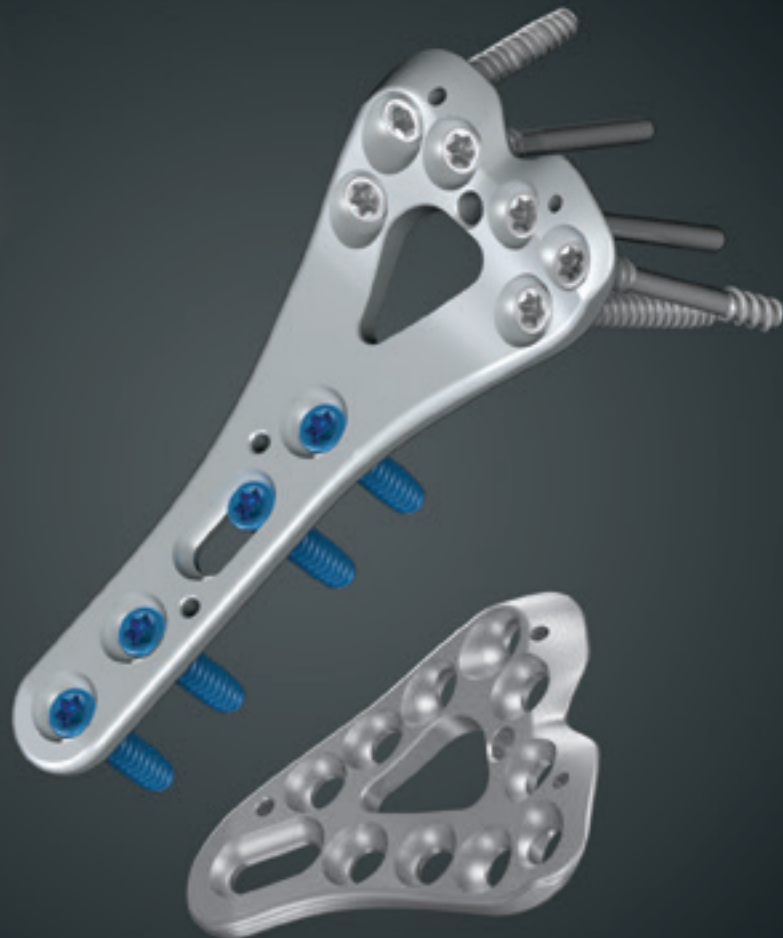


EXTREMILOCK™

Wrist Plating System

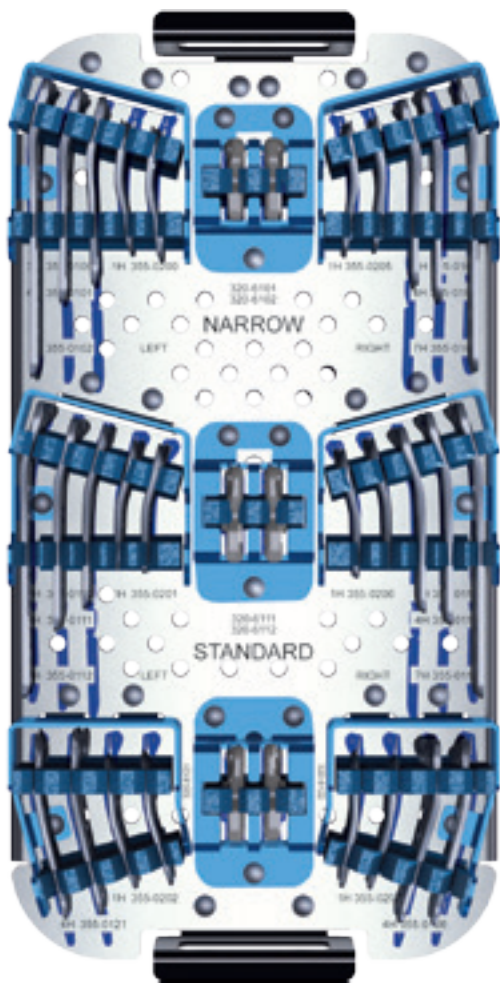
Surgical Technique Guide



Rethinking Possibilities, Reshaping Lives

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320-6302
Volar Distal Radius Plate Module, 1/4

Narrow



320-6101
Target Drill Guide, Narrow, Left



320-6102
Target Drill Guide, Narrow, Right



355-0101
4 Hole VDR Narrow Plate, Left



355-0106
4 Hole VDR Narrow Plate, Right



355-0200
1 Hole VDR Narrow Plate, Left



355-0205
1 Hole VDR Narrow Plate, Right

Standard



320-6111
Target Drill Guide, Standard, Left



320-6112
Target Drill Guide, Standard, Right



355-0111
4 Hole VDR Standard Plate, Left



355-0116
4 Hole VDR Standard Plate, Right



355-0201
1 Hole VDR Standard Plate, Left



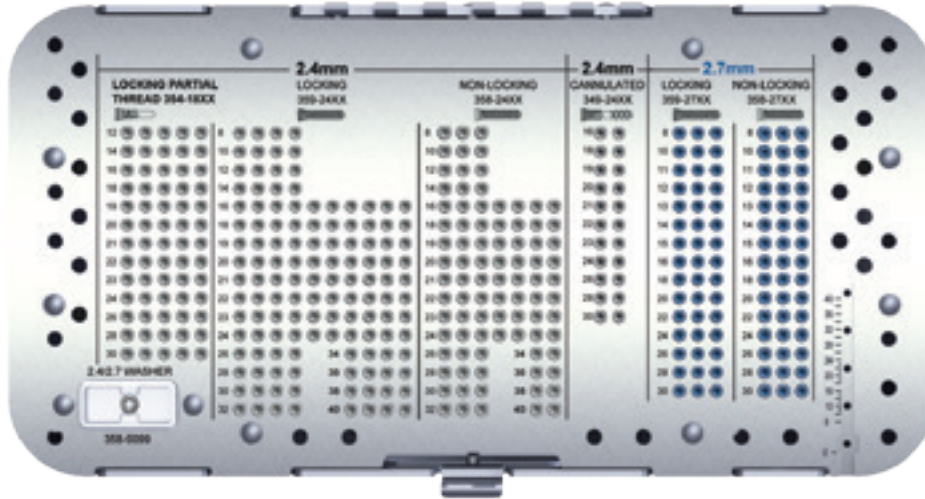
355-0206
1 Hole VDR Standard Plate, Right



355-0112
7 Hole VDR Standard Plate, Left



355-0117
7 Hole VDR Standard Plate, Right



320-6306
ExtremiLock Wrist Screw Module, 1/4

Screws



354-18XX

2.4mm x 12mm - 30mm Partially Threaded Locking Screw



359-24XX

2.4mm x 8mm - 40mm Variable Angle Locking Screw



358-24XX

2.4mm x 8mm - 40mm Cortex Screw



349-24XX

2.4mm x 16mm - 30mm Cannulated Lag Variable Angle Locking Screw



359-27XX

2.7mm x 8mm - 30mm Variable Angle Locking Screw



358-27XX

2.7mm x 8mm - 30mm Cortex Screw



358-0099

2.4/2.7 Washer

Sterile Packed Plates



355-0400-SP

VDR Radial Column
Standard, Left, Sterile



355-0402-SP

VDR Intermediate Column
Standard, Left, Sterile



355-0403-SP

VDR Intermediate Column
Standard, Right, Sterile



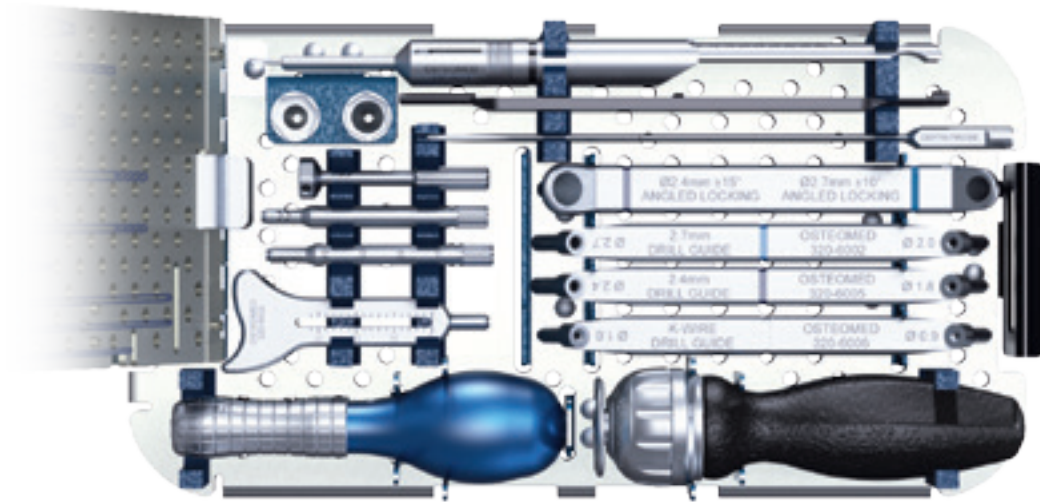
355-0401-SP

VDR Radial Column
Standard, Right, Sterile



355-0601-SP

6 Hole Radial Styloid Plate,
Sterile



320-6301 Primary Instrumentation Module, 1/4

Instruments



320-6004 Depth Gauge



320-6009 Cannulated Depth Gauge



320-6007 Measuring Probe



320-6001 2.4/2.7mm Screw Angle Drill Guide



320-6003 2.4mm Screw Quick Drill Guide



320-6002 2.7mm Screw Drill Guide



320-6005 2.4mm Screw Drill Guide



320-6006 0.9mm/1.6mm K-wire Drill Guide

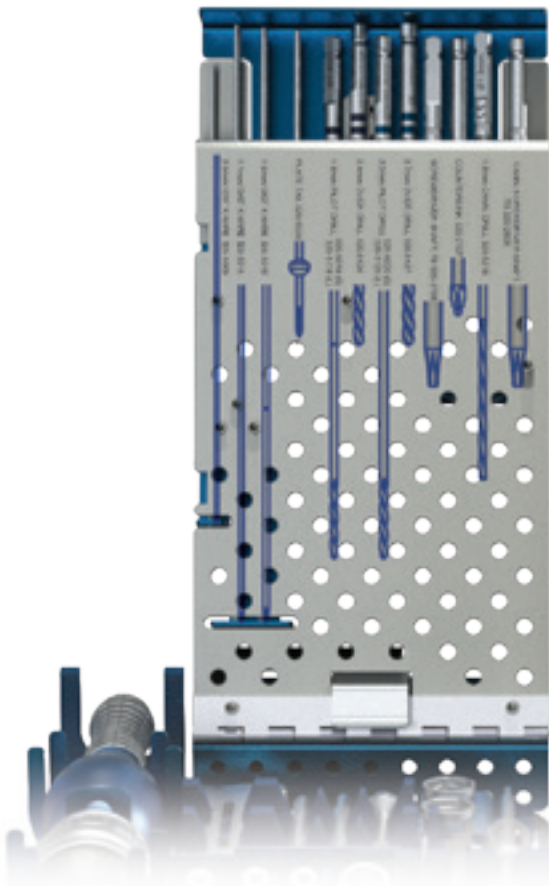


323-1701 Swivel Driver Handle, QC



323-1702 Ratcheting Driver Handle

Organizer Blocks Primary Instrumentation Module - Drills and Drivers



320-6301 Primary Instrumentation Module, 1/4

Drills and Drivers



320-2708 Screwdriver Shaft, T8



320-2808 Cannulated Screwdriver, T8



320-5000 1.6mm Plate Tak



320-2707 2.4/2.7mm Countersink



320-5127 2.7mm Over Drill



320-5124 2.4mm Over Drill



320-5020 2.0mm Pilot Drill, Short



320-5018 1.8mm Pilot Drill, Short



320-5218 1.8mm Cannulated Drill



320-5120 2.0mm Pilot Drill, Long



320-5118 1.8mm Calibrated Pilot Drill, Long



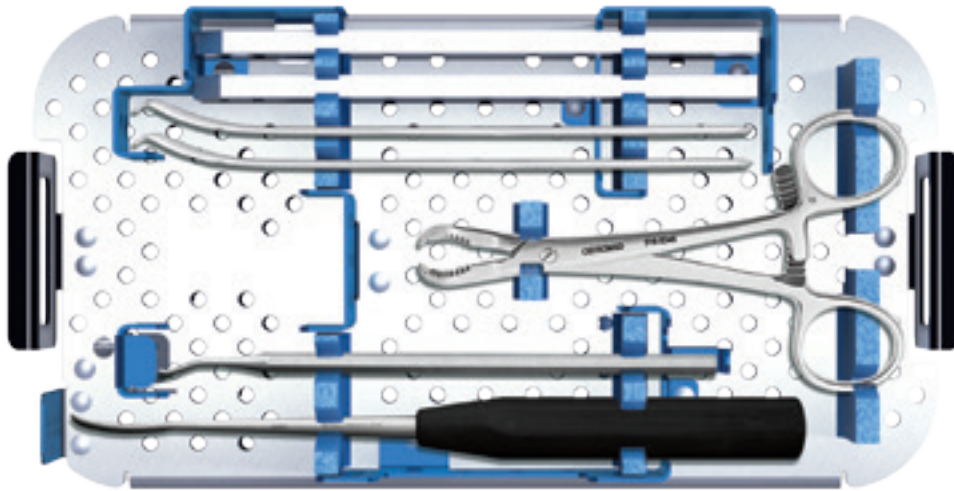
320-5016 1.6mm/.062" K-wire



320-5011 1.1mm/.045" K-wire



320-5009 0.9mm/.035" K-wire



320-6307 General Instrumentation Module, 1/4

Instruments



316-0046
Bone Clamp, Curved Lobster Claw 5 1/2" small



320-0400
Curved Periosteal Elevator, 6mm Straight Edge



320-1020
Hohmann Retractor



320-1024
Dental Pick



320-6008
F-Bender



320-6300 ExtremiLock Wrist Plating System Lid

320-6309 Sterilization Container, 1 level

Surgical Technique Guide

The *OsteoMed ExtremiLOCK Wrist Plating System* is a rigid fixation system consisting of plates and screws in various configurations. Plates are provided in a variety of shapes and sizes and offer surgeons positioning and locking hole designs. The Wrist Plating System includes variable angled locking, non-locking, fully threaded, partially threaded, and cannulated screws, washers, as well as K-wire implants. Surgical instrumentation is provided to facilitate modification and insertion of implants. Variable locking angle range for 2.4mm screws is ± 15 degrees and for 2.7mm screws is ± 10 degrees.

Material

The plates are made from titanium (ASTM F-67); Screws are made from titanium alloy (ASTM F-136); K-wires are made of stainless steel (ASTM F-138).

The instrumentation is made from various grades of stainless steel, titanium alloy, anodized aluminum, and/or medical grade polymers.

Clinical Indications

OsteoMed ExtremiLOCK Wrist Plating System is intended for fracture fixation, fusion, and osteotomies of the wrist and other bones appropriate for the size of the device. It is intended for use in trauma, general surgery, and reconstructive procedures.

OsteoMed ExtremiLOCK Wrist Plating System implants are intended for single use only.

Contraindications

Use of the *OSTEOMED ExtremiLOCK Wrist Plating System* is contraindicated in the following cases:

1. Active or suspected infection or in patients who are immunocompromised;
2. Patients previously sensitized to titanium or stainless steel or with nickel allergies;
3. Patients with certain metabolic diseases;
4. Patients where there is insufficient bone;
5. Patients exhibiting disorders which would cause the patient to ignore the physician's pre-operative and/or post-operative instructions and/or the limitations of internal rigid fixation implants;

ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide

1. Exposure

Make a longitudinal incision slightly radial to the flexor carpi radialis tendon (FCR). The FCR sheath is opened and the tendon is gently retracted ulnarly while being careful to protect the median nerve and its palmar cutaneous branch. The FCR tendon is exposed distally as far as the superficial radial artery.

The forearm fascia beneath the FCR sheath is incised and should be developed distally toward the level of the scaphoid tubercle. The palmar cutaneous branch of the median nerve should be ulnar to the exposure.

During the deeper dissection, the flexor pollicis longus (FPL) is identified by passive flexion/extension of the thumb interphalangeal joint and is retracted ulnarly deep to the median nerve.

While being careful to identify and preserve the volar radiocarpal extrinsic ligaments, the pronator quadratus is identified by its transverse fibers and is released radial to ulnar to expose the fracture site. The pronator quadratus is easily elevated with a periosteal elevator.

The watershed line can be identified by palpating the volar rim of the distal radius at the level of the lunate fossa. A fibrous band of tissue lies just proximal to this location and is usually located between the volar rim and the fracture site. The watershed line lies beneath this fibrous tissue. The pronator quadratus can be elevated at this level to assist with fracture exposure.

In many cases, the brachioradialis serves as a major deforming force on the distal fracture segment, particularly the radial column and styloid. In these instances, the brachioradialis insertion can be released from the distal fragment beneath the first dorsal compartment tendons (EPB and APL) and beneath the radial artery.



ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide (Cont.)

2. Fracture Reduction

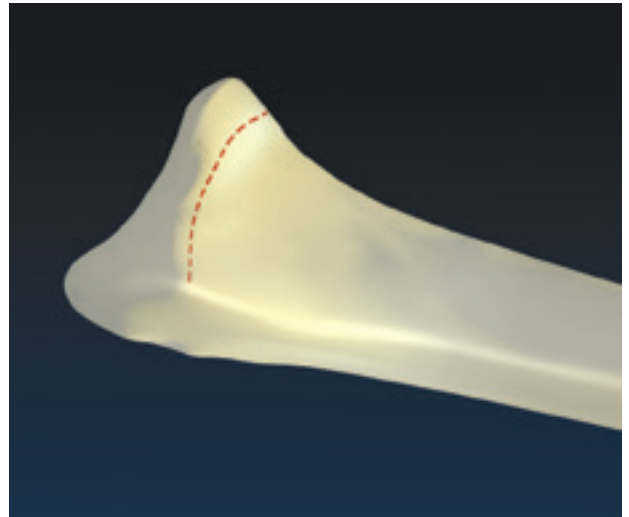
Reduce the fracture using the preferred reduction technique. Temporary fixation and provisional stability can be achieved with K-wires and can be evaluated with the use of the image intensifier.

3. Plate Position

The plate is designed to sit along the distal aspect of the radius to support the volar articular fracture fragments and just proximal to the watershed line to minimize tendon irritation.

The plate can be adjusted proximal or distal through the use of the oblong hole.

NOTE: *The plate can be temporarily fixated using a plate holding TAK through any plate hole.*

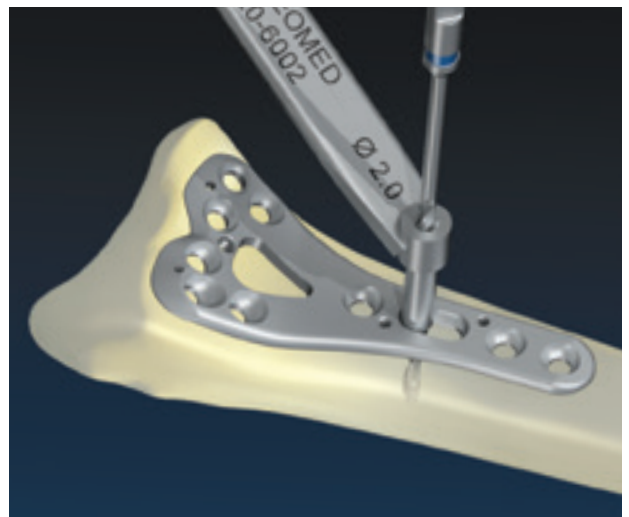


4. Proximal Screw Placement

Insert a 2.4mm or 2.7mm cortex screw in the positioning slot.

Use a 1.8mm drill for the 2.4mm screws or a 2.0mm drill for the 2.7mm screws.

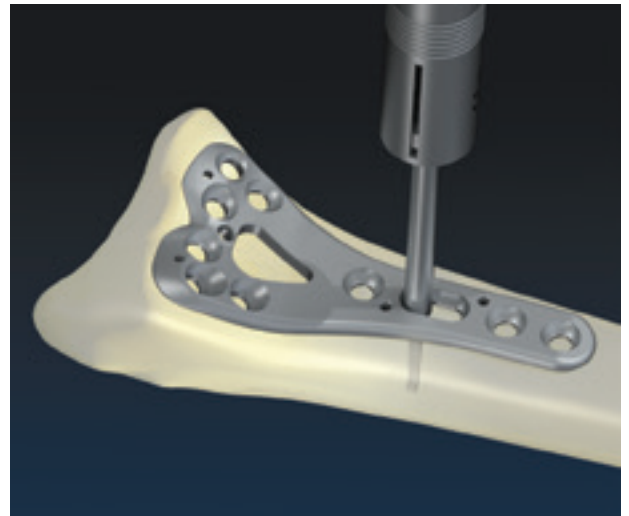
Select the drill size and corresponding drill guide for the selected screw size.



ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide (Cont.)

4. Proximal Screw Placement (Cont.)

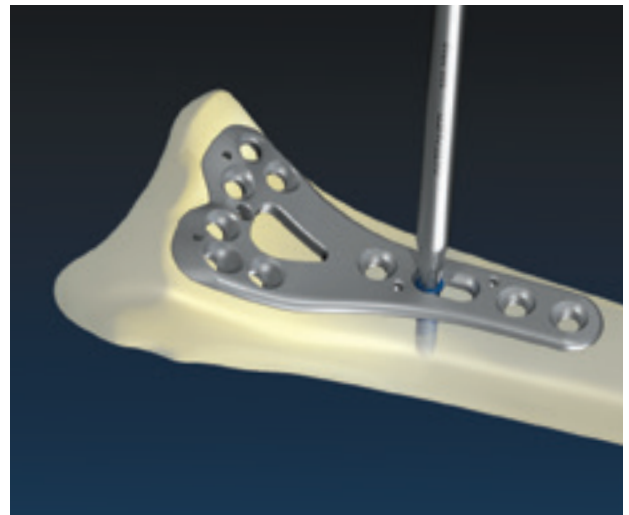
Measure screw length using the depth gauge.



Insert screw using the self-retaining T8 screw driver stem adjusting the plate position as necessary until final tightening.

NOTE: All screw holes are universally designed to accept both 2.4mm & 2.7mm screws.

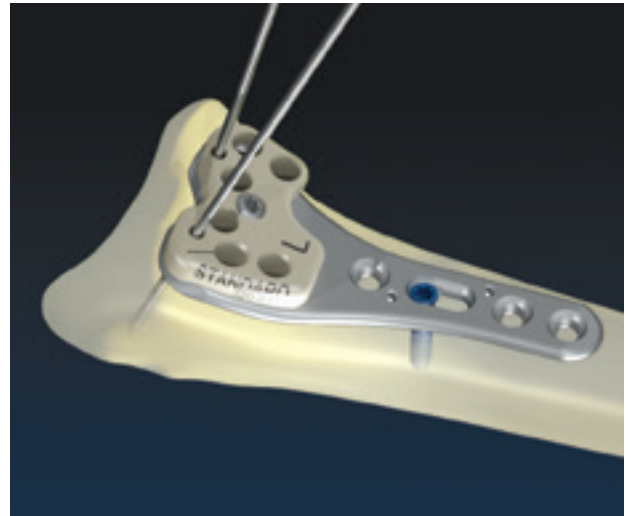
NOTE: Positioning slot only accepts non-locking cortex screws.



ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide (Cont.)

5. Distal K-wire Positioning

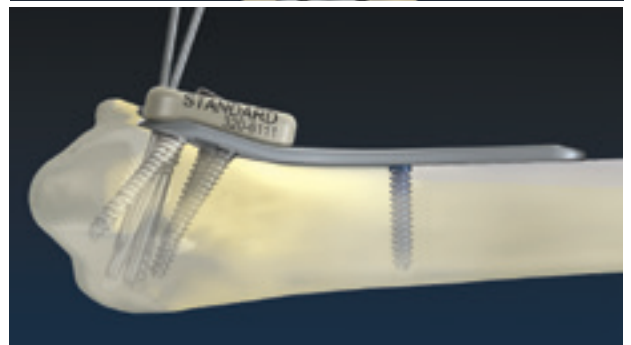
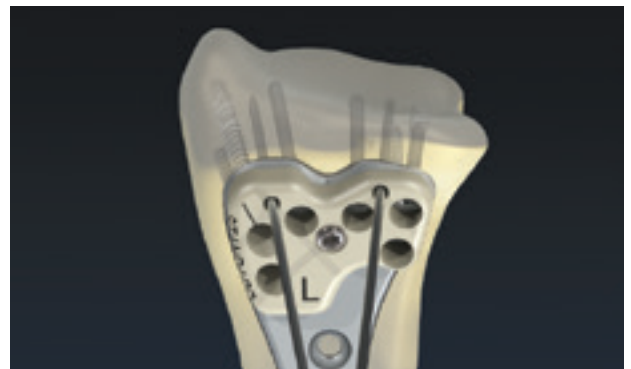
K-wires can be used to verify targeted drill guide screw trajectory by inserting 1.1mm K-wires in the distal holes of the plates.



Intermediate column K-wire relates to the distal row screw supporting the DRUJ.

Radial column K-wire relates to the distal row screw supporting the scaphoid fossa.

AP View: K-wire is parallel to the screw
Lateral View: K-wire will converge with the screw at 20mm in length.



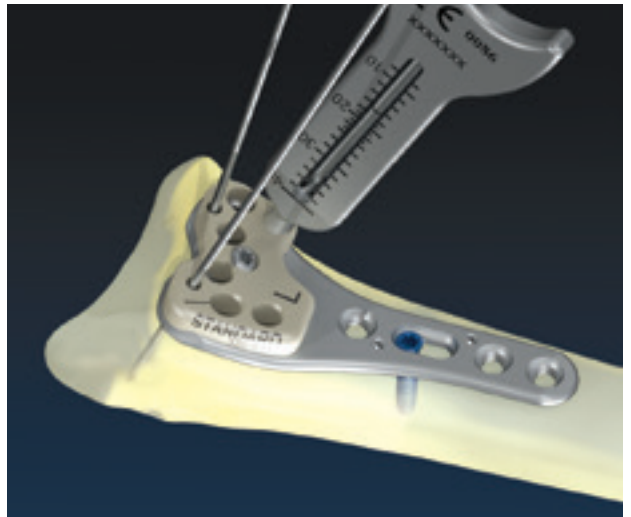
ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide (Cont.)

6. Screw Placement

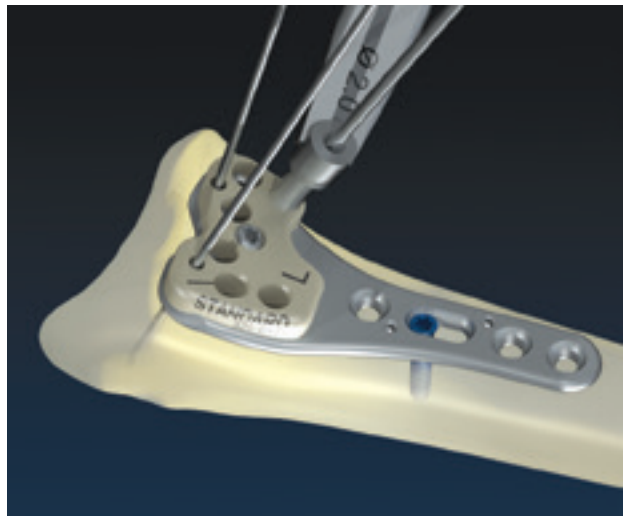
Fixed Angle Screw Placement

Attach the corresponding radiolucent target drill guide to the plate using the set screw and driver stem.

Insert the 2.4mm Screw Quick Drill Guide and drill using the calibrated 1.8mm drill. The depth can be read using the laser line on the drill or the depth probe.



If 2.7mm screws are desired, fully insert the 2.7mm screw drill guide through the radiolucent target drill guide and drill using a 2.0mm drill.

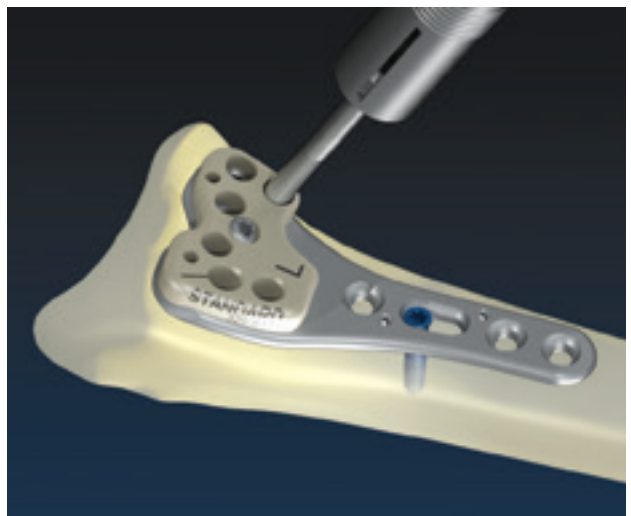


Measure screw length using the depth gauge.

2.4mm and 2.7mm screws can be inserted through the radiolucent target drill guide.

NOTE: All screw holes are universally designed to accept both 2.4mm & 2.7mm screws.

NOTE: The target drill guide can be attached prior to plate placement.



ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide (Cont.)

6. Screw Placement (Cont.)

Variable Angle Screw Placement

2.4mm Screws can be inserted at $\pm 15^\circ$ and
2.7mm Screws can be inserted at $\pm 10^\circ$

Insert the 2.4/2.7mm Screw Angle Drill Guide and drill using either the 1.8mm or 2.0mm drill. Use the depth gauge to confirm screw length. Insert selected screw using the self-retaining T8 screw driver stem adjusting until final tightening.

NOTE: All screw holes are universally designed to accept both 2.4mm & 2.7mm screws.

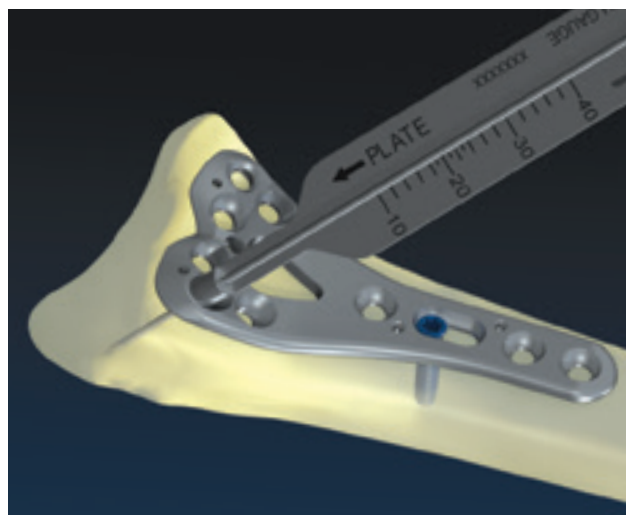
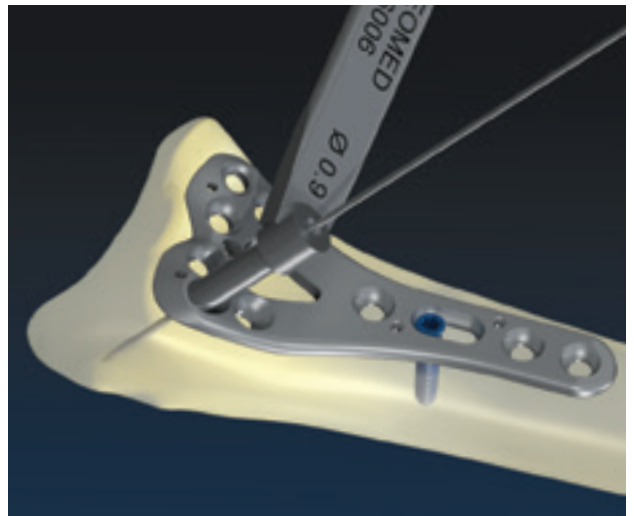
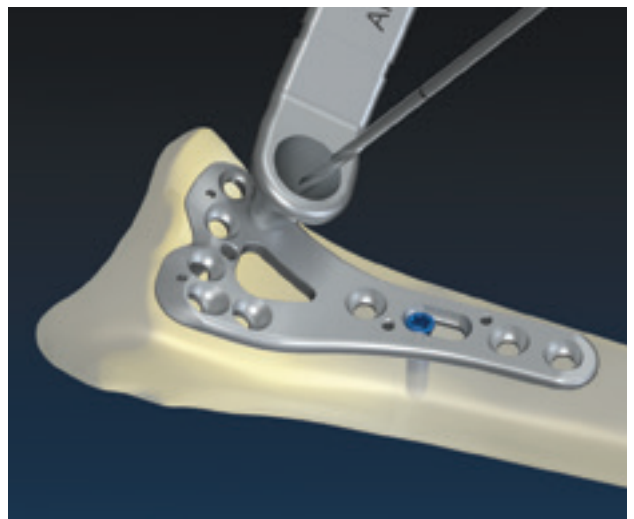
NOTE: Do not overtighten the screw.

Cannulated Variable Angle Screw Placement

2.4mm Cannulated Locking Screws can be inserted at $\pm 15^\circ$.

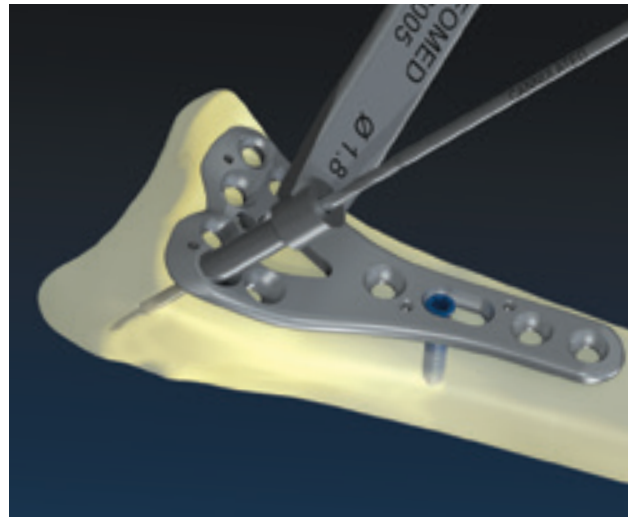
Insert the 0.9/1.6mm K-wire drill guide into the desired hole. The drill guide will center the 0.9mm K-wire during insertion. Confirm k-wire placement under fluoroscopy.

Slide the cannulated depth gauge over the K-wire using the "on plate" side until the tip of the depth gauge is flush with the plate.



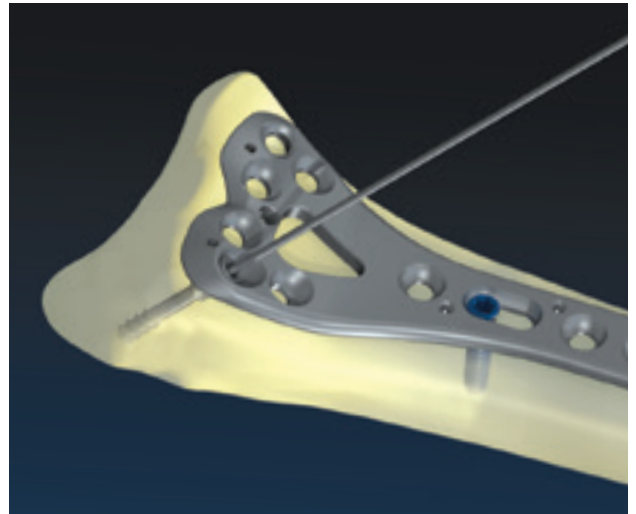
ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide (Cont.)

Drill using the 1.8mm Cannulated Drill

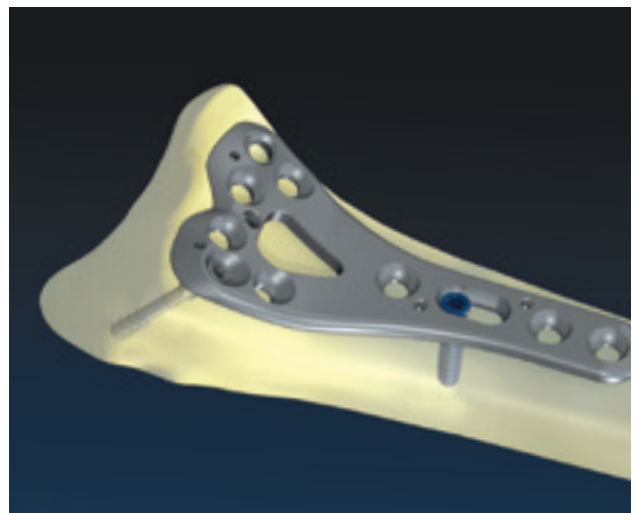


Insert the screw over K-wire using the T8 cannulated driver stem.

NOTE: *Cannulated Driver Stem is Not for Final Tightening of Locking Screw*



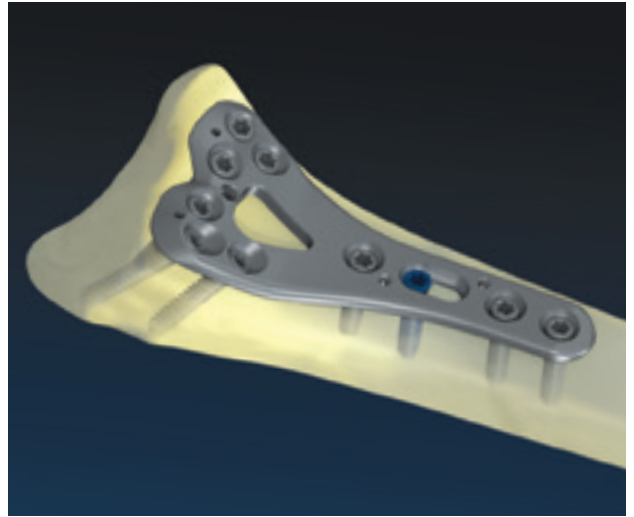
Once screw engages the plate, remove the K-wire and finish final tightening of the cannulated screw using the solid core T8 driver stem.



ExtremiLock Volar Distal Radius Plate & Column Specific Plates Surgical Guide (Cont.)

7. Final Shaft Fixation

8. Confirm Plate Placement and Screw Trajectories under Fluoroscopy.



ExtremiLock Radial Styloid Plate Surgical Guide

1. Exposure

Direct Lateral Approach

The direct lateral approach may be most appropriate for management of isolated extra-articular or intra-articular fractures of the radial styloid.

Approach the radial styloid through a longitudinal direct lateral skin incision overlying the first dorsal compartment and radial styloid.

After making the skin incision, be very careful to identify, gently mobilize and protect the radial sensory nerve.

Identify the first dorsal compartment and release it in the midline. Release both the APL and the EPB to allow for sub-periosteal exposure of the intact radius and the fractured distal radial styloid segment. The dorsal compartment may be mobilized in either a dorsal or volar direction.

Identify and release the brachioradialis from the radial styloid in order to expose the fracture site and remove it as a deforming force.

The fracture may now be reduced and provisionally stabilized and held with either k-wires, reduction clamp, or through the use of the radial styloid plate as a buttress.

2. Screw Placement

Follow screw insertion technique from Volar Distal Radius Plate & Column Specific Plate Surgical Guide.

General Instructions for Implantation of Screws Outside of Plate Using:

Cannulated Variable Angled Locking Screws
Non-Locking Screws

- 1. Expose and reduce fracture or osteotomy site.**
- 2. Select appropriate screw for fixation of fracture or osteotomy.**

Cannulated Variable Angled Locking Screw:

Insert appropriate K-wire through the fracture site. Do not bend K-wire when inserting into bone.

Slide the Cannulated Depth Gauge over the K-wire until tip bottoms out on bone; the end of the K-wire will indicate the screw length required.

Drill over k-wire using the appropriately size cannulated drill.

Select the length of the screw accordingly.

Insert screw over the K-wire onto the bone

Remove and discard the K-wire.

Close the treatment site using standard closure techniques.

For implantation of non-locking screws outside of plate:

Drill pilot hole using appropriate drill guide and drill.

Countersink if necessary.

Insert the depth gauge until it passes through the distal cortex. Retract the stem until the lip of the device catches against the bone to determine measurement.

Select the screw diameter and length accordingly and insert into the hole.

Drive the screw to compress the fracture or osteotomy.

Close the treatment site using standard closure technique.

General Instructions for Implantation of K-wires

Implanting K-wires

Expose site or prepare to insert percutaneously. Reduce fracture or osteotomy site.

Insert a K-wire to the appropriate depth. Do not bend K-wire when placing in bone.

Drive the K-wire through the fractured segments until the desired fixation is achieved.

Bend and/or cut K-wire as desired using appropriate instrumentation.

If necessary, close the treatment site using standard closure techniques.

Remove Screws from Module

Insert screw driver tip perpendicular to the screw head.

Apply minor downward force to engage the driver stem and screw together.

For locking screws, rotate the driver stem counter clockwise 180°

Remove the screw by pulling the handle straight up from the screw caddy.

The screw length can be measured with the screw on the driver stem.

Notes

OsteoMed Products



Hand Plating System



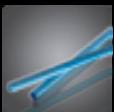
Hand Fusion System



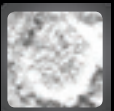
ExtremiFix Headless Cannulated Screws



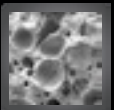
ExtremiFix Cannulated Screws



Inion



OsteoVationEX



OsteoVation QWIK



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