







# **Product Overview**

# Screw Specifications

Screw Types	Outer Diameter	Length	Insertion Types	Screw Head Recess	Color	Material
Locking Screw	Ø2.5mm	8 ~30mm	Self-Tapping	Hexagonal	Sliver 🔵	Titanium Alloy
Cortical Screw (Non-Locking)						

# **Plate Specifications**

Distal Head Types	Thickness	Overall Length	Head Width	Color	Material	
Medium	2.0mm	46.7mm	19.6mm		Pure Titanium Gr.4	
Large		52.7mm	23mm	Left : Green 🌑 Right : Blue 🔍		
Extra Large		73.7mm	27mm			

# **Materials of Implants**

All plates are made from pure titanium material in conformity with ASTM F67.

All screws are made from titanium alloy material in conformity with ASTM F136.

The titanium is the ideal material for implant.

It is biocompatible, corrosion resistant, and non-toxic in the biological environment.

# Indication

ARIX Volar Distal Radius Locking Plate System

is intended for use in temporary internal fixation and stabilization

of fractures, osteotomies, and non-unions of the distal radius.

### **Screw Head Recess**

Self-retaining hexagonal recess for connection between screw head and screwdriver shaft

### **Screw Options**

Self-tapping Locking Screws: 8mm ~ 30mm Self-tapping Cortical Screws(Non-Locking): 8mm ~ 30mm Outer Diameter: 2.5mm



Cortical Screw (Non-Locking) Locking Screw

### Minimal soft tissue irritation

**Anatomical Volar Plate** 

Rounded plate edges to minimize soft tissue irritation Rounded screw head design and minimal screw head prominence in the plate to reduce the potential for soft tissue irritation.

Low overall profile of the plate and screw construct for minimal soft tissue irritation.

Anatomical plate contour and screw trajectories for maximum

support of lunate facet and stable fixation of radial styloid.



Lunate facet

Radial styloid fragment





The oblong hole in the plate shaft allows distal or proximal adjustment

for accurate plate positioning on the bone.

1mm increment lines are marked beside oblong hole as a reference for plate positioning.



### **Easy Plate Identification**

Distal head size information such as Medium / Large / Extra Large and Plate type information such as Left / Right are marked on plates for easy plate identification.



# **Poly-Axial Locking System**

The poly-axial hole of a plate accepts locking or cortical screws as surgical needs. Locking screws as well as cortical screws can be inserted in  $\pm 15^{\circ}$  with respect to the plate in any direction.

# **Benefits of Locking Plating System**

Locking plate and screw system provides more stable fixation

than conventional plate and screw system. Locking screws will not be

loosened from the plate during the healing process. Locking screws do not rely on bone to plate compression.

A fixed angle construct can be created by using locking screws in osteopenic bone or multi fragmentary fractures where secure bone purchase with conventional screws may be compromised.

# Guide Pin holes for temporary plate fixation

The Guide Pin holes of a plate accept up to 1.1mm Guide Pin. Guide Pin can be placed for temporary maintenance of bone reduction and provisional plate fixation. with respect to radiocarpal joint Guide Pin hole to approximate the trajectories of the ulna screws with

> Guide Pin holes for provisional fixation of plate

respect to DRUJ



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Guide Pin holes to approximate the trajectories of the distal screws

### **Fixed Angle Drill Sleeve**

Helps to drill a pilot hole in the nominal trajectory of each locking hole. Scales are marked on the drill guide & bit for prompt depth measurement without the help of a depth gauge.

#### Depth Gauge

Determine the optimal screw length with the depth gauge. The triangular-prism shaped scale of depth gauge shows the exact length in any direction.





#### **Drill Guide Block**

The drill guide blocks enable insertion of screws in the nominal trajectory of each locking hole.

The scaled drill guide of 111-080 variable angle drill guide is necessary for the use of these blocks.

Total 6 models in Medium/Large/Extra Large, and Left/Right plates.

The drill guide blocks are made from radiolucent material.



### Variable Angle Drill Guide

Helps to drill pilot holes within the poly-axial range of ±15°.

Scales are marked on the drill guide & bit for prompt depth measurement without the help of a depth gauge.

The tip of the drill guide has locking mechanism to offer stable locking with the plate temporarily.

To lock the drill guide with the plate, position(1) & turn(2) the drill guide slightly in clockwise as described picture.



### **Plate Bender**

If necessary, bend distal radius plate to suit the patients' anatomical conditions using a pair of plate benders. With the plate benders, hold & bend the plate around the center window. NOTE: Do Not bend the plate more than 5°.

Further or Repetitive bending may break the plate.



# **Ordering Information – Medium Plates**

# ARIX Volar Distal Radius Plates





# 25-DVRA-109-L

- Locking Plate / Medium / Left
- Head Width : 19.6mm
- Length : 46.7mm
- Holes : 9 Locking Holes
- Thickness: 2mm
- Color: Green 🔘



### 25-DVRA-109-R

- Locking Plate / Medium / Right
- Head Width : 19.6mm
- Length : 46.7mm
- Holes : 9 Locking Holes
- Thickness: 2mm
- Color: Blue 🔘



# 25-DVRA-110-L

- Locking Plate / Medium / Left
- Head Width : 19.6mm
- Length : 52.7mm
- Holes : 10 Locking Holes
- Thickness: 2mm
- Color: Green 🔘



# 25-DVRA-110-R

- Locking Plate / Medium / Right
- Head Width : 19.6mm
- Length : 52.7mm
- Holes : 10 Locking Holes
- Thickness: 2mm
- Color: Blue 🔘

# **Ordering Information – Medium Plates**



- Head Width : 19.6mm
- Length : 73.7mm
- Holes : 11 Locking Holes
- Thickness: 2mm
- Color: Green 🔘



#### 25-DVRA-111-R

- Locking Plate / Medium / Right
- Head Width : 19.6mm
- Length : 73.7mm
- Holes : 11 Locking Holes
- Thickness: 2mm
- Color: Blue 🔘

Drill Guide Block



#### 111-082-L

Drill Guide Block, Medium, Left

• 1: 2 Scale



111-082-R

Drill Guide Block, Medium, Right

• 1: 2 Scale

# **Ordering Information – Large Plates**

# ARIX Volar Distal Radius Plates



# 25-DVRA-210-L

- Locking Plate / Large / Left
- Head Width : 23mm
- Length : 52.7mm
- Holes : 10 Locking Holes
- Thickness: 2mm
- Color: Green 🔘



#### 25-DVRA-209-R

- Locking Plate / Large / Right
- Head Width : 23mm
- Length : 46.7mm
- Holes : 9 Locking Holes
- Thickness: 2mm
- Color: Blue 🌑





### 25-DVRA-210-R

- Locking Plate / Large / Right
- Head Width : 23mm
- Length : 52.7mm
- Holes : 10 Locking Holes
- Thickness: 2mm
- Color: Blue 🔘

# **Ordering Information – Large Plates**



• Color: Blue 🔘

Drill Guide Block



### 111-083-L

Drill Guide Block, Large, Left

• 1: 2 Scale



111-083-R

Drill Guide Block, Large, Right

• 1: 2 Scale

# **Ordering Information – Ex-Large Plates**

# ARIX Volar Distal Radius Plates



# 25-DVRA-310-L

- Locking Plate / Extra Large / Left
- Head Width : 27mm
- Length : 52.7mm
- Holes : 10 Locking Holes
- Thickness: 2mm
- Color: Green



# 25-DVRA-309-R

- Locking Plate / Extra Large / Right
- Head Width : 27mm
- Length : 46.7mm
- Holes : 9 Locking Holes
- Thickness: 2mm
- Color: Blue 🔘



# 25-DVRA-310-R

- Locking Plate / Extra Large / Right
- Head Width : 27mm
- Length : 52.7mm
- Holes : 10 Locking Holes
- Thickness: 2mm
- Color: Blue 🔘

# **Ordering Information – Ex-Large Plates**



Color: Blue

Drill Guide Block

• Color: Green 🔘



### 111-095-L

Drill Guide Block, Extra Large, Left

• 1: 2 Scale



111-095-R

Drill Guide Block, Large, Right

• 1: 2 Scale

# **Ordering Information – Locking Screws**



# 2.5mm Self-Tapping Locking Screws

[Unit: mm]

No.	Code	Head Diameter	Outer Diameter	Length (L)	Color
1	161.032508			8	
2	161.032510			10	
3	161.032512	1		12	
4	161.032514			14	
5	161.032516	Ø3.8		16	
6	161.032518		<i>3</i> .2.5	18	Class
7	161.032520		Ø2.5	20	Sliver
8	161.032522			22	
9	161.032524			24	
10	161.032526			26	
11	161.032528			28	
12	161.032530			30	

# **Ordering Information – Cortical Screws**



# 2.5mm Self-Tapping Cortical Screws

[Unit: mm]

No.	Code	Head Diameter	Outer Diameter	Length (L)	Color
1	25-HF-008			8	
2	25-HF-010			10	
3	25-HF-012	1		12	
4	25-HF-014			14	
5	25-HF-016	- Ø3.7		16	
6	25-HF-018		a) r	18	Cilver
7	25-HF-020		102.5	20	Silver
8	25-HF-022			22	
9	25-HF-024			24	
10	25-HF-026			26	
11	25-HF-028			28	
12	25-HF-030			30	

113-HF-607

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Hexagonal Screwdriver Shaft

112-25-701 Drill Bit, Drilling length : 30mm / Overall length : 110mm

111-068-2 Guide Pin Ø1.1mm

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**111-080** Variable Angle Drill Guide



111-101 Fixed angle drill sleeve(Distal)



JEIL 112-25-701













Plate Module(Medium / Large)





Plate Module(EX-Large)



# **Set Configuration**

NO	Code	Description	Set Quantity
Impl			
1	161.032508	2.5 Locking Screw (8mm)	5
2	161.032510	2.5 Locking Screw (10mm)	5
3	161.032512	2.5 Locking Screw (12mm)	10
4	161.032514	2.5 Locking Screw (14mm)	10
5	161.032516	2.5 Locking Screw (16mm)	10
6	161.032518	2.5 Locking Screw (18mm)	10
7	161.032520	2.5 Locking Screw (20mm)	10
8	161.032522	2.5 Locking Screw (22mm)	10
9	161.032524	2.5 Locking Screw (24mm)	5
10	161.032526	2.5 Locking Screw (26mm)	5
11	161.032528	2.5 Locking Screw (28mm)	5
12	161.032530	2.5 Locking Screw (30mm)	5
13	25-HF-008	2.5 Cortical Screw (8mm)	5
14	25-HF-010	2.5 Cortical Screw (10mm)	5
15	25-HF-012	2.5 Cortical Screw (12mm)	10
16	25-HF-014	2.5 Cortical Screw (14mm)	10
17	25-HF-016	2.5 Cortical Screw (16mm)	10
18	25-HF-018	2.5 Cortical Screw (18mm)	10
19	25-HF-020	2.5 Cortical Screw (20mm)	10
20	25-HF-022	2.5 Cortical Screw (22mm)	10
21	25-HF-024	2.5 Cortical Screw (24mm)	5
22	25-HF-026	2.5 Cortical Screw (26mm)	5
23	25-HF-028	2.5 Cortical Screw (28mm)	5
24	25-HF-030	2.5 Cortical Screw (30mm)	5

NO	Code	Description	Set Quantity		
Implants _ Plates					
1	25-DVRA-109-R	Medium, Length 46.7mm, Right	3		
2	25-DVRA-109-L	Medium, Length 46.7mm, Left	3		
3	25-DVRA-110-R	Medium, Length 52.7mm, Right	2		
4	25-DVRA-110-L	Medium, Length 52.7mm, Left	2		
5	25-DVRA-111-R	Medium, Length 73.7mm, Right	1		
6	25-DVRA-111-L	Medium, Length 73.7mm, Left	1		
7	25-DVRA-209-R	Large, Length 46.7mm, Right	3		
8	25-DVRA-209-L	Large, Length 46.7mm, Left	3		
9	25-DVRA-210-R	Large, Length 52.7mm, Right	2		
10	25-DVRA-210-L	Large, Length 52.7mm, Left	2		
11	25-DVRA-211-R	Large, Length 73.7mm, Right	1		
12	25-DVRA-211-L	Large, Length 73.7mm, Left	1		
13	25-DVRA-309-R	Extra Large, Length 46.7mm, Right	3		
14	25-DVRA-309-L	Extra Large, Length 46.7mm, Left	3		
15	25-DVRA-310-R	Extra Large, Length 52.7mm, Right	2		
16	25-DVRA-310-L	Extra Large, Length 52.7mm, Left	2		
17	25-DVRA-311-R	Extra Large, Length 73.7mm, Right	1		
18	25-DVRA-311-L	Extra Large, Length 73.7mm, Left	1		

NO	Code	Description	Set Quantity
Insti	ruments		
1	112-084	ARIX Volar Distal Radius System Full Container	1
2	113-HF-607	Hexagonal Screwdriver Shaft	2
3	112-25-701	Drill Bit	2
4	111-068-2	Guide Pin	10
5	111-080	Variable Angle Drill Guide	1
б	111-101	Fixed angle drill sleeve(Distal)	1
7	111-103	Variable angle drill sleeve	1
8	111-157	Variable angle drill sleeve handle	1
9	111-082-R	Drill Guide Block, Medium, Right	1
10	111-082-L	Drill Guide Block, Medium, Left	1
11	111-083-R	Drill Guide Block, Large, Right	1
12	111-083-L	Drill Guide Block, Large, Left	1
13	111-095-R	Drill Guide Block, Extra Large, Right	1
14	111-095-L	Drill Guide Block, Extra Large, Left	1
15	114-009	Grasping Forceps	1
16	111-092	Screwdriver Handle	2
17	111-096	Dispenser	1
18	111-075	Depth Gauge	1
19	26.0240.17	Plate Bender	2

# How to use Drilling Instruments

### 111-080 Variable Angle Drill Guide

Variable Angle Drill Guide can be used in every part of the plate exclusively or with a drill guide block. It has two types of guiding angles. One is a fixed angle, and the other allows various angles for drilling. Both do not have tabs to lock onto the plate. It is used directly with no locking process.

111-080 Variable Angle Drill Guide

(Hand held type)

# 111-101 Fixed angle drill sleeve

Fixed angle drill sleeve(Distal) can be used exclusively in every part of the plate. It has a fixed angle for drilling. It has a tab to lock onto the plate. This locking provides a strong connection to the plate.

### 111-103 Variable angle drill sleeve

Variable angle drill sleeve can be used exclusively in every part of the plate. It allows various angles for drilling. It has a tab to lock onto the plate. This locking provides strong connection to the plate.

This instrument comes in a set.

111-103 is a variable angle drill sleeve, and 111-157 is its handle. After locking to the plate, detach the handle(111-157) from the variable angle drill sleeve(111-103) to proceed to drilling.









### Contraindications

- Patients with insufficient bone quantity and quality
- Patients with insufficient blood supply
- Patients with metal allergies or hypersensitivity to foreign bodies.
- Patients with active or suspected infections at the implantation sites.
- Patients who are unwilling or incapable of postoperative treatment instructions

### Warning

- This technique guide alone does not provide sufficient information for immediate application of surgical technique. Surgeons should be trained or experienced in using this product. Instruction by a surgeon experienced in this product is highly recommended. Decision on choosing appropriate implants, surgical technique, time of implant removal is under surgeon's discretion. All implants and instruments should be sterilized prior to use.
- All implants are for a single use. Implants should not be re-used.

# Reduction

Reduce the fracture manually, using the most appropriate reduction method for the fracture pattern.

\*Using guide pins for temporary fixation might help the plate placement.

# Instruments

111-068-2 Guide Pin

# **Plating and Bending**

Place the plate over the volar surface of the distal radius.

If necessary, bend the distal radius plate to suit the patients' anatomical conditions using a pair of plate benders.

With the plate benders, hold & bend the plate around the center window.

Warning: DO NOT bend the plate more than 5°. Further or Repetitive bending may break the plate.

### Instruments

26.0240.17 Plate Bender

# **Fixation-Insertion of Oblong Hole Screw**

The purpose of the oblong holes is to aid the plate positioning. The oblong hole is not compatible with a locking screw. Thus, a non-locking cortical screw is required for this type of holes.

\*Using the drill bit and drill guide.

First, place the drill guide into the oblong hole of the plate, prior to drilling the pilot hole.

Drill the pilot hole using the drill bit. The screw length might be measured by using the depth marks on the drill bit and the window of the drill guide.

### Instruments

111-080 Variable Angle Drill Guide 112-25-701 Drill Bit









Use the depth gauge to measure the depth of the pre-drilled (pilot) hole before inserting a cortical screw in the oblong hole.

### Instruments

111-075 Depth Gauge

After choosing the length of screw, use the hand driver to insert the first screw in the oblong hole in the plate and to the bone segment.

Do not tighten the screw completely to allow later adjustment of the plate position as necessary.

\*Edge scales are marked on the next to the oblong hole in 1mm increments.

### Instruments

111-092 Screwdriver Handle 113-HF-607 Hexagonal Screwdriver Shaft

# **Fixation - Insertion of Distal Screws**

Except for the oblong hole, all other regular holes are for providing tight fixation of the plate on the bone surface. The regular holes are compatible with both the non-locking cortical screws and the Locking Screws. For the Locking Screws, the regular holes also offer the Variable Locking (±15°) function. The surgeon may choose the most appropriate screws.

\*Using the Locking Screw and drill guide block.

Attach a drill guide block to the plate to prepare the insertion of distal screws. Drill the holes to the desired depth using the drill bit. The depth is shown in the marked window of the drill guide. Determine the screw length using a depth gauge.

### Instruments

111-082-R Drill Guide Block, Medium, Right 111-082-L Drill Guide Block, Medium, Left 111-083-R Drill Guide Block, Large, Right 111-083-L Drill Guide Block, Large, Left 111-095-R Drill Guide Block, Extra Large, Right 111-095-L Drill Guide Block, Extra Large, Left 111-080 Variable Angle Drill Guide 112-25-701 Drill Bit





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Insert locking screws on the distal holes of the plate. At least 3 or more locking screws should be inserted into the distal holes(upper row: 3x screws, lower row: optional) of the plate for proper fixation. The order of screw insertion and the use of guide pins may vary depending on the fracture pattern and the reduction method.

After the screw fixation, detach the drill guide block.

# Instruments

111-092 Screwdriver Handle 113-HF-607 Hexagonal Screwdriver Shaft

# **Fixation - Insertion of Proximal Screws**

\*Use Locking Screw and drill guide block.

After the insertion of the distal screws, continue to insert proximal screws. Drill the holes to the desired depth using the drill bit. The depth is shown in the marked window of the drill guide. Determine the screw length using a depth gauge.

After the measurement, Insert locking screws on the proximal holes of the plate shaft. At least 2 or more proximal locking screws should be inserted in the holes of the plate shaft. If any guide pins have been applied previously, remove them.

# Instruments

111-101 Fixed angle drill sleeve 111-103 Variable angle drill sleeve 112-25-701 Drill Bit

# **Fixation-Final Fixation**

Drill and insert a screw in the remaining distal hole.

Instruments 111-092 Screwdriver Handle 113-HF-607 Hexagonal Screwdriver Shaft





