TRAUMATOLOGY

Vortex

Distalis Radius plate

Sanatmetal®

References

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The following surgical description contains general outlines for radius plate fixation with the Vortex Distal Radius plate system. However, the operating surgeon shall adapt the content to the patient, fracture type and all other relevant factors that may have influence on the outcome of the surgery.

Therefore, Sanatmetal Ltd. strongly recommends participation on workshops and trainings prior to the initial operation.

Content

The Vortex Distal Radius plate is the first member of the polyaxial angle stabilized plate family of Sanatmetal. It offers wide range of possibilities for the precise and secure fixation of distal radius fractures. The screws can be inserted in ±15 deg angulation from preset anatomical directions enabling the surgeon to perform the most modern treatment of the fracture.

1.1 | The implant

- Polyaxial angle stabilized system in step - free ±15 deg angulation of insertion

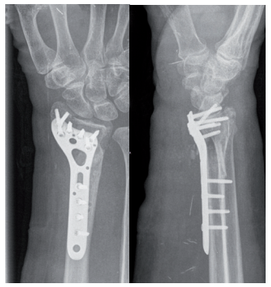
- Maximum 3 times of correction possibility when misidentifying the correct screw direction towards the fragment
- Ability to perform minimally invasive surgery
- Oval hole for plate fixation
- Rounded edges to protect nearby soft tissues
- Thinned head, the implant does not interfere with the wrist area tissues
- Holes for temporary Kirschner wires
- Self tapping but blunt ended screws to avoid tissue irritation
- 2 mm plate thickness
- Anodized Titanium raw material
- Torx headed screws
- Two different plate contours, the eared version is for fixing Styloid Processus fragments

1.2 | The instruments

- Capable of drilling in preset and ±15 deg step - free directions
- Instruments and implants in one tray
- Optimized instruments

1.3 | Indications

Distal radius fractures.



2.1 | Vortex Distalis Radius plate - V

Size	Holes on head	Holes on tail	Type
Large	**5+4**	**3; 5; 8**	**left/right**
Medium	**4+3**	**3; 5; 8**	**left/right**
Small	**3+2**	**3; 5; 8**	**left/right**

Raw material

Anodised Titanium

Colour

szürke

2.2 | Vortex Distalis Radius plate - V+

Size	Holes on head	Holes on tail	Type
Large	**5+4**	**3; 5; 8**	**left/right**
Medium	**4+3**	**3; 5; 8**	**left/right**
Small	**3+2**	**3; 5; 8**	**left/right**

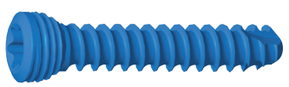
Raw material

Anodised Titanium

Colour

Grey

2.3 | Vortex screw Ø2,7 mm



Length

8 - 34

(in 1 mm steps)

Raw material

Anodised Titanium

Colour

Blue

2.4 | Cortical screw - TX Ø2,7 mm

Length

8 - 34

(in 2 mm steps)

Raw material

Anodised Titanium

Colour

Grey

3 | Surgical description

3.1 | Patient positioning

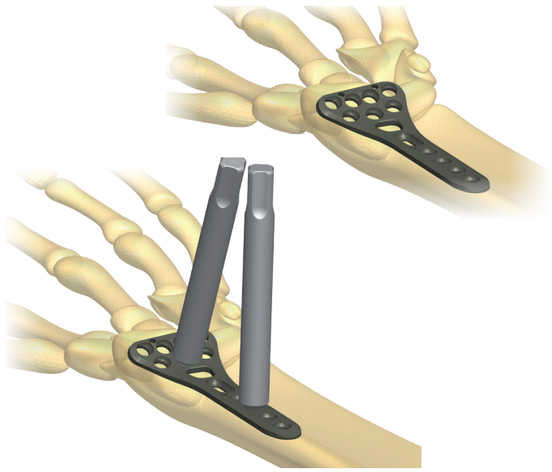
Patient is in supine position, the affected limb is straight and supported while the palm is upwards.

3.2 | Incision

Make a longitudinal incision from flexor carpi radialis to slightly radial direction. Locate FCR, radial artery, separate pronator quadratus from the lateral part of radius and lift above the ulna.

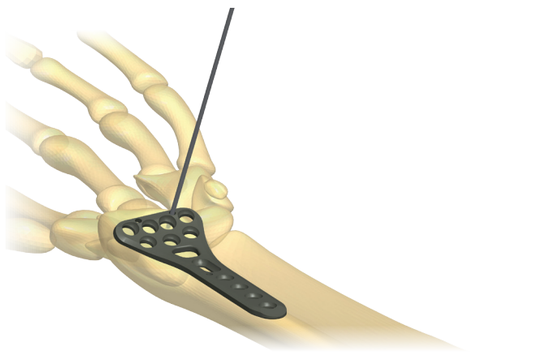
3.3 | Selecting the plate size

Select the plate of that size where the head of the plate is equivalent to the distal radius width. Take also into consideration the positions of the fragments. Whenever needed modellate the plate to the shape of the bone surface with bending tools. To modellate the plate enter the tools' threaded part into the holes of the plate and perform bending.



3.4 | Insertion of the plate

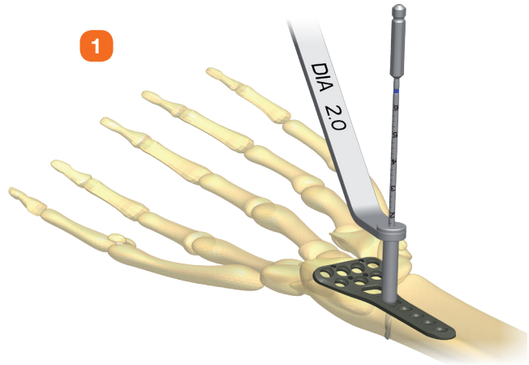
The optimal position of the plate is reached when the arched head of the plate is in level with the distal radius.
Fix the reposition with temporary Kirschner wires through the plate if needed. Pay close attention that the plate shall not interfere with the joint.



3.5 | Fixing the oval hole

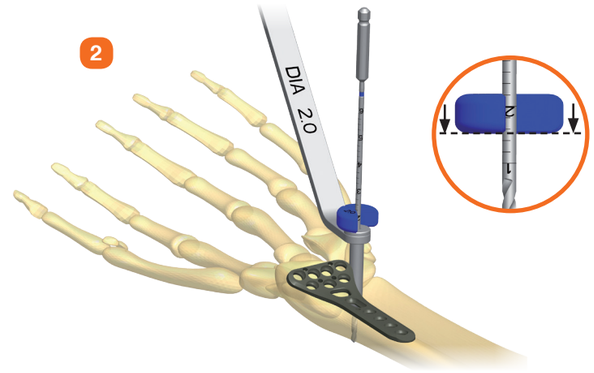
The first screw is inserted into the oval hole of the plate.

To do so place and sink the neutral sleeve of the double drill sleeve into the middle of the oval hole. Perform drilling with 2 mm spiral drill (1).



To determine the length of necessary screws there are two possibilities.

1) The laser marking on the drillbit functions as a length gauge. Push the stop to the surface of the sleeve. After the removal of drilling read the necessary screw length just below the stop (2).



2) After the removal of the drill and the sleeve guide the length gauge through the bone, hit against the bone surface, place the hook on the farther edge of the hole. Read the screw length at the red mark (3).

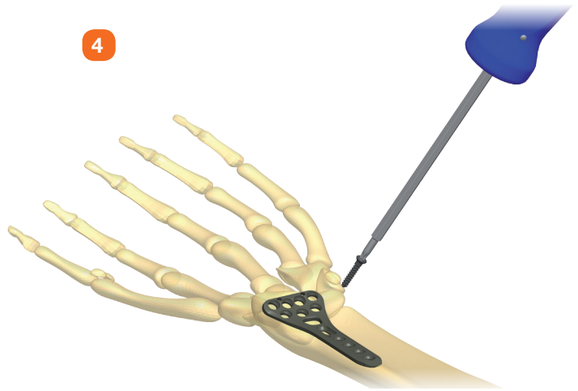
Drive in the screw with the Torx screwdriver (4). The screw should be tightened only to such an extent that the position of the plate could be corrected in longitudinal direction.

If the position of the plate is optimal tighten the screw in the oval hole. As soon as the screw head touches the plate switch to torque limiting screwdriver to avoid excessive torque. (5)

Pay attention that the plate shall not harm wrist joint.

Remark
Plates with bent ears provide fixation possibilities for fragments of Styloid processus.

4



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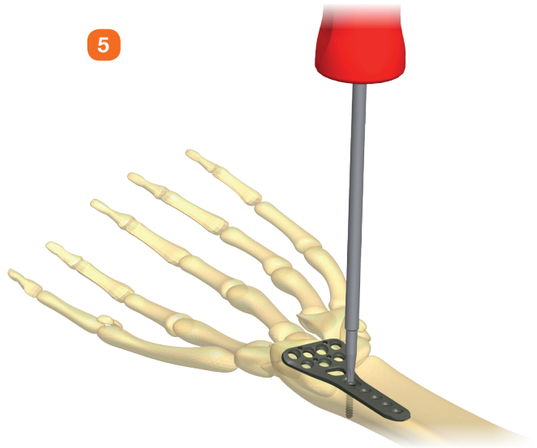
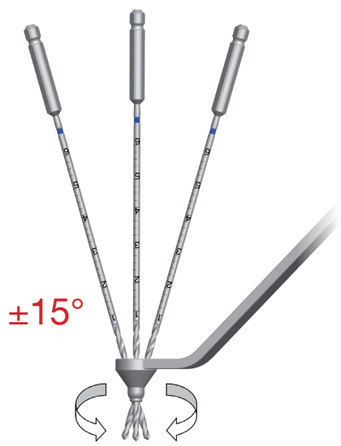


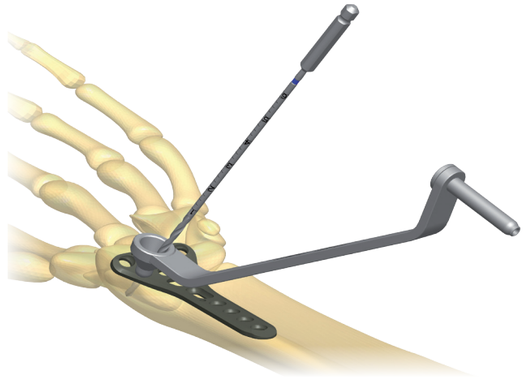
3.6 | Fixing screws in the head of the plate

After setting the optimal position of the plate first fix the screws of the head.
It is possible to insert the screws into preset anatomical directions. To achieve this pre-drill with the neutral (straight) sleeve see point 3.6.2.
To enter the screws within ±15 deg direction from the preset, use the polyaxial sleeve to obtain polyaxial angle stabilized connection between the plate and the screw. See 3.6.1.

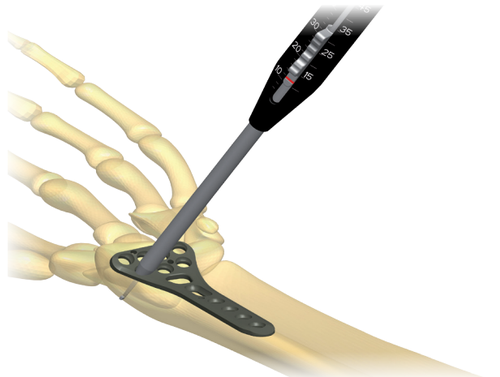


3.6.1 | Drilling through polyaxial sleeve

Place and sink the polyaxial sleeve into the hole of the plate. Perform drilling with 2 mm drillbit. Pay attention not to drill into the joint.



Attention
When pre-drilling for polyaxial screw only the traditional length measurement could be used.
Guide the length gauge through the bone, hit against the bone surface, place the hook on the farther edge of the hole. Read the screw length at the red mark.

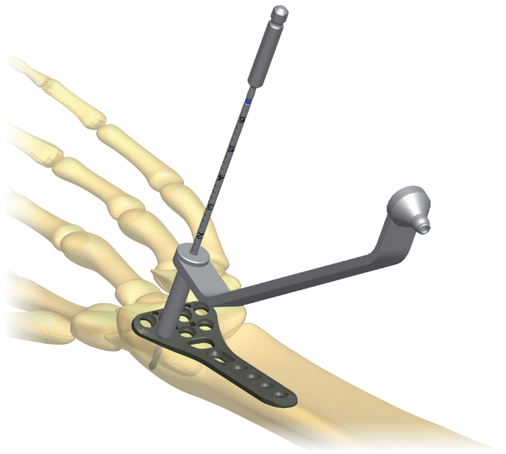


Drive in the screw with Torx screwdriver. The insertion of the screws is possible in ±15 deg angular deviance from the anatomically preset directions while maintaining the angle stabilized locking. As soon as the screw head touches the plate switch to torque limiting screwdriver to avoid excessive torque.

Perform the above in case of all screws considered necessary.

3.6.2 | Drilling through neutral sleeve

Place and sink the neutral (straight) sleeve of the double drill sleeve into the hole of the plate. Perform drilling with 2 mm drillbit.
According to point 3.5 the screw length determination could be made in two ways.
After length gauging fix the screw with Torx screwdriver. Screw insertion is possible in the preset directions while maintaining angle stabilized locking. As soon as the screw head touches the plate switch to torque limiting screwdriver to avoid excessive torque.
Perform the above in case of all screws considered necessary.

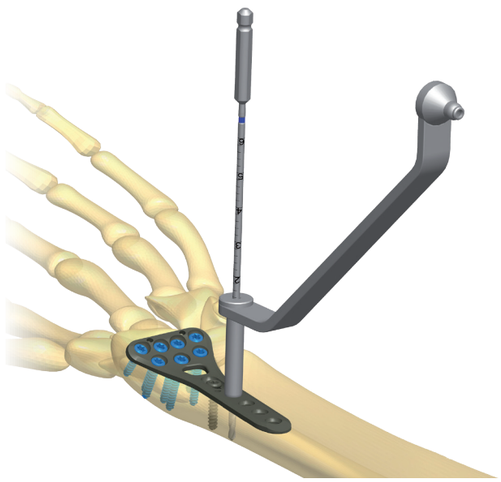


3.7 | Angle stabilized locking on the tail

On the tail of the plate it is possible to apply polyaxial and cortical screws. The appropriate axial stability is reached in case of perpendicular screw insertion.
For anatomical reasons the usage of Vortex angle stabilized screws is suggested.

3.7.1 | Drilling through neutral sleeve

Place and sink the neutral (straight) sleeve of the double drill sleeve into the hole of the plate. Perform drilling with 2 mm drillbit.
According to 3.5 perform length gauging by any of the described method and fix the screw with Torx screwdriver. As soon as the screw head touches the plate switch to torque limiting screwdriver to avoid excessive torque.



4.1 | Vortex Distalis Radius plate - V

Size	Type	Holes (H+S)	Length (mm)	Anodised Titanium
Large	Left	9 + 3	54	280115103
Large	Left	9 + 5	70	280115105
Large	Left	9 + 8	94	280115108
Large	Right	9 + 3	54	280115203
Large	Right	9 + 5	70	280115205
Large	Right	9 + 3	94	280115208
Medium	Left	7 + 3	52	280115303
Medium	Left	7 + 5	68	280115305
Medium	Left	7 + 8	92	280115308
Medium	Right	7 + 3	52	280115403
Medium	Right	7 + 5	68	280115405
Medium	Right	7 + 3	92	280115408
Small	Left	5 + 3	50	280115503
Small	Left	5 + 5	66	280115505
Small	Left	5 + 8	90	280115508
Small	Right	5 + 3	50	280115603
Small	Right	5 + 5	66	280115605
Small	Right	5 + 3	90	280115608

4.2 | Vortex Distalis Radius plate - V+

Size	Type	Holes (H+S)	Length (mm)	Anodised Titanium
Large	Left	9 + 3	63	280114103
Large	Left	9 + 5	79	280114105
Large	Left	9 + 8	103	280114108
Large	Right	9 + 3	63	280114203
Large	Right	9 + 5	79	280114205
Large	Right	9 + 3	103	280114208
Medium	Left	7 + 3	59	280114303
Medium	Left	7 + 5	75	280114305
Medium	Left	7 + 8	99	280114308
Medium	Right	7 + 3	59	280114403
Medium	Right	7 + 5	75	280114405
Medium	Right	7 + 3	99	280114408
Small	Left	5 + 3	55	280114503
Small	Left	5 + 5	71	280114505
Small	Left	5 + 8	95	280114508
Small	Right	5 + 3	55	280114603
Small	Right	5 + 5	71	280114605
Small	Right	5 + 3	95	280114608

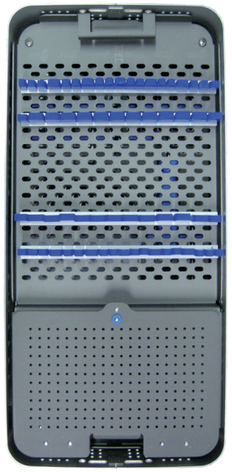
4.3 | Vortex screw Ø2,7 mm

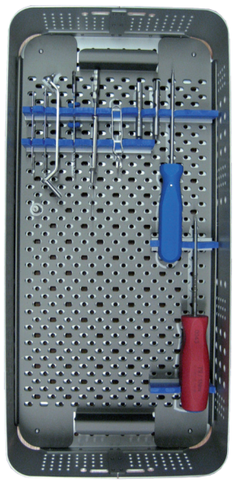
Size	Anodised Titanium
8	260827108
9	260827109
10	260827110
11	260827111
12	260827112
13	260827113
14	260827114
15	260827115
16	260827116
17	260827117
18	260827118
19	260827119
20	260827120
21	260827121
22	260827122
23	260827123
24	260827124
25	260827125
26	260827126
27	260827127
28	260827128
29	260827129
30	260827130
31	260827131
32	260827132
33	260827133
34	260827134

4.4 | Cortical screw - TX Ø2,7 mm

Size	Anodised Titanium
8	267527008
10	267527010
12	267527012
14	267527014
16	267527016
18	267527018
20	267527020
22	267527022
24	267527024
26	267527026
28	267527028
30	267527030
32	267527032
34	267527034

5.1 | Filled-up tray





Surgical instruments

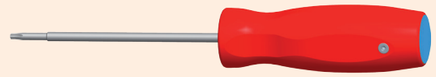
Description	Size	Quantity	Cat. no.
Screwdriver	T9	1	210720009
Torque screwdriver	T9/1 Nm	1	210510036
Plate bender	4 mm	2	280114901
Length gauge	2,7-3,5 mm	1	280114905
Double drill sleeve - PAS	2 mm	1	280114902
Spiral drill with quick-connecting end	2x125 mm	1	280114903
Kirschner wire	1.2x100 mm	10	937512100
Screw forceps	6 mm	1	939999002
Drill stop	2 mm	2	210510222
Tray (empty) VDR		1	233800015
Filled-up tray (VDR)		**1**	**233800014**

5.2 | Instruments

Screwdriver Torx (T9)

210720009

Torque limiting screwdriver (T9/1 Nm)



210510036

Plate bender (4 mm)

280114901

Depth gauge (2,7-3,5 mm)

280114905

Double drill sleeve - PAS (2 mm)

280114902

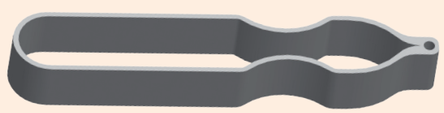
Spiral drill with quick connecting end (2x125 mm)

280114903

Kirschner wire (1,2x100 mm)

937512100

Screw forceps (6 mm)



939999002

Stop (2 mm)

210510222

Product family

TRAUMATOLOGY

1.1. Intramedullary nails
1.2. Plates
1.3. Screws
1.4. Fixateur externe
1.5. Other

ORTOPAEDICS

DENTAL

SPINE

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