

Surgical Technique

2.4mm Proximal Radius System

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about us

Auxein Medical is an integrated, research based, orthopaedic Implants & instruments manufacturing company, producing a wide range of quality, affordable generic implants, trusted by healthcare professionals and patients across geographies. It is the Company's constant endeavor to provide a wide basket of generic and our innovator products that exceed the highest expectations of customers in term of quality and safety. The company has world-class manufacturing unit established in india and serves customers in over 75 countries worldwide.

Our Achievements



INTRODUCTION

The AUXEIN MEDICAL'S 2.4 mm Radius System (Wise-Lock) consists of variety of Bone plates & fixed angle Bone Screws. This system is a single use implantable device for long term duration (intended for continuous use for more than 30 days) contacting radius bone and its surrounding tissues.





INDICATIONS:

Extra-articular and intra-articular fractures of the proximal radius and multifragmented radial neck fractures.



CONTRAINDICATIONS:

- Infection, local to the operative site.
- Signs of local inflammation.
- Mental sensitivity or intolerance.
- Alcohol or drug addict.
- Symptomatic Arthritis
- Morbid Obesity
- Mental illness or schizophrenia, which may cause patients to ignore the limitations and precautions of the implanted material, leading to implants fracture and complication.



Patient positioning: Place the patient supine with the shoulder adducted and the elbow flexed across the torso, stabilized by an assistant, a well-padded arm rest, or a cushion. Pillows or cushions to support the body's rotation to the opposite side will help keep the injured arm over the chest.

Lateral Approach: A skin incision is made at approximately 2cm proximal to the lateral humeral epicondyle in order to access the fracture site to operate on.





Plate placement:

Both Radial head neck and Radial head rim plates are fixed within the Hotchkiss safe zone, which is the area on the radial head that is free of impingement between ulna and radius as shown in the adjacent figure. After temporary fixation, the plate is placed on the Hotchkiss safe zone in proper alignment to the proximal radius anatomy and a cortical screw is inserted through the dynamic compression region of the plate. Plate holder could be used to bend the plate if the plate doesn't sit properly on the bone.





Shaft Screw Insertion: In shaft, holes for insertion of both cortical screws as well as Wise-Lock screws are provided. Following stated procedure explains the technique of cortical screw insertion.

Drill bit Insertion:

The flange on T handle is pushed away from the handle and the appropriate drill bit is inserted according to the requirement. The flange is finally released to lock the drill bit in T handle.

Precaution: Choose the appropriate diameter of drill bit. Care should be taken while drilling to avoid excessive drilling

Predrill Screw holes: According to required screw, use appropriate Double drill guide 1.8/2.4 or 2.0/2.7 mm to predrill the hole for insertion of cortical screw. For 2.4mm cortical screw, 1.8mm drill bit is used for threaded hole while a 2.4mm drill bit is used for the gliding hole. Similarly for 2.7mm



cortical screw, 2.0mm drill bit is used for threaded hole while a 2.7mm drill bit is used for the gliding hole.

Precaution: Selection of correct drill bit should be carefully chosen.

The hole can be drilled at neutral or compression position according to requirement of the reduction as described below.

1. Predrilling in neutral position: The upper part of the inner sleeve of drill guide is depressed and is positioned in plate hole remote from the fracture as indicated by 1 is adjoining figure.

2. **Predrilling in compression position:** The upper part of the inner sleeve of drill guide is not depressed and is positioned in plate hole remote from the fracture as indicated by 2 in adjoining figure.







If required, the tap for both 2.4 and 2.7mm screws are available. These quick coupling taps can be inserted into the T handle and used to create screw thread pattern in the bone.

Determining the screw length: For 2.4mm Screws, Depth Gauge (5001-2.4) is used in the predrill hole to determine the screw length. Similarly for 2.7mm Screw, use Depth Gauge (5001-2.7) in the predrill hole to determine the screw length.

Precaution: Care should be taken to choose appropriate length using depth gauge. Selection of excessive or too short screw length can create complications in bone healing.

Screw Insertion: Depending on the screw head type, the Hexagonal head Screwdriver or the Star Head Screwdriver is used to pick and insert the cortical screw of appropriate determined length into the predrill hole.

Precaution: Care should be taken while screw insertion. Avoid excessive tightening as it can lead to screw breakage and recess deformation. And also improper tightening can lead to loosening of implant and irritation or soft tissue damage.







Proximal Screw Insertion: Threaded holes are provided at the proximal end of both the plates, so 2.4mm Wise-Lock screws are inserted in these holes.

Predrill Screw holes: Threaded Drill Guide 2.4 is used for 2.4mm Wise-Lock Screws. The Threaded Drill guide is aligned with the trajectory of the threaded plate hole and the guide is approximately given a quarter counter-clockwise turn until the thread engages. Finally the guide is advanced clockwise until firmly seated. Drill bit of 1.8mm is inserted into the threaded drill guide to drill the hole for screw insertion.

Precaution: Selection of correct drill bit should be carefully chosen.



Determining the screw length: As mentioned earlier, the appropriate Depth Gauge is used according to the diameter of the screw to measure the required screw length.

Precaution: Care should be taken to choose appropriate length using depth gauge. Selection of excessive or too short screw length can create complications in bone healing.

Screw Insertion: Depending on the screw head type, the Hexagonal head Screwdriver or the Star Head Screwdriver is used to pick and insert the Wise-Lock screw of appropriate determined length into the predrill hole.

Precaution: Care should be taken while screw insertion. Avoid excessive tightening or loosening. Choose appropriate size torque limiter . For example 0.8Nm torque limiter for insertion of 2.4mm Wise-Lock screw, self-tapping (Star Head).





2.4mm Wise-Lock Proximal Radius Plate for Radial Head Rim





Round Locking Hole



	Left Direction	Right Direction
Holes	Titanium	Titanium
2	TI-544.002L	TI-544.002R
3	TI-544.003L	TI-544.003R
4	TI-544.004L	TI-544.004R

Compression and Locking Hole



2.4mm Wise-Lock Proximal Radius Plate for Radial Head Neck



Holes	Titanium
2	TI-545.002
3	TI-545.003
4	TI-545.004



2.4mm Cortical Screw, Self-Tapping, (Hex Head)

Length (mm)	Titanium	
6	TI-M18.06	
8	TI-M18.08	
10	TI-M18.10	
12	TI-M18.12	
14	TI-M18.14	
16	TI-M18.16	
18	TI-M18.18	3
20	TI-M18.20	
22	TI-M18.22	
24	TI-M18.24	
26	TI-M18.26	
28	TI-M18.28	
30	TI-M18.30	

2.4mm Wise-Lock Screw, Self-Tapping, (Hex Head)

Length (mm)	Titanium
6	TI-M17.06
8	TI-M17.08
10	TI-M17.10
12	TI-M17.12
14	TI-M17.14
16	TI-M17.16
18	TI-M17.18
20	TI-M17.20
22	TI-M17.22
24	TI-M17.24
26	TI-M17.26
28	TI-M17.28
30	TI-M17.30

2.7mm Cortical Screw, Self-Tapping, (Hex Head)

Length (mm)	Titanium
6	TI-103.206
8	TI-103.208
10	TI-103.210
12	TI-103.212
14	TI-103.214
16	TI-103.216
18	TI-103.218
20	TI-103.220
22	TI-103.222
24	TI-103.224
26	TI-103.226
28	TI-103.228
30	TI-103.230





























2105-04 Implant Box wi

Implant Box with cover for 2.4mm Wise-Lock Distal Radius system



2105-05

Container for 2.4mm Wise-Lock Distal Radius Instrument Set





2300-000 2.4mm Wise-Lock Distal Radius Instrument Set



Instrument

2300-000 2.4mm Wise-Lock Distal Radius Instrument Set

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Codes	Set consisting of:	Units
1312-04-1.8	Drill Bit with Quick Coupling End, Ø1.8mm x Length 140mm, for Distal Radius	2
1312-05-2.0	Drill Bit with Quick Coupling End, Ø2.0mm x Length 140mm, for Distal Radius	2
1312-06-2.4	Drill Bit with Quick Coupling End, Ø2.4mm x Length 140mm, for Distal Radius	2
1312-07-2.7	Drill Bit with Quick Coupling End, Ø2.7mm x Length 140mm, for Distal Radius	2
2105-01	Guide Wire with One Sided Trocar Tip, Ø1.5mm x Length 150mm	3
2105-02	Guide Wire with Threaded Tip, Ø1.5mm x Thread Length 5mm x Length 150mm	3
7-055-03	Self-Centering Double Drill Guide, Ø1.8/2.4mm, for Distal Radius	1
7-055-04	Self-Centering Double Drill Guide, Ø2.0/2.7mm, for Distal Radius	1
1312-01	Depth Gauge measuring upto 60mm for Distal Radius	1
1312-21	Torque Limiting Attachment, 0.8Nm, for Distal Radius	1
7-019-03	Handle for Torque Limiting Attachment for Distal Radius	1
1312-22	Quick Coupling Handle for Distal Radius	1
1312-17	Depth Gauge with Protector measuring upto 50mm, for Distal Radius	1
1312-29	Sharp Hook for Distal Radius	1
1312-02	T-Handle With Quick Coupling for Distal Radius	1
1312-22-6.5	Retractor, 6.5mm, for Distal Radius	1
1312-03-15	Retractor, 15mm, for Distal Radius	1
1312-23	Double Periosteal Elevator, Round, for Distal Radius	1
1312-24	Double Periosteal Elevator, Flat, for Distal Radius	1
1312-25	Reduction Forcep with Points, Small, for Distal Radius	1
1312-26	Reduction Forcep with Points, Large, for Distal Radius	1
1312-27	Reduction Forcep with Points, Serrated, for Distal Radius	1
1312-28	Bending Forcep for Distal Radius	2
2105-03	Screwdriver, Hex 2.0mm, for Distal Radius	1
2105-07	Screwdriver Shaft, Hex 2.0mm, for Distal Radius	1
1312-10-2.4	Tap, HA 2.4mm for Distal Radius	1
1312-11-2.7	Tap, HA 2.7mm for Distal Radius	1
1312-14-2.0	Threaded Drill Sleeve Ø2.0mm/2.7mm for Distal Radius	2
7-055-02	Threaded Drill Sleeve Ø1.8mm/2.4mm (Single Start Thread), for Distal Radius	2
1312-20-2.7	Screw Holding Sleeve for 2.7mm Cortical Screw - Distal Radius	1
1312-20-2.4	Screw Holding Sleeve for 2.4mm Cortical Screw - Distal Radius	1
1312-30-2.4	Screw Holding Sleeve for 2.4mm Wise-lock Screw - Distal Radius	1
7-055-01	Instrument Trays for 2.4mm Wise-Lock Distal Radius Instrument Set	2
2105-04	Implant Box with cover for 2.4mm Wise-Lock Distal Radius system	1
2105-05	Container for 2.4mm Wise-Lock Distal Radius Instrument Set	1



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