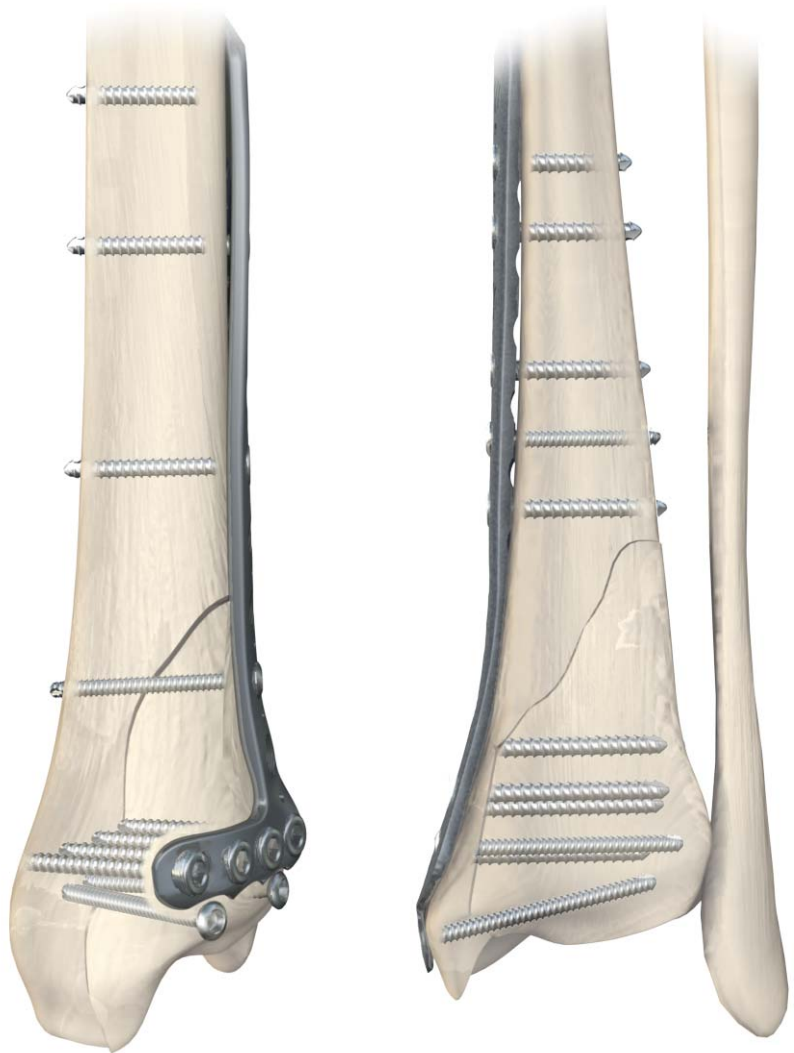


Anterolateral and Medial Distal Tibia Locking Plates



PERI-LOC Periarticular Locked Plating System

Anterolateral and Medial Distal Tibia Locking Plates Surgical Technique

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Nota Bene

The technique description herein is made available to the healthcare professional to illustrate the author's suggested treatment for the uncomplicated procedure. In the final analysis, the preferred treatment is that which addresses the needs of the specific patient.

Product Overview

The PERI-LOC Periarticular Locked Plating System from Smith & Nephew, Inc. offers the advantages of locked plating with the flexibility and benefits of traditional plating in one system. Utilizing both locking and non-locking screws, PERI-LOC offers a construct that resists angular (e.g. varus/valgus) collapse while simultaneously acting as an effective aid to fracture reduction. A simple and straightforward instrument set features one screwdriver, standardized drill bits, and color-coded instrumentation, making PERI-LOC efficient and easy to use.

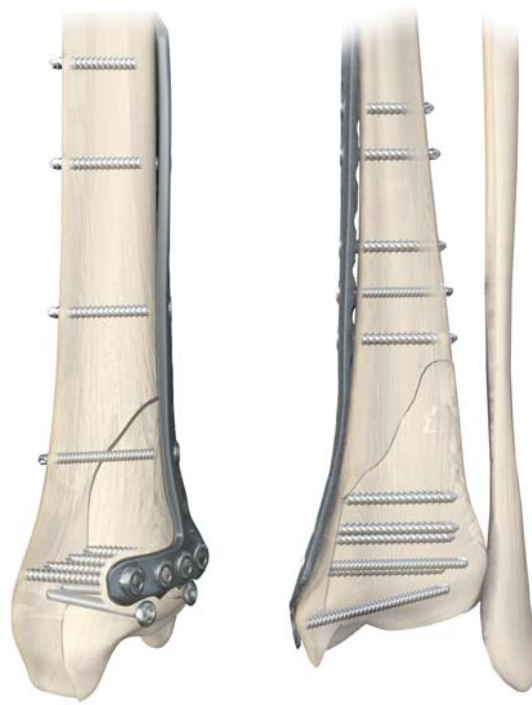
All PERI-LOC implants are manufactured using the highest quality 316L stainless steel for strength and durability.

The anatomical contour of the 3.5mm Anterolateral Distal Tibia Locking Plate provides an excellent fit against the surface of the bone.

Scallops on the distal end of the Anterolateral Distal Tibia Locking Plate allow easy placement of lag screws outside the plate for fixation of articular fractures.

Each screw hole will accept one of four different screws allowing you to customize the screw configuration depending on the individual needs of the fracture:

- 3.5mm Locking Self-Tapping Cortex Screw
- 3.5mm Self-Tapping Cortex Screw (Non-Locking)
- 4.0mm Partially Threaded Cancellous Screw
- 4.0mm Fully Threaded Cancellous Screw



Indications

The PERI-LOC Periarticular Locked Plating System can be used in adult and pediatric patients as well as patients with osteopenic bone. It is indicated for fixation of pelvic, small and long bone fractures, including those of the tibia, fibula, femur, pelvis, acetabulum, metacarpals, metatarsals, humerus, ulna, and calcaneus.

Disposable components in the PERI-LOC Periarticular Locked Plating System are for single use only.

Section A:

PERI-LOC Anterolateral Distal Tibia Locking Plate

Design Features

Plate twists and contours to lateral tibia

Beveled tip allows easy percutaneous insertion of plate

Holes in the plate can be used for 1mm of compression or locking

All distal locking screws support the joint surface

Scalloped edge allows for easy placement of independent lag screws for reduction of articular surface



Every hole can accept one of four different screws:



3.5mm Self-Tapping Cortex Screw (Non-Locking)



3.5mm Locking Self-Tapping Cortex Screw



4.0mm Fully Threaded Cancellous Screw



4.0mm Partially Threaded Cancellous Screws

All screws use 3.5mm Hexdriver.

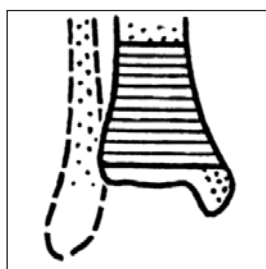
Patient Positioning

Place the patient in a supine position on a radiolucent table. Confirm that an unhindered lateral and AP view under fluoroscopy can be obtained.

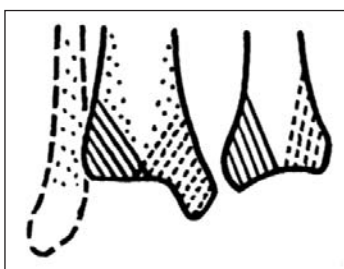
Obtain gross metaphyseal alignment using manual traction or skeletal distraction.

Incision

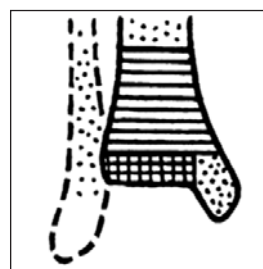
The incision illustrated below is indicated for the following fractures.



A. Extra-articular (43-A)



B. Partial articular (43-B)



C. Complete articular (43-C)

OTA Fracture Classification courtesy of the Orthopaedic Trauma Association. For more information go to www.ota.org

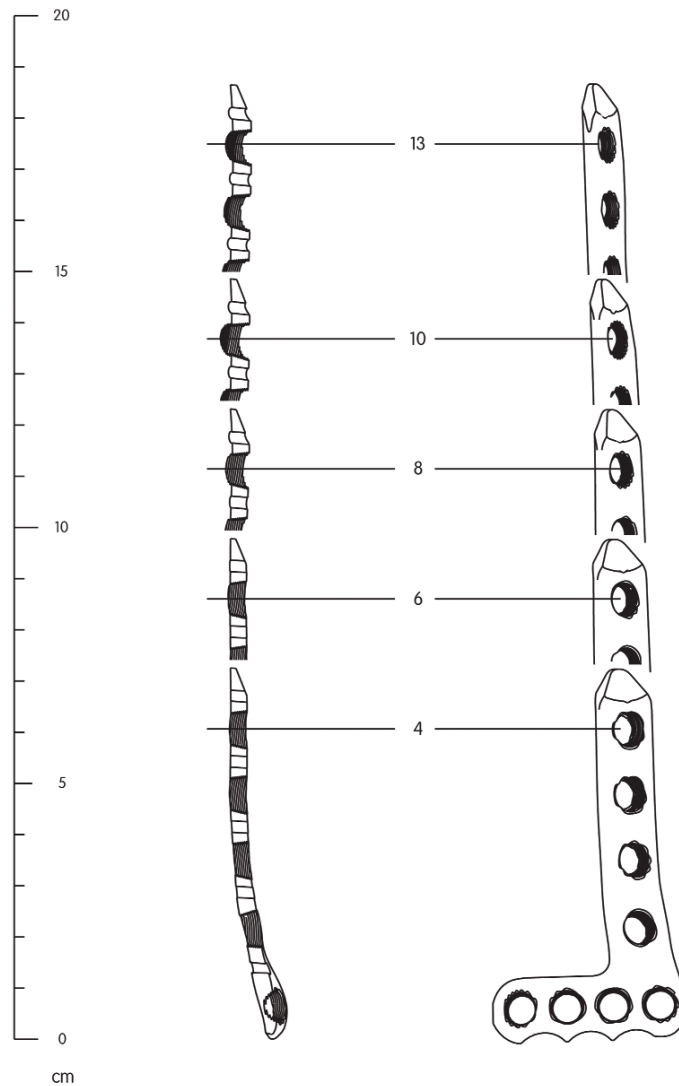
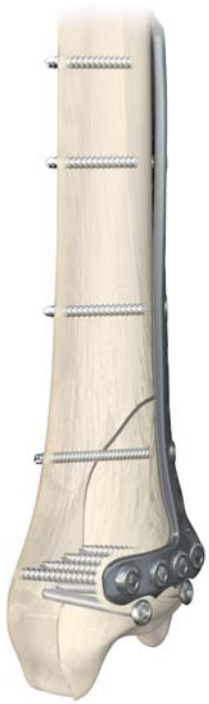
An anterior incision is made centered over the joint and extending proximally as needed.



Surgical Technique

Plate Selection

Using the PERI-LOC Anterolateral Distal Tibia Locking Plate Preoperative Template, determine the appropriate length plate for the fracture. In general, a longer plate allows for better mechanical advantage over a shorter plate. An allowance for five screw holes above the most proximal aspect of the fracture is recommended when selecting plate length.

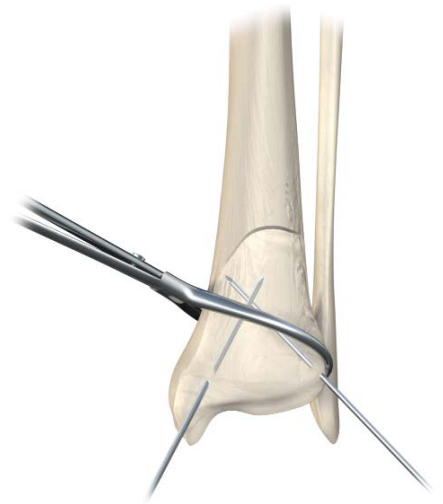


PERI-LOC Anterolateral Tibia Locking Plate
Preoperative Template

Cat. No. 7118-0919

Articular Reduction and Provisional Fixation

It is important that articular fracture reduction be obtained prior to placement of locking screws. Temporarily secure articular fragments by using K-Wires and/or Reduction Forceps.



Confirm reduction of articular surface and place definitive fixation outside the plate if necessary.



Reduction Forceps
Cat. No. 7117-0044



3.5mm Self-Tapping
Cortex Screw
(Non-Locking)
Cat. No. 7180-40XX



3.5mm Locking
Self-Tapping
Cortex Screw
Cat. No. 7180-50XX



4.0mm Fully Threaded
Cancellous Screw
Cat. No. 7180-52XX



4.0mm Partially
Threaded Cancellous
Screw
Cat. No. 7180-53XX

Plate Positioning

Position the plate and reduce the fracture manually. Confirm coronal and sagittal alignment as well as plate position on the shaft. Fix the plate to the diaphysis with two short (diaphyseal) Provisional Fixation Pins allowing adequate spread between them. Place the one (metaphyseal) Provisional Fixation Pin through one of the distal holes above the joint.



2.7mm Provisional
Fixation Pin, 18mm
Cat. No. 7117-3322

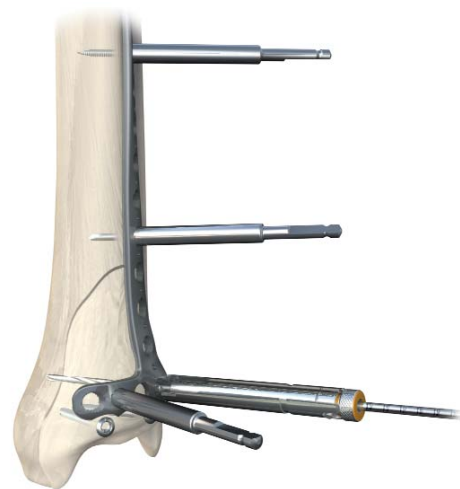


2.7mm Provisional
Fixation Pin, 40mm
Cat. No. 7117-3323

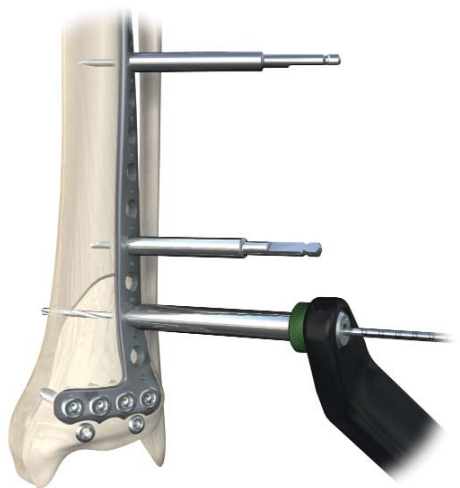
Screw Insertion

Proceed with definitive fixation of fracture using appropriate screw selections. If non-locking screws are needed for either fragment, they must be inserted prior to insertion of locking screws in that fragment. Locking screws should be used through at least two of the distal holes and two of the shaft holes.

To insert locking screws, place the Locking Screw Guide with the 2.7mm Locking Drill Guide Insert (orange insert) into one of the four distal locking holes. Pre-drill with the 2.7mm Drill Bit through the guide insert advancing the drill tip to the posterior wall of the distal tibia. Measure for length by reading the calibrations on the 2.7mm Drill Bit or by using the Short 3.5mm Screw Depth Gauge and insert the appropriate length 3.5mm Self-Tapping Cortex Screw (Locking) using the 3.5mm Hexdriver with Quick Connect.



Pre-drill for the 3.5mm Self-Tapping Cortex Screws (Non-Locking) using the 2.7mm Drill Bit with Quick Connect through the 2.7mm Compression or Neutral Locking Hole Insert (green or gold round drill guide inserts). Measure for length by reading the calibrations on the 2.7mm Drill Bit or by using the Short 3.5mm Screw Depth Gauge and insert the appropriate length 3.5mm Self-Tapping Cortex Screw (Non-Locking) using the 3.5mm Hexdriver with Quick Connect.



					
2.7mm Drill Bit with Quick Connect Cat. No. 7117-3503	3.5mm Locking Screw Guide Cat. No. 7117-3538	2.7mm Locking Drill Guide Insert Cat. No. 7117-3529	2.7mm Neutral Locking Hole Insert Cat. No. 7117-3514	2.7mm Compression Locking Hole Insert Cat. No. 7117-3515	Universal Drill Guide Handle Cat. No. 7117-3349

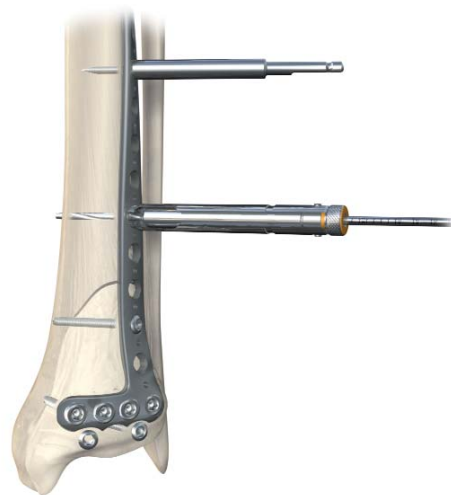
Section A: Anterolateral Distal Tibia Locking Plate

Remove the provisional fixation pins and complete definitive fixation with the insertion of 3.5mm Locking Self-Tapping Cortex Screws.

Note: Locking screws can be inserted using a powered drill system, but should be tightened by hand. Tightening screws using a powered drill system may cause loss of reduction or expose the screw heads to excess torque.

To insert locking screws in the diaphysis, place the 3.5mm Locking Screw Guide with the 2.7mm Locking Drill Guide Insert (orange insert) into the screw hole. Pre-drill with the 2.7mm Drill Bit through both cortices. Measure for length by reading the calibration on the 2.7mm Drill Bit or by using the Short 3.5mm Screw Depth Gauge and insert the appropriate length 3.5mm Locking Screw.

Confirm screw placement by obtaining AP and lateral fluoroscopic images and close the wound.



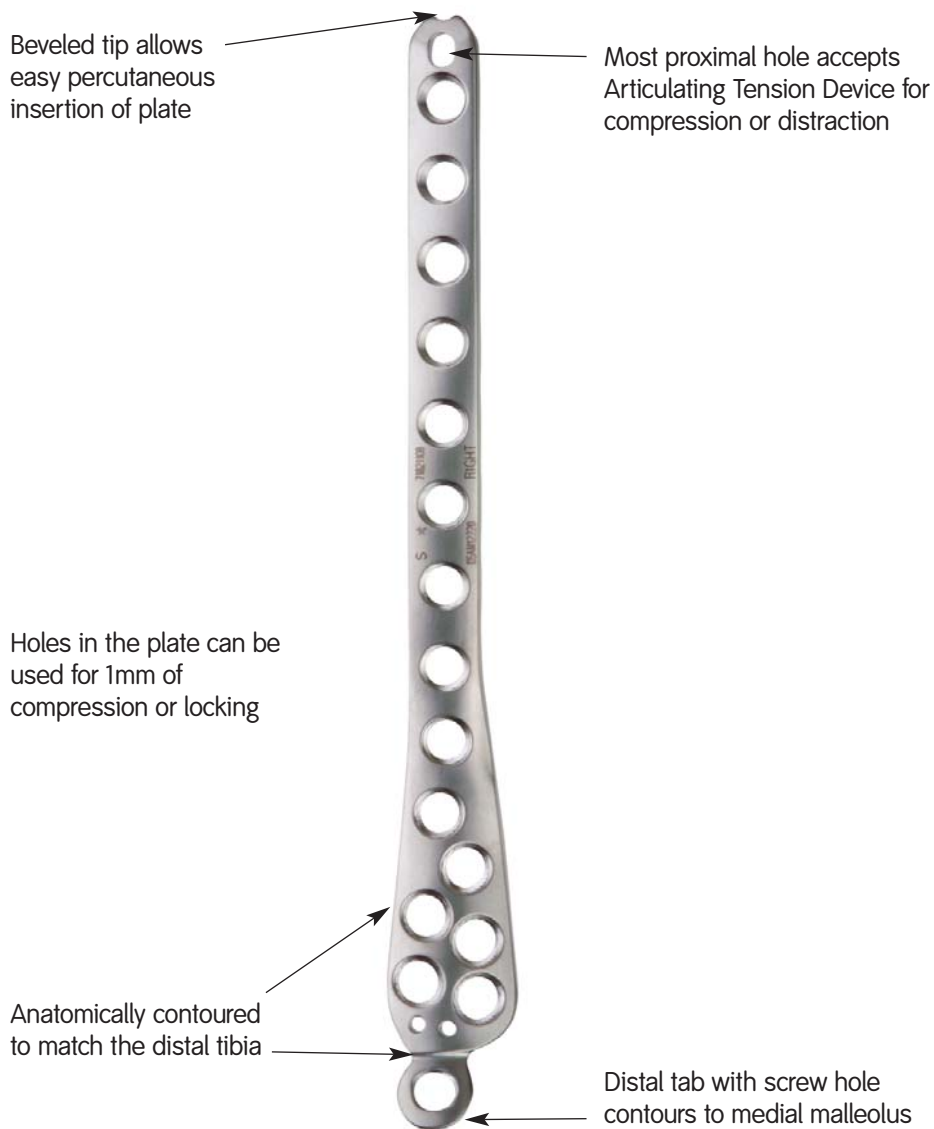
2.7mm Drill Bit with
Quick Connect
Cat. No. 7117-3503

3.5mm Locking
Screw Guide
Cat. No. 7117-3538

Section B:

PERI-LOC Medial Distal Tibia Locking Plate

Design Features



Each of the holes can accept one of four different screws:



3.5mm Self-Tapping Cortex Screw
(Non-Locking)



3.5mm Locking Self-Tapping
Cortex Screw



4.0mm Fully Threaded
Cancellous Screw



4.0mm Partially Threaded
Cancellous Screws

All screws use 3.5mm Hexdriver.

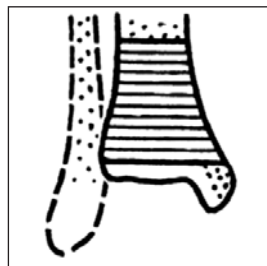
Patient Positioning

Place the patient in a supine position on a radiolucent table. Confirm that an unhindered lateral and AP view under fluoroscopy can be obtained.

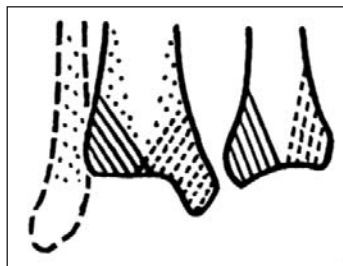
Obtain gross metaphyseal alignment using manual traction or skeletal distraction.

Incision

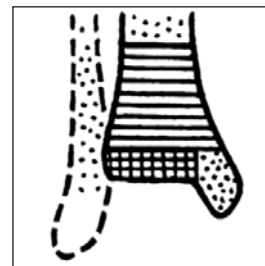
The incision illustrated below is indicated for the following fractures.



A. Extra-articular (43-A)



B. Partial articular (43-B)



C. Complete articular (43-C)

OTA Fracture Classification courtesy of the Orthopaedic Trauma Association. For more information go to www.ota.org

If an extensile approach is necessary, a medial incision is recommended. Extend proximally to accommodate the appropriate length plate.

Incision section continued on next page.

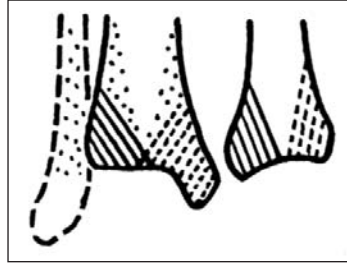


Incision (continued)

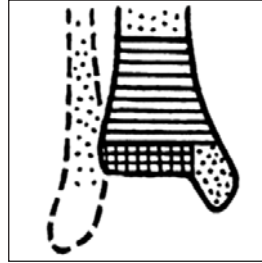
The incision illustrated below are indicated for the following fractures.



A. Extra-articular (43-A)



B. Partial articular (43-B)



C. Complete articular (43-C)

OTA Fracture Classification courtesy of the Orthopaedic Trauma Association. For more information go to www.ota.org

For a minimally invasive procedure, a short incision at the medial malleolus is recommended. Short stab incisions can be made to access screw holes in the plate shaft.



Exposure



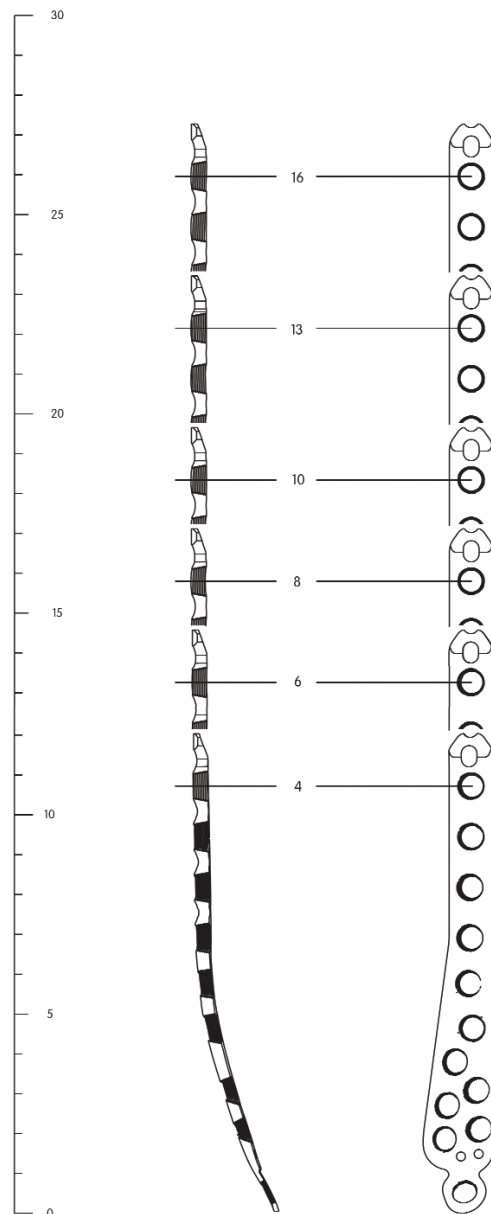
Medial Distal Tibia Locking Plate



Surgical Technique

Plate Selection

Using the PERI-LOC Medial Distal Tibia Locking Plate Preoperative Template, determine the appropriate length plate for the fracture. In general, a longer plate allows for better mechanical advantage over a shorter plate. An allowance for five screw holes above the most proximal aspect of the fracture is recommended when selecting plate length.



PERI-LOC 3.5mm Medial Distal Tibia Locking Plate
Preoperative Template

Cat. No. 7118-0918

Articular Reduction and Provisional Fixation

It is important that articular fracture reduction be obtained prior to placement of locking screws. Temporarily secure articular fragments by using K-Wires and/or Reduction Forceps. Place provisional and/or definitive fixation outside the plate if necessary.



Plate Positioning

Insert the plate using percutaneous insertion through the distal incision for a minimally invasive procedure.



Contour the distal tab as necessary against the medial malleolus.



Reduction Forceps
Cat. No. 7117-0044

2.0mm X 228mm
K-Wire
Cat. No. 7117-3361

Position the plate and reduce the fracture manually. Confirm coronal and sagittal alignment as well as plate position on the shaft. Fix the plate to the diaphysis with two diaphyseal Provisional Fixation Pins allowing adequate spread between them. Place the metaphyseal Provisional Fixation Pin through one of the distal holes above the joint.



2.7mm Provisional
Fixation Pin, 18mm
Cat. No. 7117-3322



2.7mm Provisional
Fixation Pin, 40mm
Cat. No. 7117-3323

Screw Insertion

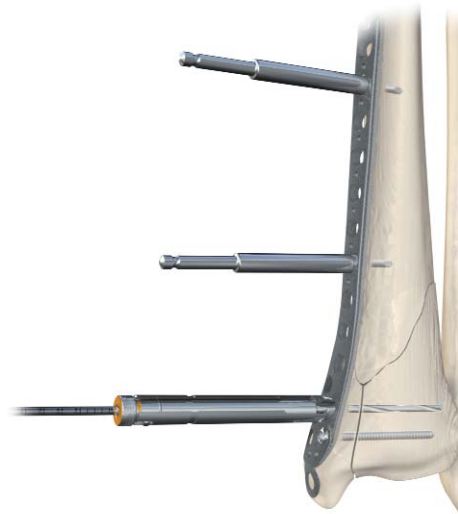
Proceed with definitive fixation of fracture using appropriate screw selections. If non-locking screws are needed for either fragment, they must be inserted prior to insertion of locking screws in that fragment. Locking screws should be used through at least two of the distal holes and two of the shaft holes.

Pre-drill for the 3.5mm Self-Tapping Cortex Screws (Non-Locking) using the 2.7mm Drill Bit with Quick Connect through the 2.7mm Compression or Neutral Locking Hole Insert (green or gold round drill guide inserts).

Measure for length by reading the calibrations on the 2.7mm Drill Bit or by using the short 3.5mm Screw Depth Gauge and insert the appropriate length 3.5mm Self-Tapping Cortex Screw.

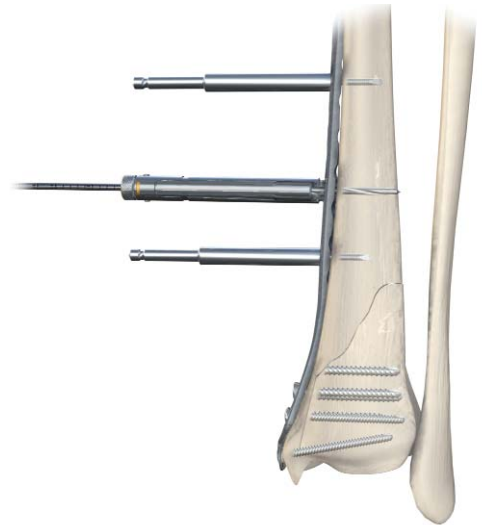


Continue with the distal holes by placing the 3.5mm Locking Screw Guide with the 2.7mm Locking Drill Guide Insert (orange insert) into one of the distal locking holes. Pre-drill with the 2.7mm Calibrated Drill Bit through the guide insert advancing the drill tip to the desired screw length. Measure for length by reading the calibrations on the 2.7mm Drill Bit or by using the Short 3.5mm Screw Depth Gauge and insert the appropriate length 3.5mm Self-Tapping Cortex Screw (Locking) using the 3.5mm Hexdriver with Quick Connect.



					
2.7mm Neutral Locking Hole Insert Cat. No. 7117-3514	2.7mm Compression Locking Hole Insert Cat. No. 7117-3515	Universal Drill Guide Handle Cat. No. 7117-3349	3.5mm Screw Depth Gauge Cat. No. 7117-3523	3.5mm Self-Tapping Cortex Screw (Non-Locking) Cat. No. 7180-40XX	3.5mm Locking Self-Tapping Cortex Screw Cat. No. 7180-50XX

To insert locking screws in the diaphysis, place the 3.5mm Locking Screw Guide with the 2.7mm Locking Drill Guide Insert (orange insert) into the screw hole. Pre-drill with the 2.7mm Drill Bit through both cortices. Measure for length by reading the calibration on the 2.7mm Drill Bit or by using the Short 3.5mm Screw Depth Gauge and insert the appropriate length 3.5mm Locking Screw.



Confirm screw placement by obtaining AP and lateral fluoroscopic images and close the wound.



2.7mm Drill Bit with
Quick Connect
Cat. No. 7117-3503



3.5mm Locking
Screw Guide
Cat. No. 7117-3538



2.7mm Locking Drill
Guide Insert
Cat. No. 7117-3529

Catalog Information

Catalog Information – Anterolateral Distal Tibia Plates

Set Configuration – 3.5mm Anterolateral Distal Tibia Locking Plates

Cat. No.	Length	Quantity in Set
7180-0604	4H Left 72mm	0
7180-0606	6H Left 98mm	1
7180-0608	8H Left 123mm	1
7180-0610	10H Left 148mm	1
7180-0613	13H Left 186mm	1
7180-0704	4H Right 72mm	0
7180-0706	6H Right 98mm	1
7180-0708	8H Right 123mm	1
7180-0710	10H Right 148mm	1
7180-0713	13H Right 186mm	1



Catalog Information – Medial Distal Tibia Plates

Set Configuration – 3.5mm Medial Distal Tibia Locking Plates

Cat. No.	Length	Quantity in Set
7180-1006	6H Left 146mm	1
7180-1008	8H Left 171mm	1
7180-1010	10H Left 196mm	1
7180-1013	13H Left 235mm	1
7180-1016	16H Left 272mm	0
7180-1106	6H Right 146mm	1
7180-1108	8H Right 171mm	1
7180-1110	10H Right 196mm	1
7180-1113	13H Right 235mm	1
7180-1116	16H Right 272mm	0



Catalog Information – Small Fragment System Screws

2.7mm Self-Tapping Cortex Screws (Non-Locking)



Cat. No.	Length	Quantity in Set
7180-3010	10mm	3
7180-3012	12mm	3
7180-3014	14mm	3
7180-3016	16mm	3
7180-3018	18mm	3
7180-3020	20mm	3
7180-3022	22mm	3
7180-3024	24mm	3
7180-3026	26mm	3
7180-3028	28mm	3
7180-3030	30mm	3
7180-3032	32mm	3
7180-3034	34mm	3
7180-3036	36mm	3
7180-3038	38mm	3
7180-3040	40mm	3
7180-3045	45mm	3
7180-3050	50mm	3
7180-3055	55mm	3
7180-3060	60mm	3
7180-3065	65mm	3
7180-3070	70mm	3

3.5mm Self-Tapping Cortex Screws (Non-Locking)



Cat. No.	Length	Quantity in Set
7180-4010	10mm	5
7180-4012	12mm	5
7180-4014	14mm	5
7180-4016	16mm	10
7180-4018	18mm	10
7180-4020	20mm	5
7180-4022	22mm	5
7180-4024	24mm	5
7180-4026	26mm	5
7180-4028	28mm	5
7180-4030	30mm	5
7180-4032	32mm	5
7180-4034	34mm	5
7180-4036	36mm	5
7180-4038	38mm	5
7180-4040	40mm	5
7180-4045	45mm	5
7180-4050	50mm	5
7180-4055	55mm	5
7180-4060	60mm	5
7180-4065	65mm	5
7180-4070	70mm	5
7180-4075	75mm	5
7180-4080	80mm	5
7180-4085	85mm	0
7180-4090	90mm	0
7180-4095	95mm	0
7180-4100	100mm	0
7180-4105	105mm	0
7180-4110	110mm	0

3.5mm Locking Self-Tapping Cortex Screws



Cat. No.	Length	Quantity in Set
7180-5010	10mm	5
7180-5012	12mm	5
7180-5014	14mm	5
7180-5016	16mm	10
7180-5018	18mm	10
7180-5020	20mm	5
7180-5022	22mm	5
7180-5024	24mm	5
7180-5026	26mm	5
7180-5028	28mm	5
7180-5030	30mm	5
7180-5032	32mm	5
7180-5034	34mm	5
7180-5036	36mm	5
7180-5038	38mm	5
7180-5040	40mm	5
7180-5045	45mm	5
7180-5050	50mm	5
7180-5055	55mm	5
7180-5060	60mm	5
7180-5065	65mm	5
7180-5070	70mm	5
7180-5075	75mm	5
7180-5080	80mm	5
7180-5085	85mm	0
7180-5090	90mm	0
7180-5095	95mm	0
7180-5100	100mm	0
7180-5105	105mm	0
7180-5110	110mm	0

4.0mm Fully Threaded Cancellous Screws



Cat. No.	Length	Quantity in Set
7180-5210	10mm	3
7180-5212	12mm	3
7180-5214	14mm	3
7180-5216	16mm	3
7180-5218	18mm	3
7180-5220	20mm	3
7180-5222	22mm	3
7180-5224	24mm	3
7180-5226	26mm	3
7180-5228	28mm	3
7180-5230	30mm	3
7180-5232	32mm	3
7180-5234	34mm	3
7180-5236	36mm	3
7180-5238	38mm	3
7180-5240	40mm	3
7180-5245	45mm	3
7180-5250	50mm	3
7180-5255	55mm	3
7180-5260	60mm	3
7180-5265	65mm	3
7180-5270	70mm	3
7180-5275	75mm	3
7180-5280	80mm	3
7180-5285	85mm	0
7180-5290	90mm	0
7180-5295	95mm	0
7180-5300	100mm	0

4.0mm Partially Threaded Cancellous Screws



Cat. No.	Length	Quantity in Set
7180-5310	10mm	3
7180-5312	12mm	3
7180-5314	14mm	3
7180-5316	16mm	3
7180-5318	18mm	3
7180-5320	20mm	3
7180-5322	22mm	3
7180-5324	24mm	3
7180-5326	26mm	3
7180-5328	28mm	3
7180-5330	30mm	3
7180-5335	35mm	3
7180-5340	40mm	3
7180-5345	45mm	3
7180-5350	50mm	3
7180-5355	55mm	3
7180-5360	60mm	3
7180-5365	65mm	3
7180-5370	70mm	3
7180-5375	75mm	3
7180-5380	80mm	3
7180-5385	85mm	0
7180-5390	90mm	0
7180-5395	95mm	0
7180-5400	100mm	0

Washers

Cat. No.	Length	Quantity in Set
7114-3007	7.0mm O.D.	6



Catalog Information – Small Fragment System Instruments

Sharp Hook

Cat. No. 7117-0043



Hohmann Retractor, 8mm Width

Cat. No. 7117-0057



Hohmann Retractor, 15mm Width

Cat. No. 7117-0095



Hohmann Retractor Bent, 8mm

Cat. No. 7117-3369



Wire Bending Pliers, 140mm Length

Cat. No. 7117-0063



Bending Pliers for 2.7mm & 3.5mm Plates

Cat. No. 7117-0076



Bending Pliers for 3.5mm Reconstruction Plates

Cat. No. 7117-0175



Periosteal Elevator 6mm, Rounded

Cat. No. 7117-0097



Universal Plate Bending Irons

Cat.No. 7117-3367



Small Fragment Countersink

Cat. No. 7117-3344



Reduction Forceps with Ratchet-Bowed, 205mm

Cat. No. 7117-3370



Reduction Forceps with Points, Broad

Cat. No. 7117-3377



Reduction Forceps with Serrated Jaw

Cat. No. 7117-3378



3.5mm Locking Screw Guide

Cat. No. 7117-3538



2.7mm Locking Drill Guide Insert

Cat. No. 7117-3529



2.7mm Locking Drill Guide – One Piece

Optional

Cat. No. 7117-3450



Universal Drill Guide Handle

Cat.No. 7117-3349



2.0mm Wire/Drill Insert

Cat. No. 7117-3517



2.7mm Drill Guide Insert

Cat. No. 7117-3510



3.5mm Drill Guide Insert

Cat. No. 7117-3513



2.7mm Neutral Locking Hole Insert

Cat. No. 7117-3514



2.7mm Compression Locking Hole Insert

Cat. No. 7117-3515



2.7mm Neutral Slot Insert

Cat. No. 7117-3512



2.7mm Compression Slot Insert

Cat. No. 7117-3511



2.0mm Parallel Wire/Drill Guide

Cat. No. 7117-3516



Short 3.5mm Screw Depth Gauge

Cat. No. 7117-3523



2.7mm Screw Depth Gauge

Cat. No. 7117-3525



3.5mm Screw Depth Gauge

Cat. No. 7117-3534



Cannulated Bending Irons for K-Wires

Cat.No. 7117-3527



Cannulated AO to Trinkle Adaptor

Cat.No. 7117-3528



Small T-Handle, Quick Coupling

Cat.No. 7117-3542



Tear Drop Handle Screwdriver with Quick Connect

Cat.No. 7117-3543



Large Screwdriver Handle

Cat.No. 7117-3547



Self Centering Reverse Verbrugge, 190mm

Cat. No. 7117-3544



2.5mm Hexdriver Shaft with AO Quick Connect

Cat. No. 7117-3535



3.5mm Hexdriver Shaft with AO Quick Connect

Cat.No. 7117-3537



Small Fragment Guide Removal Assembly

Cat. No. 7117-3549



Catalog Information – Small Fragment System Trays

Large Outer Case – 4.8"

Cat. No. 7112-9400

Lid for Outer Cases

Cat.No. 7112-9402

PERI-LOC Small Fragment Instrument Tray

Cat. No. 7117-0330

Catalog Information – Small Fragment System Disposables

K-Wires with Trocar Point and Threaded Pins

Cat. No.	Description	Quantity in Set
7116-1012	1.25mm x 150mm	6
7116-1016	1.6mm x 150mm	6
7116-1020	2.0mm x 150mm	6



Taps with Quick Connect

Cat. No.	Description	Quantity in Set
7117-3318	3.5mm	2
7117-3366	2.7mm	2
7117-3386	4.0mm Cancellous	2



Provisional Fixation Pins

Cat. No.	Description	Quantity in Set
7117-3322	2.7mm x 18mm	4
7117-3323	2.7mm x 40mm	4



Drill Bits with Quick Connect

Cat. No.	Description	Quantity in Set
7117-3501	2.0mm	2
7117-3502	2.7mm Short	2
7117-3503	2.7mm	2
7117-3504	3.5mm Short	2



**Orthopaedic Trauma &
Clinical Therapies**

Smith & Nephew, Inc.
1450 Brooks Road
Memphis, TN 38116
USA

www.smith-nephew.com

Telephone: 901-396-2121
Information: 1-800-821-5700
Orders/inquiries: 1-800-238-7538

The following statement is required by the U.S. FDA: WARNING: This device is not approved for screw attachment or screw fixation to the posterior elements (pedicles) of the cervical, thoracic or lumbar spine.