

Locking XVA Volar Distal Radius Plate 2.7mm

Surgical Technique



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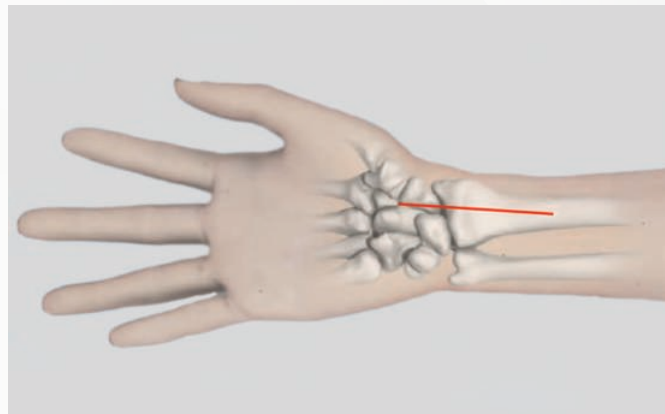
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Approach

Make a longitudinal incision slightly radial to the flexor carpi radialis tendon (FCR). Dissect between the FCR and the radial artery, exposing the pronator quadratus. Detach the pronator quadratus from the lateral border of the radius and elevate it toward the ulna

Precaution:

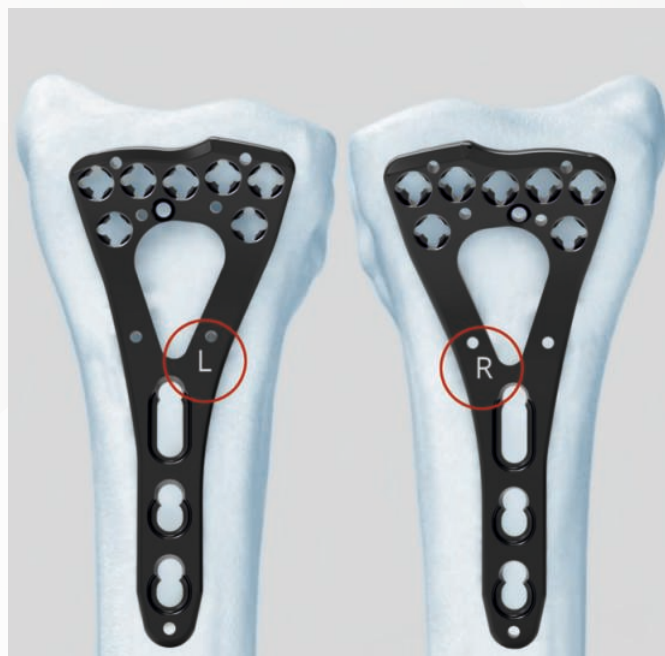
Leave the volar wrist capsule intact to avoid devascularization of the fracture fragments and destabilization of the volar wrist ligaments



Implant

1. Select Implant

Select the plates according to the fracture pattern and anatomy of the radius.



Implantation

2. Reduce fracture and position plat

Instruments for 2.4mm and 2.7mm cortex screws

601.032	Drill Bits 1.8mm x 110mm for Quick Coupling T Handle
601.033	Drill Bits 2.0mm x 110mm for Quick Coupling T Handle
605.024	Drill And Tap Sleeve 2.4/1.8mm
605.027	Drill And Tap Sleeve 2.7/2.0mm
612.011	Quick Coupling Stright Handle
614T.08	T08 Star Driver Shaft Short for 2.4/2.7mm Screw
609.006	Measuring Device 40mm Length for 2.4/2.7mm Screw

Implantation

Reduce the fracture. The reduction method will be fracture-specific. Apply the plate to fit the volar surface. If necessary, use 1.25mm Kirschner wires inserted through the desired Kirschner wire hole to temporarily fix the plate distally. The order of screw insertion and the use of Kirschner wires may vary depending on the fracture pattern and reduction technique. Perform several radiographic views of the distal radius to ensure alignment and reduction.



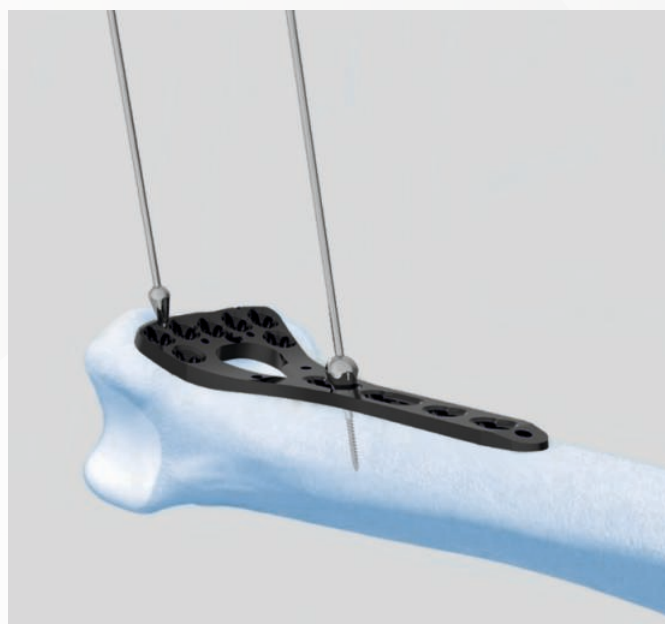
Additional options for preliminary Kirschner wire fixation

Option: Plate reduction wires

The 1.25mm plate reduction wires can be used for preliminary plate fixation. They must be removed when not needed for temporary fixation anymore

Precaution:

The plate reduction wires and Kirschner wires are single use items, do not re-use.



Beginning with the elongated hole in the shaft of the plate, drill with the 1.8mm drill bit using the Universal Drill Guide 2.4.

Insert a 2.4mm cortex screw in the elongated hole in the plate shaft. Adjust the plate position if necessary and tighten the screw.

Note:

Alternatively, insert 2.7mm cortex screws into the shaft. Use the Universal Drill Guide 2.7 in the unthreaded part of the hole. Drill with the drill bit 2.0mm.



Implantation

3. Insert proximal screws

Instruments for 2.4mm locking screws

601.032	Drill Bits 1.8mm x 110mm for Quick Coupling T Handle
733.024	LCP Drill Sleeve 2.4, for Drill Bits 1.8mm
609.006	Measuring Device 40mm Length for 2.4/2.7mm Screw
612.011	Quick Coupling Stright Handle
614T.08	T08 Star Driver Shaft Short for 2.4/2.7mm Screw
735.06	Torque Limit Adapter 0.8 Nm

Instruments for 2.4mm or 2.7mm cortex screws

601.032	Drill Bits 1.8mm x 110mm for Quick Coupling T Handle
601.033	Drill Bits 2.0mm x 110mm for Quick Coupling T Handle
605.024	Drill And Tap Sleeve 2.4/1.8mm
605.027	Drill And Tap Sleeve 2.7/2.0mm
609.006	Measuring Device 40mm Length for 2.4/2.7mm Screw
614T.08	T08 Star Driver Shaft Short for 2.4/2.7mm Screw

Optional

614T.08A	T08 Star Driver Shaft Long for 2.4/2.7mm Screw
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Determine where 2.4mm locking screws and 2.4mm or 2.7mm cortex screws will be used in the shaft of the plate. Insert the screws, beginning with the most proximal screw.

For locking screws, carefully insert the LCP drill sleeve 2.4 with scale, perpendicular to the plate and in line with the hole's axis until it is seated in the desired locking hole. Drill with the drill bit 1.8mm.

Read the screw length directly from the laser mark on the drill bit. Alternatively, use the corresponding depth gauge to determine the screw length.

Using the 0.8 Nm torque limiter, insert either a locking or variable angle locking screw.

The torque limiter prevents overtightening and ensures that the VA locking screws are securely locked into the plate.

Cortex screws For 2.4mm cortex screws, use the Universal Drill Guide 2.4 in the unthreaded part of the hole. Drill with the drill bit 1.8mm.

For 2.7mm cortex screws, use the Universal Drill Guide 2.7 in the unthreaded part of the hole. Drill with the drill bit 2.0mm.



Implantation

4. Drill screw hole for VA locking screws

Instruments

- 601.032 Drill Bits 1.8mm x 110mm for Quick Coupling T Handle
- 609.006 Measuring Device 40mm Length for 2.4/2.7mm Screw

Determine whether screws will be inserted at a variable angle or at the predefined nominal angle.

Drill screw hole for VA locking screw using variable angle technique



Instruments

- 733.024 LCP Drill Sleeve 2.4mm, For Drill Bits 1.8mm

Drill using VA-LCP drill sleeve with funnel

Insert and lock the VA-LCP drill sleeve tip into the cloverleaf design of the VA locking hole.

Use the 1.8mm drill bit to drill to the desired depth at the desired angle.

The funnel of the drill sleeve allows the drill bit up to a 15° angulation around the central axis of the locking hole.



Implantation

Drill using VA-LCP drill sleeve for freehand use

Alternatively, use the free hand VA-LCP Drill Sleeve. Fully extend it into the VA locking hole. Drill variable angle holes at the desired angle.

Note:

To ensure that the screw is locked correctly, do not angle it in excess of $\pm 15^\circ$ from the nominal trajectory of the hole.

To achieve the desired angle, verify the drill bit angle under image intensifier control. If necessary, drill at a different angle and verify again under image intensifier control. Use the corresponding depth gauge to measure the correct screw length.

Drill using predefined nominal angle technique

Instruments

733.024 LCP Drill Sleeve 2.4mm, For Drill Bits 1.8mm

Optional

605.024 Drill And Tap Sleeve 2.4/1.8mm

Drill using VA-LCP Drill Sleeve

The fixed-angle end of the drill sleeve only allows the drill bit to follow the nominal trajectory of the VA locking hole.

Read the screw length directly from the laser mark on the drill bit. Alternatively, use the corresponding depth gauge to determine the screw length.



5. Insert Variable Angle locking screw

Instruments

612.011 Quick Coupling Handle for 2.4/2.7mm Screw

614T.08 T08 Star Driver Shaft Short for 2.4/2.7mm Screw

Optional

614T.08A T08 Star Driver Shaft Long for 2.4/2.7mm Screw

Insert the VA locking screws manually with the self retaining T8 Stardrive screwdriver shaft and quick coupling handle and tighten just enough for the screw head to be fully seated in the VA locking hole (1).

Note:

Do not over-tighten the screw. This allows the screws to be easily removed should they not be in the desired position.

Note:

When a guiding block is used, the locking screw (VA locking or standard locking) may be inserted with a T8 screwdriver directly through the guiding block (2).



6. Ensure proper joint reconstruction

Ensure proper joint reconstruction, screw placement screw length using multiple radiographic views. Verify that the distal screws are not in the joint by using additional views such as a 10° dorsally tilted, 20° inclined lateral, and 45° pronated oblique view

7. Final fixation of locking screws

Instruments

735.06	Torque Limit Adapter 0.8 Nm
612.011	Quick Coupling Stright Handle
614T.08	T08 Star Driver Shaft Short for 2.4/2.7mm Screw

Optional

614T.08A	T08 Star Driver Shaft Long for 2.4/2.7mm Screw
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Use the 0.8 Nm torque limiter to perform the final locking step for the VA locking screws

The torque limiter prevents over-tightening and ensures that the VA locking screws are securely locked into the plate.

Note:

For dense bone, visually inspect if the screw is countersunk after tightening with the torque limiter. If required, carefully tighten without the torque limiter until the screw head is flush with the plate surface.



Postoperative Treatment / Implant Removal

Postoperative treatment

Postoperative treatment with VA locking compression plates does not differ from conventional internal fixation procedures.

Implant removal

612.011 Quick Coupling Stright Handle

614T.08 T08 Star Driver Shaft Short for 2.4/2.7mm Screw

Optional

614T.08A T08 Star Driver Shaft Long for 2.4/2.7mm Screw

To remove locking screws, first unlock all screws from the plate; then remove the screws completely from the bone.

The last screw removed should be a non-locking screw on the shaft. This prevents the plate from spinning when locking screws are removed.

Recommendation

Fine contouring of the plate (optional)

Instruments

616.011 Bending Pliers for 2.4/2.7mm Plate

VA-LCP Two-Column Volar Distal Radius Plates 2.4 are designed to optimally fit the volar surface of the majority of radial

If necessary, bend the plate to suit anatomical conditions as indicated. Avoid repetitive bending.

Recommendation: Use non-serrated bending pliers for preservation of the plate's smooth finish.

Precautions: The design of the plate holes allow a certain degree of deformation. However, if threaded holes are significantly deformed, locking is not sufficiently efficient.

Reverse bending or use of the incorrect instrumentation for bending may weaken the plate and lead to premature plate failure (e.g. breakage). Do not bend the plate beyond what is required to match the anatomy.

Note:

If using guiding blocks, avoid bending the head portion of the plate. Otherwise, the guide block might not function as intended.



Cover the shaft's Kirschner wire hole.
Stay below head holes



Cover proximal head holes.
Adjust slightly over the middle hole

Plates

**Locking XVA Volar Distal Radius Plate
2.7mm Head 6hole narrow (Left)**

SS Code No.	Titanium Code No.	Shaft Holes	Length (mm)
168.02L	T168.02L	2	44.8
168.03L	T168.03L	3	53.3
168.04L	T168.04L	4	65.3
168.05L	T168.05L	5	73.8
168.06L	T168.06L	6	82.3
168.07L	T168.07L	7	90.8

**Locking XVA Volar Distal Radius Plate
2.7mm Head 6hole narrow (Right)**

SS Code No.	Titanium Code No.	Shaft Holes	Length (mm)
168.02R	T168.02R	2	44.8
168.03R	T168.03R	3	53.3
168.04R	T168.04R	4	65.3
168.05R	T168.05R	5	73.8
168.06R	T168.06R	6	82.3
168.07R	T168.07R	7	90.8



**Locking XVA Volar Distal Radius Plate
2.7mm Head 6hole (Left)**

SS Code No.	Titanium Code No.	Shaft Holes	Length (mm)
168A.02L	T168A.02L	2	50.0
168A.03L	T168A.03L	3	58.5
168A.04L	T168A.04L	4	70.5
168A.05L	T168A.05L	5	79.0
168A.06L	T168A.06L	6	87.5
168A.07L	T168A.07L	7	96.0

**Locking XVA Volar Distal Radius Plate
2.7mm Head 6hole (Right)**

SS Code No.	Titanium Code No.	Shaft Holes	Length (mm)
168A.02R	T168A.02R	2	50.0
168A.03R	T168A.03R	3	58.5
168A.04R	T168A.04R	4	70.5
168A.05R	T168A.05R	5	79.0
168A.06R	T168A.06R	6	87.5
168A.07R	T168A.07R	7	96.0



**Locking XVA Volar Distal Radius Plate
2.7mm Head 7hole (Left)**

SS Code No.	Titanium Code No.	Shaft Holes	Length (mm)
168B.02L	T168B.02L	2	50.0
168B.03L	T168B.03L	3	58.5
168B.04L	T168B.04L	4	70.5
168B.05L	T168B.05L	5	79.0
168B.06L	T168B.06L	6	87.5
168B.07L	T168B.07L	7	96.0

**Locking XVA Volar Distal Radius Plate
2.7mm Head 7hole (Right)**

SS Code No.	Titanium Code No.	Shaft Holes	Length (mm)
168B.02R	T168B.02R	2	50.0
168B.03R	T168B.03R	3	58.5
168B.04R	T168B.04R	4	70.5
168B.05R	T168B.05R	5	79.0
168B.06R	T168B.06R	6	87.5
168B.07R	T168B.07R	7	96.0



All plates are available Stainless Steel and Titanium

Screws

Variable Angle Locking Screws 2.4mm

198V 2.4mm Variable Locking Compression Screws
Star Head 12mm to 30mm (2mm Increment)

For use in VA locking holes

Precaution:

For final locking, the 0.8 Nm torque limiter is required

Cortex Screws 2.4mm

459 2.4mm Cortex Screws (Self Tapping) Star Head
12mm to 30mm (2mm Increment)

For use in VA locking holes or oblong combi-holes.



Optional Screws

Cortex Screws 2.7mm

458 2.7mm Cortex Screws (Self Tapping) Star Head
12mm to 30mm (2mm Increment)

For use in oblong combi-holes.



Locking Screws 2.4mm

198 2.4mm Variable Locking Compression Screws
Star Head 12mm to 30mm (2mm Increment)

For use in VA locking holes but only in predefined angle using nominal angle technique.



Precaution:

For final locking, the 0.8 Nm torque limiter is required

Instruments

733.020 Quick Coupling Handle for 3.5/4.0mm Screw 2.4mm, For Drill Bits 1.8mm	601.035 Drill Bits 1.8mm x 110mm for Quick Coupling T Handle
	
601.033 Drill Bits 2.0mm x 110mm for Quick Coupling T Handle	612.011 Quick Coupling Stright Handle
	
614T.08 T08 Star Driver Shaft Short for 2.4/2.7mm Screw	614T.08A T08 Star Driver Shaft Long for 2.4/2.7mm Screw
	
609.006 Measuring Device 40mm Length for 2.4/2.7mm Screw	605.024 Drill And Tap Sleeve 2.4/1.8mm
	
605.027 Drill And Tap Sleeve 2.7/2.0mm	735.06 Torque Limit Adapter 0.8 Nm
	

733.024 LCP Drill Sleeve 2.4mm, For Drill Bits 1.8mm	733.027 LCP Drill Sleeve 2.7mm, For Drill Bits 2.3mm
	
601.033 Drill Bits 2.3mm x 130mm for Quick Coupling T Handle	603.001 Quick Coupling T Handle
	
609.005 Depth Gauge 50mm Length for 2.4/2.7mm Screw	613C.027 Holding Sleeve for Locking screws 2.4/2.7mm
	
613D.027 Holding Sleeve for Non-Locking screws 2.4/2.7mm	614.020 Shaft for Hexagonal Screw Driver 2.0mm Tip for 2.4/2.7mm screws
	
614.025 Shaft for Hexagonal Screw Driver 2.5mm Tip for 3.5/4.0mm screws	711.001 Periosteal Elevator Curved Blade 6mm wide
	

**689.140 Reduction Forceps With Points
Length 140mm**



**689.205 Reduction Forceps With Points
Length 205mm**



706.008 Retractorl 8mm wide



Set

AGC.42 Distal Radius 2.7mm Implants & Instruments Set

Instruments

733.020	LCP Drill Sleeve For variable angle plate 2.4mm, For Drill Bits 1.8mm
733.024	LCP Drill Sleeve 2.4mm, For Drill Bits 1.8mm
733.027	LCP Drill Sleeve 2.7mm, For Drill Bits 2.3mm
601.032	Drill Bits 1.8mm x 110mm for Quick Coupling T Handle
601.033	Drill Bits 2.0mm x 110mm for Quick Coupling T Handle
601.021	Drill Bits 2.3mm x 150mm for Quick Coupling T Handle
614.T08A6	Shaft for Star Screw Driver Long T08 Tip for 2.4/2.7mm screws
14.T08	Shaft for Star Screw Driver T08 Tip for 2.4/2.7mm screws
614.025	Shaft for Hexagonal Screw Driver 2.5mm Tip for 3.5/4.0mm screws
614.020	Shaft for Hexagonal Screw Driver 2.0mm Tip for 2.4/2.7mm screws
735.06	Torque Limit Adapter 0.8 Nm
612.011	Quick Coupling Stright Handle
609.005	Depth Guage 50mm Length for 2.4/2.7mm Screw
603.001	Quick Coupling T Handle
706.008	Retractorl 8mm wide
689.205	Reduction Forceps With Points Length 205mm
689.140	Reduction Forceps With Points Length 140mm
711.001	Periosteal Elevator Curved Blade 6mm wide
605A.0246	Universal Drill And Tap Sleeve 2.4/1.8mm
05A.02760	Universal Drill And Tap Sleeve 2.7/2.0mm
9.006	Measuring Device 40mm Length for 2.4/2.7mm Screw
613C.0276	Holding Sleeve for Locking screws 2.4/2.7mm
13D.027	Holding Sleeve for Non Locking screws 2.7mm

Implants

166	Locking Volar Distal Radius Plate 2.7mm (Left & Right) Holes: 3, 4, 5, 6
168A	Locking XVA Volar Distal Radius Plate 2.7mm Head 6hole (Left & Right) Holes: 2, 3, 4, 5
168B	Locking XVA Volar Distal Radius Plate 2.7mm Head 7hole (Left & Right) Holes: 2, 3, 4, 5
168	Locking XVA Volar Distal Radius Plate 2.7mm Head 6hole narrow (Left & Right) Holes: 2, 3, 4, 5
172	Locking Proximal Radius Neck Plate 2.7mm Holes: 2, 3, 4
173	Locking Proximal Radius Rim Plate 2.7mm (Left & Right) Holes: 2, 3, 4
187	Locking Distal Radius Plate 2.7mm (Left & Right) Holes: 3, 5
188	Locking Distal Radius Buttress Plate 2.7mm (Head 5hole) (Left & Right) Holes: 3, 5
189	Locking Distal Radius Plate 2.7mm Extra Articular (Head 5hole) (Left & Right) Holes: 3, 5
190	Locking Distal Radius Plate 2.7mm Extra Articular (Head 4hole) (Left & Right) Holes: 3, 5
191	Locking Distal Radius Plate 2.7mm Straight Holes: 5, 6
192	Locking Distal Radius L Plate 2.7mm (Head 2hole) (Left & Right) Holes: 3, 4
193	Locking Distal Radius L Plate 2.7mm (Head 3hole) (Left & Right) Holes: 3, 4
194	Locking Distal Radius L Plate Oblique Angled 2.7mm (Head 3hole) (Left & Right) Holes: 3, 4
195	Locking Distal Radius T Plate 2.7mm (Head 3hole) Holes: 3, 4
075	2.7mm Cortex Screws (Self Tapping) Length: 10mm to 40mm
165	2.7mm Locking Compression Screws Length: 10mm to 40mm
459	2.4mm Cortex Screws (Self Tapping) Star Head Length: 10mm to 40mm
198	2.4mm Locking Compression Screws Star Head Length: 10mm to 40mm
198V	2.4mm Variable Locking Compression Screws Star Head Length: 12mm to 30mm





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