WARNING: Protect the neurovascular bundle medial to the FHL. Additionally, care must be taken to avoid devitalizing the posterior malleolus fragment and destabilizing the syndesmosis by inadvertently releasing the PITFL off of the distal posterior malleolus.

TECHNIQUE

1. The fracture site is identified (FIGURE 60), debrided, and mobilized. Fracture reduction is performed and temporary stabilization is achieved using a K-wire, Pointed Reduction Forceps, or Lobster Claw Clamp, per surgeon preference.

FIGURE 60

2. Select the 4- or 6-hole posterior plate appropriate for the fracture type and size. Temporarily fixate the plate to the Tibia by placing 1-2 Olive Wires or K-wires in the plate's screw holes or temporary fixation holes, per surgeon preference (FIGURE 61). Confirm plate placement using fluoroscopy.

PRECAUTION: Though plates are pre-contoured, slight adjustments may be required and made using the plate bending instruments.

WARNING: Excessive or multiple plate bends could cause weakness in the plate.

3. All plate holes accept 2.7mm, 3.5mm, and 4.0mm locking and non-locking screws. Drill for the desired screw diameter utilizing the appropriate Drill Guide placed into the first plate hole nearest the fracture line. Drill the pilot hole with the corresponding drill diameter at the desired angle of approach through the Drill Guide.

PRECAUTION: It is recommended to irrigate during pilot drilling.

PRECAUTION: If variable angle Drill Guide is used, locking screw placement angle is possible up to 30° off axis.

4. Insert the Depth Gauge into the pilot hole to determine screw length. Select desired screw length and type. Insert screw into the pilot hole and drive into position rotating clockwise with the driver.

5. Repeat steps 3 and 4 to fill the remaining screw holes. The same steps are used for both locking and non-locking screws. Check screw placement under fluoroscopy throughout fixation to ensure positioning and avoidance of the ankle joint. Ensure distal screws do not protrude anteriorly.

6. Proceed to incision closure or adjunctive procedures.

NOTE: 4.0 cannulated screws can be used to supplement fixation across the posterior malleolar fracture.

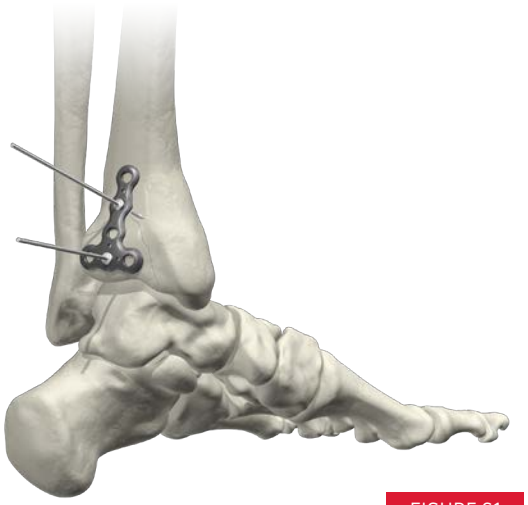


FIGURE 61

FIGURE 62

THE MALLEOLUS IMPLANT

The malleolus implant is designed to fixate fractures of the medial malleolus. Specifically, the implant can fixate vertical, oblique, and transverse medial malleolus fracture patterns.

It has both cancellous and cortical threads to capture different densities of bone within the ankle as well as a tapered distal end to decrease the insertion torque. The implant is cannulated to increase fixation strength in osteoporotic bone. Multiple cutting flutes are available to aid in the insertion of the implant.

THREAD TYPES

As previously mentioned, the malleolus implant has two main types of threads: cancellous and cortical. The cancellous threads are closer to the head of the implant, within the middle portion, while the cortical threads are more distal. The cancellous threads are designed to capture the dense bone of the epiphyseal scar in the tibia. The cortical threads are designed to provide fixation of the distal cortices of the tibia and increase fixation strength. The very distal tip of the implant is tapered for easy entry and decreased insertion torque. Passing through the fracture line, the proximal portion of the implant is not threaded to mimic the AO lag technique of using partially threaded screws for malleolar fixation.

THREAD DIMENSIONS

The cancellous threads are 4.5 mm in diameter. The cortical threads are 3.5 mm in diameter.

TECHNIQUE

1. Identify, expose, and prepare the surgical site per surgeon preference and fracture pattern/desired osteotomy (FIGURE 63). Reduce the fracture using Bone Reduction Clamps, k-wire, Steinmann Pins, or preferred method.

2. Insert a 0.045" partially threaded K-wire into the distal aspect of the medial malleolus with the intention of placing the implants bi-cortically (FIGURE 64). Avoid bending the wire by inserting 15mm-20mm increments. Confirm wire placement under fluoroscopy.

FIGURE 63

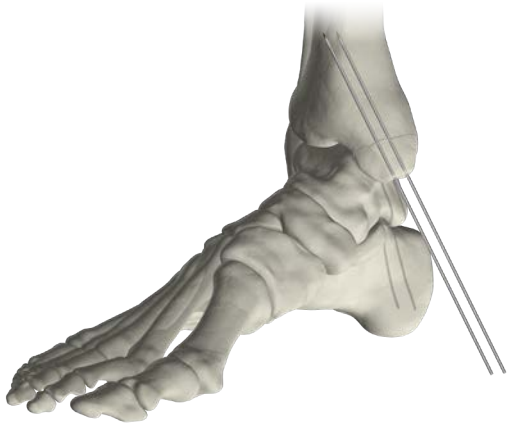


FIGURE 64

3. Slide the Cannulated Depth Gauge over the Guide Wire until the tip contacts bone (FIGURE 65). Measure to determine the screw length by examining the end of the K-wire in relation to the marks on the Depth Gauge.

4. Slide the Malleolus Countersink, identified easily by the pink epoxy band around the bottom, over the Guide Wire until the Countersink tip contacts bone (FIGURE 66). Rotate the Countersink clockwise and counterclockwise to create the necessary recess in the bone.

5. Utilizing the Malleolus Drill Bit, identified easily by the pink epoxy band around the bottom, pre-drill over the placed wires.

⚠ PRECAUTION: It is recommended to irrigate during pilot drilling.

6. Select the measured screw length. Insert the screw over the wire and into the pilot hole. Drive the screw into position by rotating clockwise with the driver until the desired fixation is achieved (FIGURE 67). Confirm screw placement under fluoroscopy.

7. Repeat steps 3-6 to insert the secondary screw into the medial malleolus.

8. Remove the placed K-wires and confirm final construct under fluoroscopy.

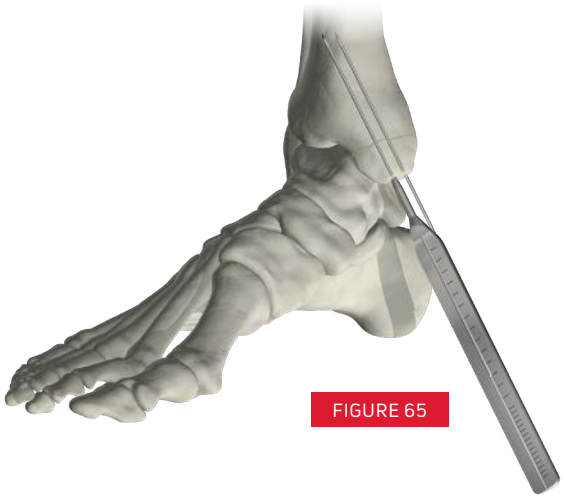


FIGURE 65

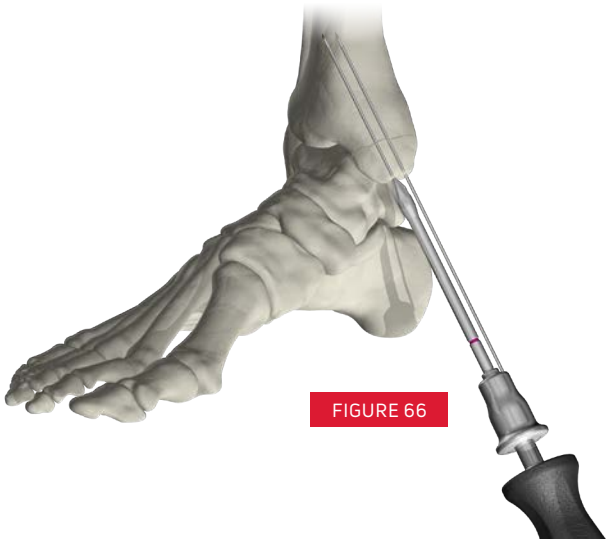


FIGURE 66

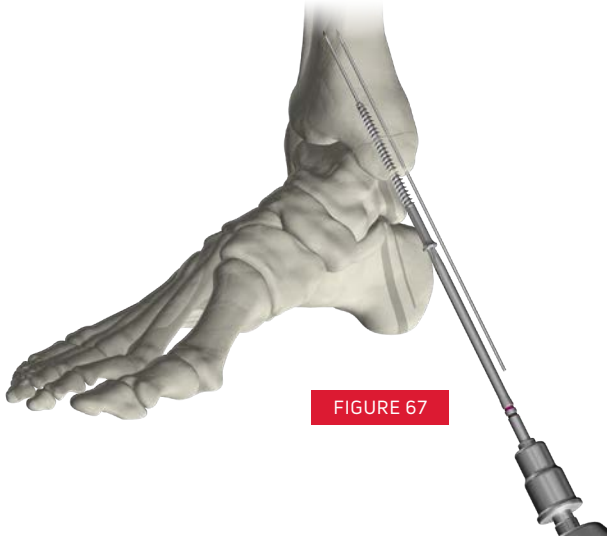


FIGURE 67

FIGURE 68

ORDERING INFORMATION

ARSENAL ANKLE PLATES

PART #	DESCRIPTION
300-90-001	6-HOLE 1/3 TUBULAR PLATE
300-90-002	8-HOLE 1/3 TUBULAR PLATE
300-90-003	10-HOLE 1/3 TUBULAR PLATE
300-90-004	12-HOLE 1/3 TUBULAR PLATE
300-91-001	BUTTRESS PLATE
300-91-002	6-HOLE STRAIGHT PLATE
300-91-003	8-HOLE STRAIGHT PLATE
300-91-004	10-HOLE STRAIGHT PLATE
300-91-005	12-HOLE STRAIGHT PLATE
300-92-001	8-HOLE LATERAL FIBULA PLATE, SYMMETRIC
300-92-002	10-HOLE LATERAL FIBULA PLATE, SYMMETRIC
300-92-003	12-HOLE LATERAL FIBULA PLATE, SYMMETRIC
300-93-001	6-HOLE LATERAL FIBULA PLATE, L
300-93-002	6-HOLE LATERAL FIBULA PLATE, R
300-93-003	8-HOLE LATERAL FIBULA PLATE, L
300-93-004	8-HOLE LATERAL FIBULA PLATE, R
300-93-005	10-HOLE LATERAL FIBULA PLATE, L
300-93-006	10-HOLE LATERAL FIBULA PLATE, R
300-94-001	6-HOLE POSTERIOR FIBULA PLATE, L
300-94-002	6-HOLE POSTERIOR FIBULA PLATE, R
300-94-003	9-HOLE POSTERIOR FIBULA PLATE, L
300-94-004	9-HOLE POSTERIOR FIBULA PLATE, R
300-95-001	7-HOLE MEDIAL MALLOLAR PLATE
300-95-002	9-HOLE MEDIAL MALLOLAR PLATE
300-96-001	TENSION BAND PLATE
300-97-001	4-HOLE HOOK PLATE

PART #	DESCRIPTION
300-97-002	6-HOLE HOOK PLATE
300-12-001	4-HOLE POSTERIOR MALLEOLAR PLATE
300-12-002	6-HOLE POSTERIOR MALLEOLAR PLATE
300-10-001	8-HOLE ANTERIOR TIBIA PLATE
300-10-002	10-HOLE ANTERIOR TIBIA PLATE
300-11-001	7-HOLE ANTEROLATERAL TIBIA PLATE, L
300-11-002	7-HOLE ANTEROLATERAL TIBIA PLATE, R
300-11-003	9-HOLE ANTEROLATERAL TIBIA PLATE, L
300-11-004	9-HOLE ANTEROLATERAL TIBIA PLATE, R
300-11-005	11-HOLE ANTEREOLATERAL TIBIA PLATE, L
300-11-006	11-HOLE ANTEREOLATERAL TIBIA PLATE, R

ARSENAL ANKLE SCREWS

PART #	DESCRIPTION
307-27-008	2.7MM x 8MM ARSENAL SCREW
307-27-010	2.7MM x 10MM ARSENAL SCREW
307-27-012	2.7MM x 12MM ARSENAL SCREW
307-27-014	2.7MM x 14MM ARSENAL SCREW
307-27-016	2.7MM x 16MM ARSENAL SCREW
307-27-018	2.7MM x 18MM ARSENAL SCREW
307-27-020	2.7MM x 20MM ARSENAL SCREW
307-27-022	2.7MM x 22MM ARSENAL SCREW
307-27-024	2.7MM x 24MM ARSENAL SCREW
307-27-026	2.7MM x 26MM ARSENAL SCREW
307-27-028	2.7MM x 28MM ARSENAL SCREW
307-27-030	2.7MM x 30MM ARSENAL SCREW
307-27-032	2.7MM x 32MM ARSENAL SCREW
307-27-034	2.7MM x 34MM ARSENAL SCREW
307-27-036	2.7MM x 36MM ARSENAL SCREW
307-27-038	2.7MM x 38MM ARSENAL SCREW
307-27-040	2.7MM x 40MM ARSENAL SCREW
307-27-042	2.7MM x 42MM ARSENAL SCREW
307-27-044	2.7MM x 44MM ARSENAL SCREW
307-27-046	2.7MM x 46MM ARSENAL SCREW
307-27-048	2.7MM x 48MM ARSENAL SCREW
307-27-050	2.7MM x 50MM ARSENAL SCREW
307-35-010	3.5MM x 10MM ARSENAL SCREW
307-35-012	3.5MM x 12MM ARSENAL SCREW
307-35-014	3.5MM x 14MM ARSENAL SCREW
307-35-016	3.5MM x 16MM ARSENAL SCREW

PART #	DESCRIPTION
307-35-018	3.5MM x 18MM ARSENAL SCREW
307-35-020	3.5MM x 20MM ARSENAL SCREW
307-35-022	3.5MM x 22MM ARSENAL SCREW
307-35-024	3.5MM x 24MM ARSENAL SCREW
307-35-026	3.5MM x 26MM ARSENAL SCREW
307-35-028	3.5MM x 28MM ARSENAL SCREW
307-35-030	3.5MM x 30MM ARSENAL SCREW
307-35-032	3.5MM x 32MM ARSENAL SCREW
307-35-034	3.5MM x 34MM ARSENAL SCREW
307-35-036	3.5MM x 36MM ARSENAL SCREW
307-35-038	3.5MM x 38MM ARSENAL SCREW
307-35-040	3.5MM x 40MM ARSENAL SCREW
307-35-042	3.5MM x 42MM ARSENAL SCREW
307-35-044	3.5MM x 44MM ARSENAL SCREW
307-35-046	3.5MM x 46MM ARSENAL SCREW
307-35-048	3.5MM x 48MM ARSENAL SCREW
307-35-050	3.5MM x 50MM ARSENAL SCREW
307-35-055	3.5MM x 55MM ARSENAL SCREW
307-35-060	3.5MM x 60MM ARSENAL SCREW
307-35-065	3.5MM x 65MM ARSENAL SCREW
307-35-070	3.5MM x 70MM ARSENAL SCREW
307-40-010	4.0MM x 10MM ARSENAL SCREW
307-40-012	4.0MM x 12MM ARSENAL SCREW
307-40-014	4.0MM x 14MM ARSENAL SCREW
307-40-016	4.0MM x 16MM ARSENAL SCREW
307-40-018	4.0MM x 18MM ARSENAL SCREW

ARSENAL ANKLE SCREWS (CONTINUED)

PART #	DESCRIPTION
307-40-020	4.0MM x 20MM ARSENAL SCREW
307-40-022	4.0MM x 22MM ARSENAL SCREW
307-40-024	4.0MM x 24MM ARSENAL SCREW
307-40-026	4.0MM x 26MM ARSENAL SCREW
307-40-028	4.0MM x 28MM ARSENAL SCREW
307-40-030	4.0MM x 30MM ARSENAL SCREW
307-40-032	4.0MM x 32MM ARSENAL SCREW
307-40-034	4.0MM x 34MM ARSENAL SCREW
307-40-036	4.0MM x 36MM ARSENAL SCREW
307-40-038	4.0MM x 38MM ARSENAL SCREW
307-40-040	4.0MM x 40MM ARSENAL SCREW
307-40-042	4.0MM x 42MM ARSENAL SCREW
307-40-044	4.0MM x 44MM ARSENAL SCREW
307-40-046	4.0MM x 46MM ARSENAL SCREW
307-40-048	4.0MM x 48MM ARSENAL SCREW
307-40-050	4.0MM x 50MM ARSENAL SCREW
308-27-008	2.7MM x 8MM ARSENAL LOCKING SCREW
308-27-010	2.7MM x 10MM ARSENAL LOCKING SCREW
308-27-012	2.7MM x 12MM ARSENAL LOCKING SCREW
308-27-014	2.7MM x 14MM ARSENAL LOCKING SCREW
308-27-016	2.7MM x 16MM ARSENAL LOCKING SCREW
308-27-018	2.7MM x 18MM ARSENAL LOCKING SCREW
308-27-020	2.7MM x 20MM ARSENAL LOCKING SCREW
308-27-022	2.7MM x 22MM ARSENAL LOCKING SCREW
308-27-024	2.7MM x 24MM ARSENAL LOCKING SCREW
308-27-026	2.7MM x 26MM ARSENAL LOCKING SCREW

PART #	DESCRIPTION
308-27-028	2.7MM x 28MM ARSENAL LOCKING SCREW
308-27-030	2.7MM x 30MM ARSENAL LOCKING SCREW
308-27-032	2.7MM x 32MM ARSENAL LOCKING SCREW
308-27-034	2.7MM x 34MM ARSENAL LOCKING SCREW
308-27-036	2.7MM x 36MM ARSENAL LOCKING SCREW
308-27-038	2.7MM x 38MM ARSENAL LOCKING SCREW
308-27-040	2.7MM x 40MM ARSENAL LOCKING SCREW
308-27-042	2.7MM x 42MM ARSENAL LOCKING SCREW
308-27-044	2.7MM x 44MM ARSENAL LOCKING SCREW
308-27-046	2.7MM x 46MM ARSENAL LOCKING SCREW
308-27-048	2.7MM x 48MM ARSENAL LOCKING SCREW
308-27-050	2.7MM x 50MM ARSENAL LOCKING SCREW
308-35-010	3.5MM x 10MM ARSENAL LOCKING SCREW
308-35-012	3.5MM x 12MM ARSENAL LOCKING SCREW
308-35-014	3.5MM x 14MM ARSENAL LOCKING SCREW
308-35-016	3.5MM x 16MM ARSENAL LOCKING SCREW
308-35-018	3.5MM x 18MM ARSENAL LOCKING SCREW
308-35-020	3.5MM x 20MM ARSENAL LOCKING SCREW
308-35-022	3.5MM x 22MM ARSENAL LOCKING SCREW
308-35-024	3.5MM x 24MM ARSENAL LOCKING SCREW
308-35-026	3.5MM x 26MM ARSENAL LOCKING SCREW
308-35-028	3.5MM x 28MM ARSENAL LOCKING SCREW
308-35-030	3.5MM x 30MM ARSENAL LOCKING SCREW
308-35-032	3.5MM x 32MM ARSENAL LOCKING SCREW
308-35-034	3.5MM x 34MM ARSENAL LOCKING SCREW
308-35-036	3.5MM x 36MM ARSENAL LOCKING SCREW

ARSENAL ANKLE SCREWS (CONTINUED)

PART #	DESCRIPTION
308-35-038	3.5MM x 38MM ARSENAL LOCKING SCREW
308-35-040	3.5MM x 40MM ARSENAL LOCKING SCREW
308-35-042	3.5MM x 42MM ARSENAL LOCKING SCREW
308-35-044	3.5MM x 44MM ARSENAL LOCKING SCREW
308-35-046	3.5MM x 46MM ARSENAL LOCKING SCREW
308-35-048	3.5MM x 48MM ARSENAL LOCKING SCREW
308-35-050	3.5MM x 50MM ARSENAL LOCKING SCREW
308-35-055	3.5MM x 55MM ARSENAL LOCKING SCREW
308-35-060	3.5MM x 60MM ARSENAL LOCKING SCREW
308-35-065	3.5MM x 65MM ARSENAL LOCKING SCREW
308-35-070	3.5MM x 70MM ARSENAL LOCKING SCREW
308-40-010	4.0MM x 10MM ARSENAL LOCKING SCREW
308-40-012	4.0MM x 12MM ARSENAL LOCKING SCREW
308-40-014	4.0MM x 14MM ARSENAL LOCKING SCREW
308-40-016	4.0MM x 16MM ARSENAL LOCKING SCREW
308-40-018	4.0MM x 18MM ARSENAL LOCKING SCREW
308-40-020	4.0MM x 20MM ARSENAL LOCKING SCREW
308-40-022	4.0MM x 22MM ARSENAL LOCKING SCREW
308-40-024	4.0MM x 24MM ARSENAL LOCKING SCREW
308-40-026	4.0MM x 26MM ARSENAL LOCKING SCREW
308-40-028	4.0MM x 28MM ARSENAL LOCKING SCREW
308-40-030	4.0MM x 30MM ARSENAL LOCKING SCREW
308-40-032	4.0MM x 32MM ARSENAL LOCKING SCREW
308-40-034	4.0MM x 34MM ARSENAL LOCKING SCREW
308-40-036	4.0MM x 36MM ARSENAL LOCKING SCREW
308-40-038	4.0MM x 38MM ARSENAL LOCKING SCREW
308-40-040	4.0MM x 40MM ARSENAL LOCKING SCREW
308-40-042	4.0MM x 42MM ARSENAL LOCKING SCREW
308-40-044	4.0MM x 44MM ARSENAL LOCKING SCREW
308-40-046	4.0MM x 46MM ARSENAL LOCKING SCREW
308-40-048	4.0MM x 48MM ARSENAL LOCKING SCREW
308-40-050	4.0MM x 50MM ARSENAL LOCKING SCREW

ARSENAL ANKLE WASHERS

PART #	DESCRIPTION
303-90-001	ARSENAL 2.7MM/3.5MM/4.0MM SCREW WASHER, SMOOTH
200-45-001	SMOOTH WASHER
303-90-002	ARSENAL 2.7MM/3.5MM/4.0MM SCREW WASHER, RIDGED
200-45-003	RIDGED WASHER

ARSENAL ANKLE MALLEOLUS IMPLANTS

PART #	DESCRIPTION
309-45-065	4.5MM x 65MM MALLEOLUS IMPLANT
309-45-070	4.5MM x 70MM MALLEOLUS IMPLANT
309-45-075	4.5MM x 75MM MALLEOLUS IMPLANT
309-45-080	4.5MM x 80MM MALLEOLUS IMPLANT
309-45-085	4.5MM x 85MM MALLEOLUS IMPLANT
309-45-090	4.5MM x 90MM MALLEOLUS IMPLANT
309-45-095	4.5MM x 95MM MALLEOLUS IMPLANT
309-45-100	4.5MM x 100MM MALLEOLUS IMPLANT

ORDERING INFORMATION

ARSENAL ANKLE CANNULATED SCREWS

PART #	DESCRIPTION
201-40-030	4.0MM X 30MM CANNULATED SCREW
201-40-032	4.0MM X 32MM CANNULATED SCREW
201-40-034	4.0MM X 34MM CANNULATED SCREW
201-40-036	4.0MM X 36MM CANNULATED SCREW
201-40-038	4.0MM X 38MM CANNULATED SCREW
201-40-040	4.0MM X 40MM CANNULATED SCREW
201-40-042	4.0MM X 42MM CANNULATED SCREW
201-40-044	4.0MM X 44MM CANNULATED SCREW
201-40-046	4.0MM X 46MM CANNULATED SCREW
201-40-048	4.0MM X 48MM CANNULATED SCREW
201-40-050	4.0MM X 50MM CANNULATED SCREW
201-40-055	4.0MM X 55MM CANNULATED SCREW
201-40-060	4.0MM X 60MM CANNULATED SCREW

ARSENAL ANKLE DISPOSABLES & SEMI-DISPOSABLES

PART #	DESCRIPTION
330-10-003	2.7MM/3.5MM/4.0MM ARSENAL SCREW DRIVER BIT
340-27-001	2.7MM ARSENAL ANKLE SCREW DRILL BIT
340-35-001	3.5MM ARSENAL ANKLE SCREW DRILL BIT
340-40-001	4.0MM ARSENAL ANKLE SCREW DRILL BIT
340-27-011	2.7MM ARSENAL ANKLE SCREW OVERDRILL BIT
340-35-011	3.5MM ARSENAL ANKLE SCREW OVERDRILL BIT
330-27-002	2.7MM/3.5MM/4.0MM ARSENAL SCREW COUNTERSINK
340-15-003	CANNULATED DRIVER BIT
340-15-007	SOLID CORE REMOVAL BIT
340-45-001	MALLEOLUS IMPLANT DRILL BIT
340-45-002	MALLEOLUS IMPLANT COUNTERSINK
211-40-001	4.0MM CANNULATED DRILL BIT
211-40-002	4.0MM CANNULATED COUNTERSINK
340-60-005	.062" x 3" OLIVE WIRE, ARSENAL ANKLE
210-40-004	0.045" K-WIRE, STANDARD
210-60-004	0.062" x 6" K-WIRE, STANDARD
210-40-005	0.045" K-WIRE, PARTIALLY THREADED

ORDERING INFORMATION

ARSENAL ANKLE PLATING SYSTEM™ INSTRUMENTS

PART #	DESCRIPTION
340-00-005	2.7MM/3.5MM/4.0MM ARSENAL SCREW DEPTH GAUGE
340-00-009	ARSENAL ANKLE SCREW REMOVER
211-40-004	CANNULATED DEPTH GAUGE
330-00-020	ARSENAL DRILL TOWER OUTER SLEEVE
330-00-021	ARSENAL DRILL TOWER 2.7MM/4.0MM INSERT
330-00-022	ARSENAL DRILL TOWER 3.5MM INSERT
340-00-001	ARSENAL ANKLE VARIABLE/ STATIC ANGLE DRILL GUIDE
340-27-006	2.7MM ARSENAL ANKLE DRILL SLEEVES
340-35-006	3.5MM ARSENAL ANKLE DRILL SLEEVES
340-40-006	4.0MM ARSENAL ANKLE DRILL SLEEVES
340-00-002	ARSENAL ANKLE HOOK PLATE GUIDE
340-00-003	ARSENAL ANKLE HOOK PLATE TAMP
340-00-004	PARALLEL DISTRACTOR
340-00-006	BENDING IRONS
320-00-005	CANNULATED DRIVER HANDLE
210-00-004	RATCHETING CANNUL ATED DRIVER HANDLE
320-00-001	LARGE SERRATED BONE CLAMP
340-00-007	POINTED BONE CLAMP
320-00-003	WEBER POINTED CLAMP
340-00-008	SYNDESMOTIC CLAMP
340-00-019	ARSENAL FORCEPS
330-00-010	LARGE BENDING PLIERS W/ SPRINGS
320-00-011	8MM HOHMANN RETRACTOR
340-00-011	15MM HOHMANN RETRACTOR (6" LENGTH)
320-00-013	BONE PICK
340-00-010	PERIOSTEAL ELEVATOR

ARSENAL ANKLE PLATING SYSTEM™ TRAY COMPONENTS

PART #	DESCRIPTION
340-01-100	ARSENAL ANKLE TRAY BASE
340-01-101	ARSENAL ANKLE TRAY LID
340-01-200	ARSENAL ANKLE TRAY UPPER SUBLEVEL
340-01-201	ARSENAL ANKLE TRAY LOWER SUBLEVEL
340-01-202	ARSENAL ANKLE SCREW CADDY
340-01-203	ARSENAL ANKLE STRAIGHT PLATE CADDY
340-01-204	ARSENAL ANKLE LATERAL FIBULA PLATE CADDY
340-01-205	ARSENAL ANKLE MALLEOLUS AND POSTERIOR PLATE CADDY
340-01-206	ARSENAL ANKLE PILON PLATE CADDY

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