Auxein®

Surgical Technique

Wise-Lock "T" Wrist Volar Plate

www.auxein.com

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 Wise-Lock "T" Wrist Volar Plate is used for fixation of fractures and osteotomies involving the distal radius. This plate is single use implantable device for long term duration (intended for continuous used for more than 30 days) contacting radius bone and its surrounding tissues.

INDICATIONS:

The Distal Radius Implants are intended for:

- Displaced extra-articular and intra-articular distal radius fractures.
- Dorsally displaced fractures
- Extra-articular fractures with metaphyseal defect (AO classification 23-A3)
- Open joint reconstruction (AO classification 23-C1, C2, C3)
- Corrective osteotomies

CONTRAINDICATIONS:

Contraindications include but are not limited to:

- Infection, local to operative site
- Signs of local inflammation
- Morbid Obesity
- Severely comminuted fractures in which bone fractures are too small or numerous to fix or maintain a reduced position
- Metal sensitivity or intolerance
- Alcohol or drug addict
- Symptomatic Arthritis
- Malignant Tumors, pimary or metastatic
- Poor bone quality
- Foreign body sensibility
- Vascular compromise

Patient Positioning: Patient is placed in supine position on an operating table. Forearm is rested on hand table in supinated position so that palm faces upwards

Skin Incision: An incision of 8cm is made over the course of flexor carpi radialis (FCR) tendon. For better access and visualization, a zigzag incision is made across the wrist flexion.

Plate Positioning: The plate is positioned in such a way that the plate conforms to the fracture line and sits on the volar surface of the radius.

Initial Plate fixation:

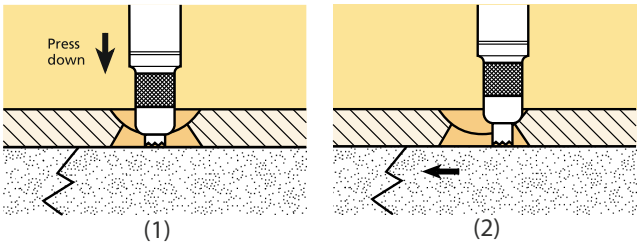
Firstly, the 3.5mm cortical screw is inserted into the proximal oblong hole which will allow adjusting the plate for initial fixation. Follow the below steps for 3.5mm Cortical screw insertion:

- **Predrilling Screw Hole:** The 2.5/3.5mm drill guide (1472-046) is placed along the plate hole and the 2.5mm drill bit (2100-2.5-112) is inserted through it for predrilling the hole.

Precaution: Selection of correct drill bit should be carefully chosen.for the gliding hole.

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.



(1) (2)

Determining screw length: The desired screw length is measured with the help of depth gauge (3443.37)

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 as excessive length can lead to soft tissue irritation or damage.

Screw Insertion: The 2.5mm tip Hexagonal screwdriver (3406.03) is used to pick and insert the 3.5mm cortical screw of selected length.

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.

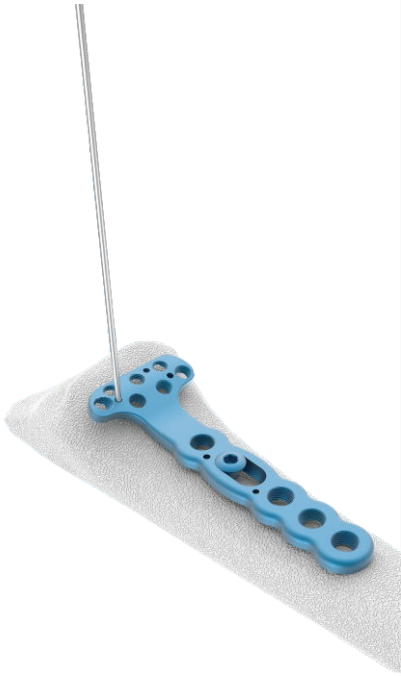
Distal Plate Fixation: Final fracture reduction is performed before distal plate fixation. The head of the plate accepts both the 2.5mm volar screws as well as 2.0mm peg screws.

The 2.0mm peg screws provide better hold on the dorsal comminuted fragments and a strong peg to plate interface.

The 2.5mm volar screw is available in both full thread and partial thread. The volar screw with partial thread helps in securing the fragments in coronal plane.

The following steps are used for screw insertion:

- The k-wire is passed through the k- wire hole in plate head to secure the bone fragment to the plate.



- The Drill sleeve Ø2.0 (1312-14-2.0) is attached to the proximal plate threaded head hole and drill bit Ø2.0 (2100-2.0-100) is used to drill through the bone. The marking on the drill bit coinciding with the one on the drill sleeve indicates the required screw length for insertion.

- The Star head Screwdriver shaft is assembled to 0.8Nm Torque limited screwdriver (1312-21) and then attached into the quick coupling handle (1312-22). This assembly is then used to insert the 2.5mm volar screws or the 2.0mm peg screws as per requirement into the predrilled holes.

- After filling the proximal head holes, all the distal head holes are filled with the volar/peg screws.

Precaution: Care should be taken while screw insertion. Avoid excessive tightening or loosening. Choose appropriate size torque limiter.

Proximal Plate Fixation: The locking shaft holes of the plate accept 3.5mm Wise lock screws.

- The 3.5mm threaded drill guide (3441.18) 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. The 2.8mm drill bit (2103-2.8-165) is then inserted into the guide to drill the bone for screw insertion.

- The depth gauge (3443.37) is then used to measure the required screw length for insertion.

- The 1.5Nm Torque Screwdriver (TQ-2.5) is attached to the Torque Screw Driver Handle (1472-064). The Star head Screwdriver shaft is further coupled into the 1.5Nm Torque screwdriver. Now this screwdriver assembly is used to insert the 3.5mm Wise lock into the predrilled hole.

2100-1.8-110 Drill Bit Ø1.8

2100-2.4-100 Drill Bit Ø2.0

2100-2.0-100 Drill Bit Ø2.4

2100-2.7-100 Drill Bit Ø2.7

2105-01 Guide Pin Ø1.5

2105-02 Threaded Guide Pin Ø1.5

3767-2.4 Double Drill Guide Ø2.4/1.8mm

3767-2.7 Double Drill Guide,Ø2.7/2.0mm

1312-01 Depth Gauge

1312-21 Torque limited screwdriver, 0.8Nm

1312-22 Quick Coupling Handle

1312-17 Depth Gauge(with protector)

1312-29 Sharp Hook

1312-02 T handle with quick coupling

1312-22-6.5 Retractor, 6.5mm

1312-03-15.5 Retractor, 15.5mm

1312-23 Double Periosteal Elevator, Round

1312-24 Double Periosteal Elevator, Flat

1312-25 Reduction Forceps with points, small

1312-26 Reduction Forceps with points, large

1312-27 Reduction Forceps with points, Serrated

1312-28 Bending Forceps

2105-03 Screwdriver, Hex SW2.0

2105-07 Screwdriver, Orthopaedics

2104-01 Tap, for 2.7mm Screws

2104-010 Tap, for 2.4mm Screws

1312-14-2.0 Drill Sleeve Ø2.0

1312-13-1.8 Drill Sleeve Ø1.8

1312-20-2.7 Screw holding sleeve for 2.7mm cortical screw

1312-20-2.4 Screw holding sleeve for 2.4mm cortical screw

1312-30-2.4 Screw holding sleeve for 2.4mm wise lock screw

2104-02 Bone Tap Quick Coupling for Cortical Screws, Ø3.5mm

2100-2.5-112 Drill Bit Quick Coupling,Ø2.5mm x 112mm

2103-2.8-165 Drill Bit Quick Coupling with Stopper, Ø 2.8mm x Length 165mm

1472-046 Drill Guide, Ø2.5/3.5mm

3441.18 Threaded Drill Guide, Ø3.5mm for drill bit 2.8mm

TQ-2.5 Torque Screw Driver - 2.5mm Tip, 1.5Nm

Wise-Lock "T" Wrist Volar Plate

	Left Direction	Right Direction
Holes	Titanium	Titanium
3	6137/06	6136/06
4	6137/01	6136/01

2.5mm Volar Screws, Self Tapping, Partial Thread

Length (mm)	Titanium
10	6152/11
12	6152/01
14	6152/02
16	6152/03
18	6152/04
20	6152/05
22	6152/06
24	6152/07
26	6152/08
28	6152/09
30	6152/10

2.5mm Volar Screws, Self Tapping, Full Thread

Length (mm)	Titanium
10	6151/10
12	6151/01
14	6151/02
16	6151/03
18	6151/04
20	6151/05
22	6151/06
24	6151/07
26	6151/08
28	6151/09
30	6151/11

2.0mm Peg Screws

Length (mm)	Titanium
10	6153/09
12	6153/10
14	6153/11
16	6153/01
18	6153/02
20	6153/03
22	6153/04
24	6153/05
26	6153/06
28	6153/07
30	6153/08

3.5mm Cortical Screws

Length (mm)	Titanium
10	TI-104.010
12	TI-104.012
14	TI-104.014
16	TI-104.016
18	TI-104.018
20	TI-104.020
22	TI-104.022
24	TI-104.024
26	TI-104.026
28	TI-104.028
30	TI-104.030
32	TI-104.032
34	TI-104.034
36	TI-104.036
38	TI-104.038
40	TI-104.040
42	TI-104.042
44	TI-104.044
46	TI-104.046
48	TI-104.048
50	TI-104.050

3.5mm Wise-Lock Screws, Self Tapping

Length (mm)	Titanium
10	TI-117.010
12	TI-117.012
14	TI-117.014
16	TI-117.016
18	TI-117.018
20	TI-117.020
22	TI-117.022
24	TI-117.024
26	TI-117.026
28	TI-117.028
30	TI-117.030
32	TI-117.032
34	TI-117.034
36	TI-117.036
38	TI-117.038
40	TI-117.040
42	TI-117.042
44	TI-117.044
46	TI-117.046
48	TI-117.048
50	TI-117.050
52	TI-117.052
54	TI-117.054
56	TI-117.056
58	TI-117.058
60	TI-117.060

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