

DynaNite[®] Compression Plate System

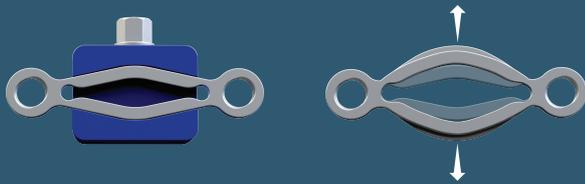
Surgical Technique



DynaNite® Compression Plate System

Introduction

The DynaNite nitinol compression plates use the superelastic principles of nitinol to create dynamic compression across a fusion site. Each plate comes packaged in a compression device that narrows the bridge and lengthens the plate. As the compression device is removed, the bridge is allowed to widen to its manufactured state due to the superelastic properties of the nitinol plate. As the plate widens and shortens, it naturally creates compression across a fusion site when fixated with screws.



The Arthrex DynaNite nitinol compression plate is intended to be used for fixation such as: LisFranc arthrodesis, mono- or bicortical osteotomies in the forefoot, 1st metatarsophalangeal arthrodesis, Akin osteotomy, midfoot and hindfoot arthrodeses or osteotomies, fixation of osteotomies for hallux valgus treatment (scarf and chevron), and arthrodesis of the metatarsocuneiform joint to reposition and stabilize metatarsus primus varus. The Arthrex DynaNite compression plate is intended to be used in conjunction with the Arthrex Compression FT screws.

This multiplate system allows for use in several arthrodesis applications:

- 1st MTP
- 1st, 2nd, 3rd TMT
- Calcaneocuboid
- Talonavicular
- Multizone



2-Hole



3-Hole T



4-Hole Straight



4-Hole X



Multilevel



Adjunct Products

The DynaNite® Compression Plate System can be used in addition to other Arthrex products to maximize overall construct stability. This can translate to improved fusion rates for simple and complex arthrodesis throughout the foot and ankle.

Mini Joint Distractor

This unique device allows for both distraction and compression at the fusion site. It offers great flexibility for joint preparation, visualization, and intraoperative compression. This device gives the surgeon the option to use 1.6 mm or 2.4 mm guidewires or a stronger 3.0 mm traction screw.



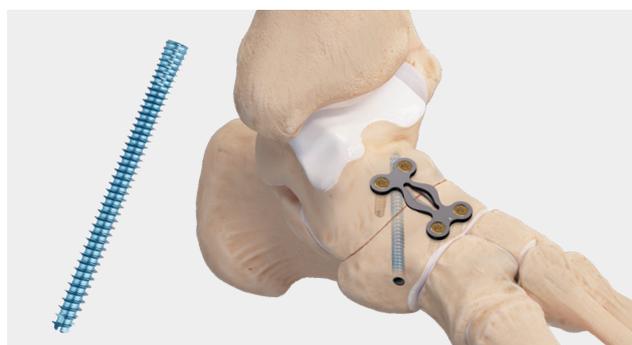
Variable-Angle Locking (VAL) Screws

All of the DynaNite compression plates have threaded holes, allowing for 3.0 mm VAL screw fixation. If the plate is sitting off the bone, 3.0 mm cortical screws may also be used.



Compression FT Screws

To enhance the overall strength¹ of the construct and generate initial compression and bony opposition, Compression FT screws must be initially inserted across the fusion site prior to plate fixation.



DynaNite Staples

The comprehensive line of nitinol staples can also be used with the DynaNite compression plates to provide further compression across the arthrodesis site.



Reference

1. Arthrex, Inc. Data on file (APT-04726). Naples, FL; 2020.

DynaNite® Compression Plate Size Options



4-Hole Straight Plates



22 mm



27 mm



32 mm

3-Hole T-Plates



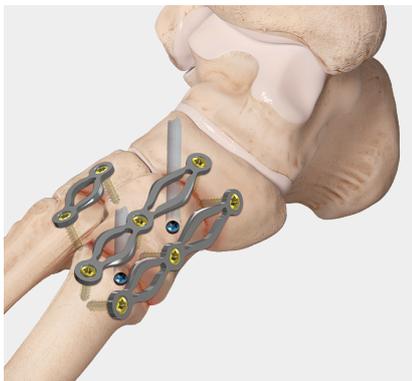
22 mm



27 mm



32 mm



Multilevel Plates



20 mm/20 mm



20 mm/30 mm



20 mm/25 mm



25 mm/25 mm



2-Hole Plates



15 mm



20 mm



25 mm



30 mm



DynaNite Wrench

The DynaNite wrench may be needed for hard-to-reach areas. From a dorsal approach, grab the hex mechanism and rotate counterclockwise to remove the compression device.



4-Hole X-Plates



22 mm



27 mm



32 mm

1st MTP Arthrodesis



Prepare the 1st MTP joint for fusion using the metatarsal and phalangeal reamers over a 1.6 mm guidewire.



To fit the plate to the bone, plane the dorsal surface of the joint using an osteotome to ensure the plate lays flat on the surface of the arthrodesis site.



Use the trial sizer to select the appropriate length 4-hole straight plate. Temporarily fixate the plate with BB-Taks in the most proximal and most distal screw holes.

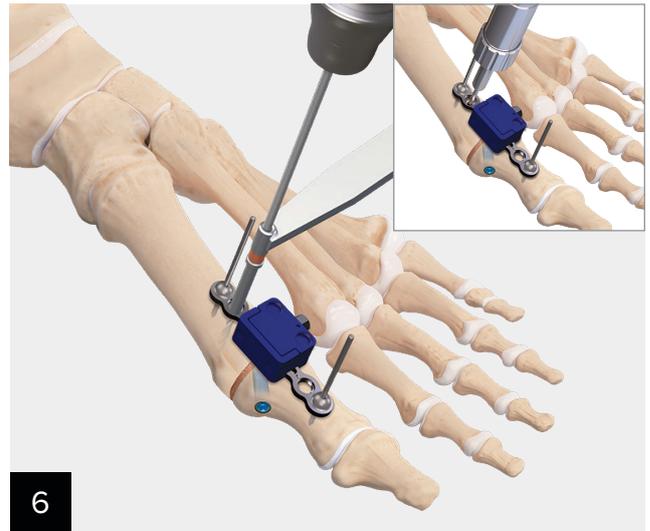
Note: The locking tower can be used as a joystick by threading it into the compression device.



Insert a 1.1 mm K-wire across the joint (distal-medial to proximal-lateral) and use the depth gauge to measure the appropriate screw length for a Compression FT screw prior to plate fixation.



Drill over the K-wire with a 2.7 mm cannulated drill and insert the 3.5 Mini Compression FT™ screw across the joint prior to plate fixation.

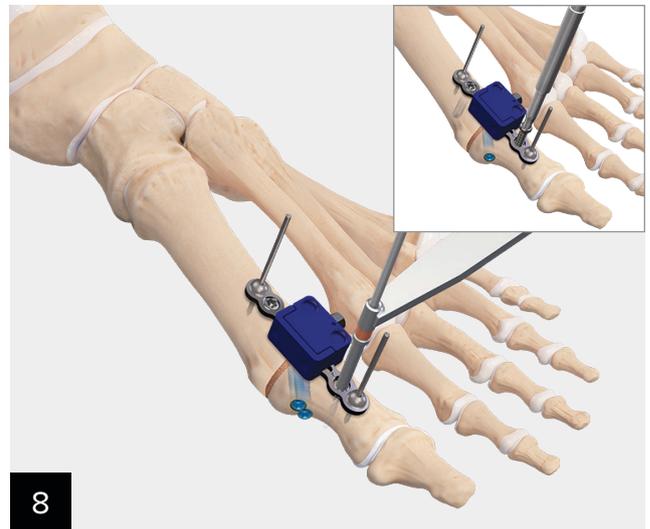


Using a 2.0 mm drill, drill and measure for a 3.0 mm cortical screw in the open proximal screw hole closest to the joint.

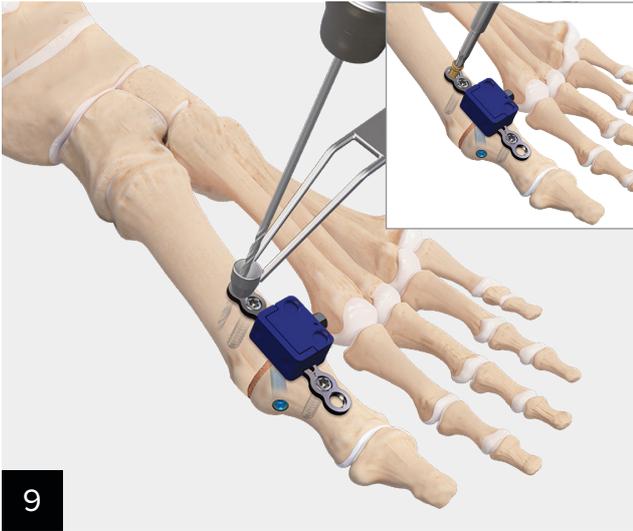
Note: A 3.0 mm VAL screw can also be inserted here by using either the fixed-angle locking tower or the VAL handled drill guide.



Insert a 3.0 mm cortical screw.

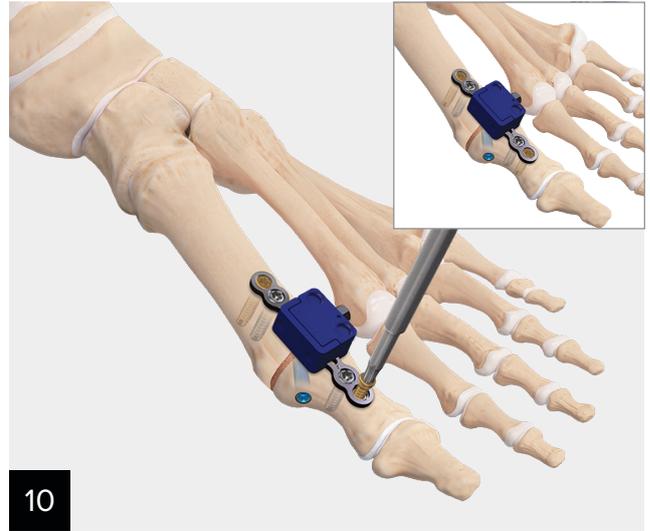


Repeat the same drill, measure, and insertion steps for a 3.0 mm cortical or VAL screw in the open distal screw hole.



9

Remove the BB-Taks and drill in the most proximal screw hole using the VAL drill guide and 2.0 mm drill. Insert the appropriate length 3.0 mm VAL screw.



10

Follow the same drill, measure, and insertion steps for a final 3.0 mm VAL screw in the most distal screw hole.



11

Use the same T10 hexalobe driver for the 3.0 mm screws to remove the compression device. Turn the driver in a counterclockwise fashion.



12

Once the compression device is removed, the bridge of the plate will expand to its manufactured shape, shortening the plate and providing compression across the arthrodesis site.

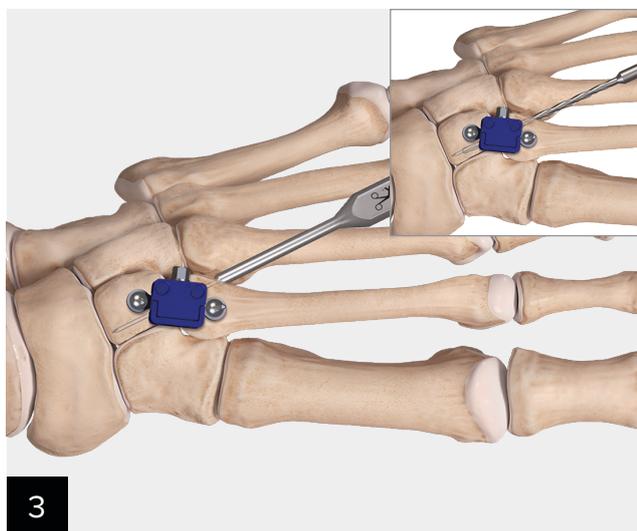
2nd TMT Arthrodesis



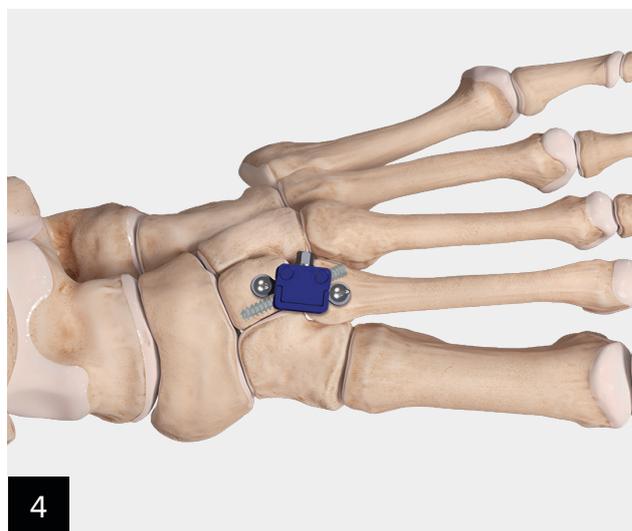
1 Use the mini joint distractor to expose the joint and prepare the 2nd TMT joint for fusion. Also, plane the dorsal surface of the joint using an osteotome to ensure the plate lays flat on the surface of the arthrodesis site.



2 Use the trial sizer to select the appropriate length 2-hole plate. Temporarily fixate the plate with BB-Taks.



3 Insert a 1.1 mm K-wire across the joint, measure the appropriate screw length, and drill with a 2.7 mm cannulated drill.



4 Insert a 3.5 mm Mini Compression FT™ screw across the joint.



5
Next, drill the proximal screw hole with a 2.0 mm drill and measure the screw length using a depth gauge.



6
Insert a 3.0 mm VAL screw in the proximal screw hole. Repeat the drill, measure, and insertion steps for the distal screw hole.



7
Use the T10 hexalobe driver to remove the compression device.



8
Removing the compression device will allow for the plate to shorten, creating compression across the arthrodesis site.

Talonavicular Fusion



1 Prepare the joint for fusion using an MIS burr or an osteotome.



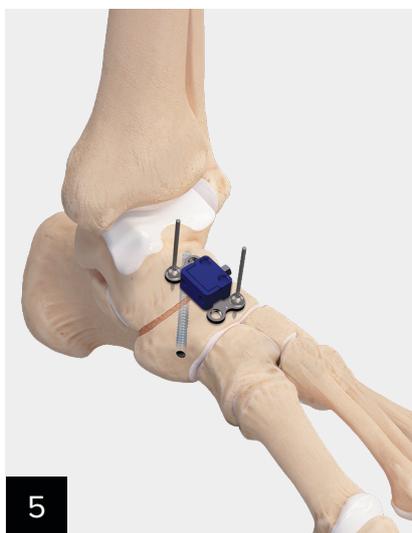
2 Plane the dorsal surface of the joint to ensure the plate sits flat across the arthrodesis site.



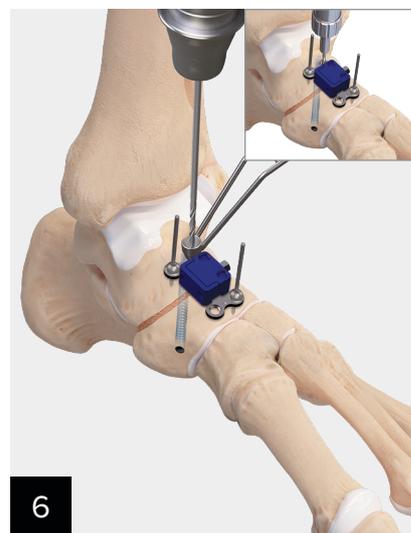
3 Use the trial sizer to select the appropriate length 4-hole X-plate. Temporarily fixate the plate with BB-Taks.



4 Insert a 1.1 mm K-wire across the joint, measure the appropriate screw length, and drill with a cannulated drill.



5 Insert a 3.5 Mini or 4.0 standard Compression FT screw across the joint.



6 Drill in the proximal lateral screw hole with a 2.0 mm drill. Measure for the screw using the depth gauge and insert a 3.0 mm cortical or VAL screw.



7
Next, drill the distal medial screw hole with a 2.0 mm drill.



8
Measure for the VAL screw using the depth gauge.



9
Insert a 3.0 mm cortical or VAL screw.



10
Repeat the drill, measure, and insertion steps for the remaining screw holes.

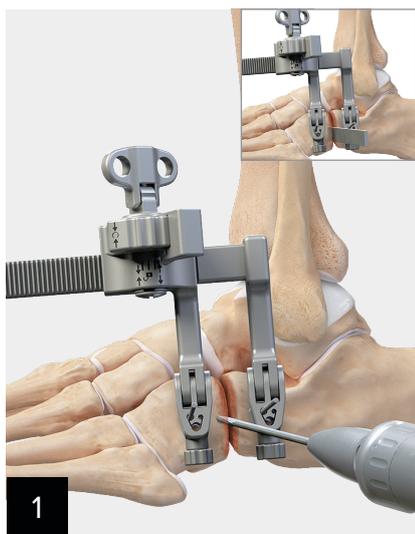


11
Use the T10 hexalobe driver to remove the compression device.



12
Removing the compression device will allow for the plate to shorten, creating compression across the arthrodesis site.

Calcaneocuboid Fusion



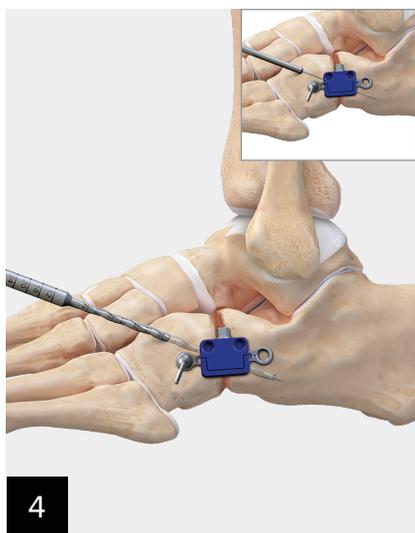
1 Prepare the joint for fusion using an MIS burr or osteotome.



2 Plane the lateral surface of the joint to ensure the plate lays flat on the surface of the arthrodesis site.



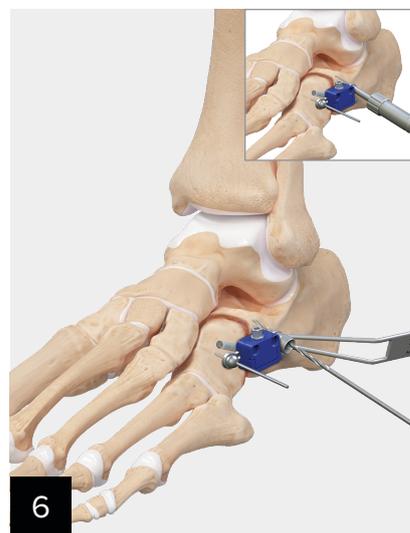
3 Use the trial sizer to select the appropriate length 2-hole plate. Temporarily fixate the plate with BB-Taks.



4 Insert a 1.1 mm K-wire across the joint, measure the appropriate screw length, and drill with a cannulated drill.



5 Insert a 3.5 Mini or 4.0 standard Compression FT screw across the joint.



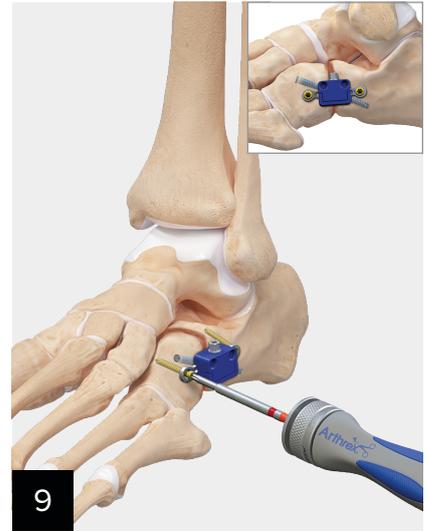
6 Drill the proximal screw hole with a 2.0 mm drill and measure the screw length using a depth gauge.



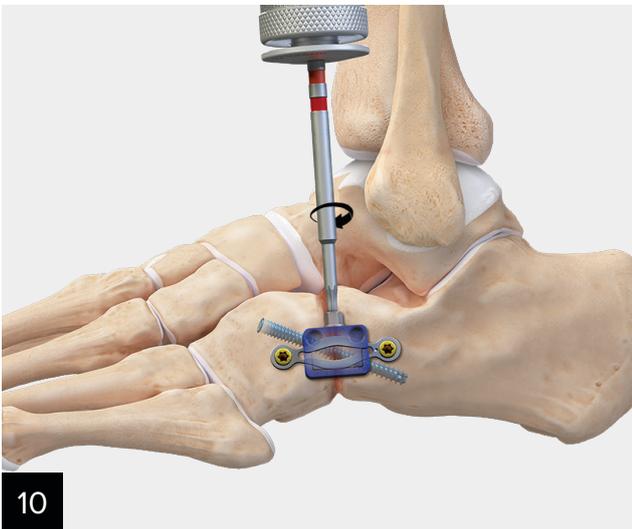
Insert a 3.0 mm cortical or VAL screw into the proximal screw hole.



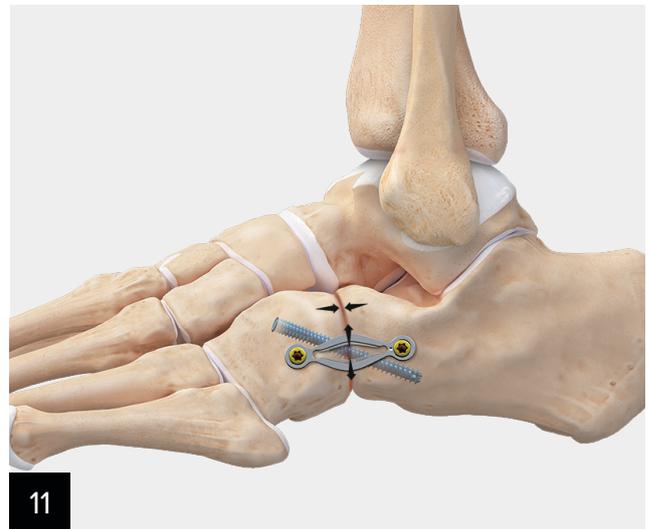
Next, drill the distal screw hole with a 2.0 mm drill. Measure the screw length using the depth gauge.



Insert a 3.0 mm cortical or VAL screw into the distal screw hole.



Use the T10 hexalobe driver to remove the compression device.



Removing the compression device will allow for the plate to shorten, creating compression across the arthrodesis site.

Lapidus Arthrodesis



Prepare the TMT joint with an MIS burr or osteotome. Also, plane the surface of the joint to ensure the plate lays flat on the surface of the arthrodesis site.



Use the trial sizer to select the appropriate length 3-hole T-plate. Temporarily fixate the plate with BB-Taks.



Insert a 1.1 mm K-wire across the joint, measure the appropriate screw length, and drill with a cannulated drill.



Insert a 3.5 Mini or 4.0 standard Compression FT screw across the joint.



Drill the dorsal proximal screw hole with a 2.0 mm drill and measure the screw length using a depth gauge.



6

Insert a 3.0 mm cortical or VAL screw in the dorsal proximal screw hole. Repeat the drill, measure, and insertion steps for the remaining plantar proximal screw hole.



7

Using a 2.0 mm drill, drill and measure the screw length using a depth gauge.



8

Insert a 3.0 mm cortical or VAL screw into the distal screw hole.



9

Use the T10 hexalobe driver to remove the compression device.



10

Removing the compression device will allow for the plate to shorten, creating compression across the arthrodesis site.

Multizone Fusion (medial column fusion of NC and TMT joint)



Prepare the naviculocuneiform joint (NC) for fusion using an MIS burr or osteotome.



Also prepare the TMT joint for fusion using the same approach.



Use the trial sizer to select the appropriate length segmented plate to fit across both fusion sites. Measure the NC joint first and then the TMT joint.



Temporarily fixate the plate with BB-Taks.



Insert a 1.1 mm K-wire across the NC joint, measure the appropriate screw length, drill, and insert a 3.5 Mini or 4.0 Compression FT screw.



Repeat the previous steps and insert a second compression screw across the TMT joint.



7
Using a 2.0 mm drill, drill, measure, and insert a 3.0 mm cortical or VAL screw into the most proximal screw hole.



8
Repeat the same steps and insert 3.0 mm screws into the cuneiform and metatarsal.



9
If an orthogonal construct is desired, this can be achieved by placing a medial plate. Repeat the screw insertion steps outlined in the previous steps to complete the construct.



10
Use the T10 hexalobe driver to remove the proximal compression devices at the NC joint.



11
Next, remove the distal compression devices at the TMT joint to complete the construct.



12
Final fixation and compression.

Ordering Information

DynaNite® Reusable Instrument Set (AR-8717S)

Product Description	Item Number
Drill Guide, adjustable	AR-8717AG
Drill Guide, 9 mm/11 mm	AR-8717G-01
Drill Guide, 13 mm/15 mm	AR-8717G-02
Drill Guide, 15 mm/18 mm	AR-8717G-03
Drill Guide, 20 mm/25 mm	AR-8717G-04
Tamp, small/medium	AR-8717ST-01
Tamp, large	AR-8717ST-02
Tamp, SuperMX™ staple	AR-8717ST-03
Staple Sizing Guide	AR-8717T
Instrument Case	AR-8717C
Trial, straight plate, 2-hole	AR-8771T-2S
Trial, T-plate, 3-hole	AR-8771T-3T
Trial, straight plate, 4-hole	AR-8771T-4S
Trial, square plate, 4-hole	AR-8771T-4X
DynaNite Wrench	AR-8771W
Disposables	
Guidewire, 1.2 mm, qty. 6	AR-8005K
DynaNite Staple Alignment Pin, small, qty. 2	AR-8717AP-01
DynaNite Staple Alignment Pin, medium, qty. 2	AR-8717AP-02
DynaNite Staple Alignment Pin, large	AR-8717AP-03
DynaNite Staple Drill Bit, calibrated, 1.6 mm, qty. 2	AR-8717D-01
DynaNite Staple Drill Bit, calibrated, 2.0 mm, qty. 2	AR-8717D-02
DynaNite Staple Drill Bit, calibrated, 2.6 mm, qty. 2	AR-8717D-03

DynaNite Nitinol Compression Plates

Product Description	Item Number
Straight Plate, 2-hole, 16 mm	AR-8771-0216S
Straight Plate, 2-hole, 20 mm	AR-8771-0220S
Straight Plate, 2-hole, 25 mm	AR-8771-0225S
Straight Plate, 2-hole, 30 mm	AR-8771-0230S
T-Plate, 3-hole, 22 mm	AR-8771-0322T
T-Plate, 3-hole, 27 mm	AR-8771-0327T
T-Plate, 3-hole, 32 mm	AR-8771-0332T
Square Plate, 4-hole, 22 mm	AR-8771-0422X
Square Plate, 4-hole, 27 mm	AR-8771-0427X
Square Plate, 4-hole, 32 mm	AR-8771-0432X
Straight Plate, 4-hole, 20 mm	AR-8771-0420S
Straight Plate, 4-hole, 25 mm	AR-8771-0425S
Straight Plate, 4-hole, 30 mm	AR-8771-0430S
Segmented Plate, 3-hole, 20 mm/20 mm	AR-8771-2020MS
Segmented Plate, 3-hole, 20 mm/25 mm	AR-8771-2025MS
Segmented Plate, 3-hole, 20 mm/30 mm	AR-8771-2030MS
Segmented Plate, 3-hole, 25 mm/25 mm	AR-8771-2525MS

Compression FT Screw System (AR-8738S)

Product Description	Item Number
Instruments	
Depth Device	AR-8737-51
Obturator for Drill Guide	AR-8737-44
Percutaneous Drill Guide	AR-8737-43
Screwdriver Handle, ratcheting	AR-8950RH
Guidewire Plunger	AR-8737-56
Screw Holding Forceps	AR-8941F
Percutaneous Pin Clamp	AR-8737-57
Compression FT Screw System Instrument Case	AR-8738C
2.5 Micro Compression FT™ Screw Instruments	
Driver, cannulated, 1.5 mm hex	AR-8737-37
Driver, solid, 1.5 mm hex	AR-8737-45
Profile Drill, micro	AR-8737-46
Parallel Drill Guide	AR-8737-48
Screw Extractor/Trephine	AR-8737-59
3.5 Mini Compression FT™ Screw Instruments	
Driver, T10 hexalobe, cannulated	AR-8737-38
Driver, T10 hexalobe, solid	AR-8950SD-10
Profile Drill, mini	AR-8737-47
Parallel Drill Guide	AR-8737-49
Screw Extractor/Trephine	AR-8737-59
4.0 Standard Compression FT Screw Instruments	
Driver, T10 hexalobe, cannulated	AR-8737-38
Driver, T10 hexalobe, solid	AR-8950SD-10
Profile Drill, standard	AR-8737-54
Parallel Drill Guide	AR-8737-55
Screw Extractor/Trephine	AR-8737-60
Implants	
2.5 Micro Compression FT Screws* (a) 8 mm-14 mm (1 mm increments) 16 mm-50 mm (2 mm increments)	AR-8725-08H – 14H AR-8725-16H – 50H
3.5 Mini Compression FT™ Screws* (b) 12 mm-60 mm (2 mm increments)	AR-8730-12H – 60H
4.0 Standard Compression FT Screws (c) 16 mm-60 mm (2 mm increments)	AR-8740-16H – 60H

Disposables (Not Included in Set)

Product Description	Item Number
2.5 Micro Compression FT™ Screws	
Drill Bit, straight, cannulated, 2 mm	AR-8737-34
Drill Bit, straight, cannulated, 2.2 mm (hard bone option)	AR-8737-58
Guidewire With Trocar Tip, 0.034 in (0.86 mm), laser-marked	AR-8737-39
Guidewire With Double Trocar Tip, 0.034 in (0.86 mm), laser-marked	AR-8737-39KD
Guidewire With Trocar Tip, threaded, 0.034 in (0.86 mm), laser-marked	AR-8737-40
3.5 Mini Compression FT™ Screws	
Drill Bit, straight, cannulated, 2.7 mm	AR-8737-35
Guidewire With Trocar Tip, 0.045 in (1.1 mm), laser-marked	AR-8737-41
Guidewire With Double Trocar Tip, 0.045 in (1.1 mm), laser-marked	AR-8737-41KD
Guidewire With Trocar Tip, threaded, 0.045 in (1.1 mm), laser-marked	AR-8737-42
4.0 Standard Compression FT Screws	
Drill Bit, straight, cannulated, 3.2 mm	AR-8737-50
Guidewire With Trocar Tip, 0.045 in (1.1 mm), laser-marked	AR-8737-41
Guidewire With Double Trocar Tip 0.045 in (1.1 mm), laser-marked	AR-8737-41KD
Guidewire With Trocar Tip, threaded, 0.045 in (1.1 mm), laser-marked	AR-8737-42

Optional

Product Description	Item Number
Compression FT Screw System Caddy, common instruments	AR-8738C-01
Compression FT Screw System Caddy, Micro	AR-8738C-02
Compression FT Screw System Caddy, Mini	AR-8738C-03
Compression FT Screw System Caddy, Standard	AR-8738C-04

Literature

Product Description	Item Number
Arthrex Compression FT Screw System Brochure	LB1-0487-EN
The Arthrex Compression FT Screw Product and Technique Highlights	LS1-0487-EN
Arthrex Reference Chart for Compression FT Screws	LR1-000005-en-US



This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience, and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level and/or outcomes.

View U.S. patent information at www.arthrex.com/corporate/virtual-patent-marking

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