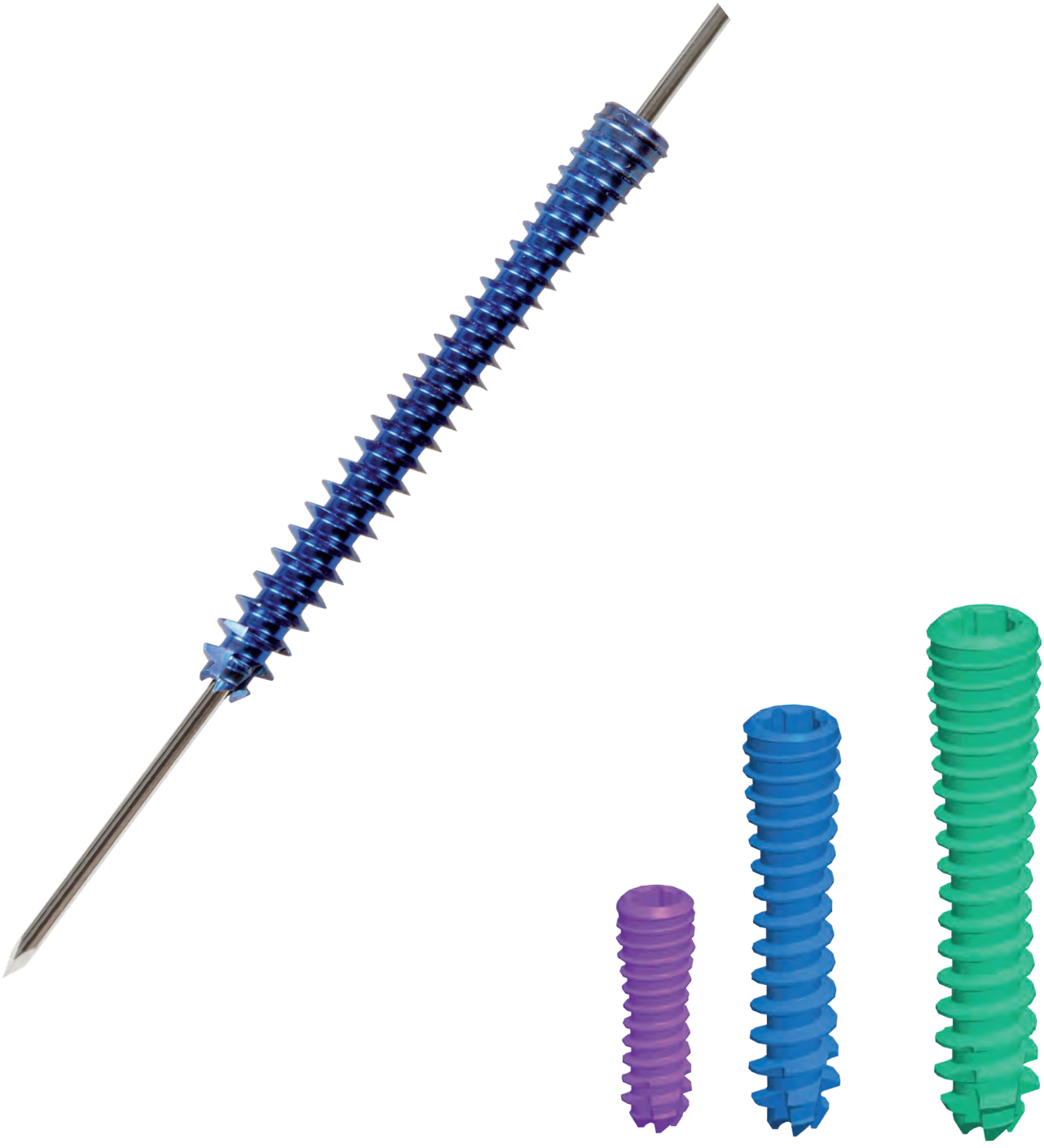
TRAUMATOLOGY

Helezonic Headles Canullated



1 | Introduction

The Helezonic screw is a type of compression screw which – unlike Herbert screws – does not only have two threaded parts but it is threaded in the full length. The compression effect is created by the continuously changing – reduced – pitch. This setup not only increases compression but the pullout force of the screw as well, thus the stability of the Helezonic screws are much higher than Herbert type screws. Also, Helezonic screws have conical core which compacts the bone around the screw enabling the surgeon to fix porotic bones as well.

1.1 | The implant

- Continuously changing pitch – optimal compression effect
- Conical core of the screw – compaction even in porotic bone

- Self tapping and self cutting screw tip

- Head-less construction
- Color coding according to diameters
- Cannulated insertion

1.2 | The instruments

- Screwdriver works as length gauge as well
- Torx type opening on screw heads. For the Helezonic screws use only Torx Alternative (TA) screwdrivers which are part of the instrument set
- Instruments are color coded to the screws

1.3 | Indications

- Extra- and intra-articular fractures
- Pseudoarthros
- Arthrodesis
- Osteotomies

Indications per screw diameter:

- *2,7 mm: maxillo-facial and hand surgical cases*
- *3,5 mm: hand surgical cases*
- *4,5 mm: foot surgical cases*

Surgical description | 2

2.1 | Helezonic screw Ø2.7 mm

Raw material

Anodised Titanium

Size

8 - 30 mm

Colour

purple

2.2 | Helezonic screw Ø3.5 mm

Raw material

Anodised Titanium

Size

14 - 50 mm

Colour

blue

2.3 | A-Spire screw Ø4.5 mm

Raw material

Anodised Titanium

Size

20 - 70 mm

Colour

green

3 | Surgical description

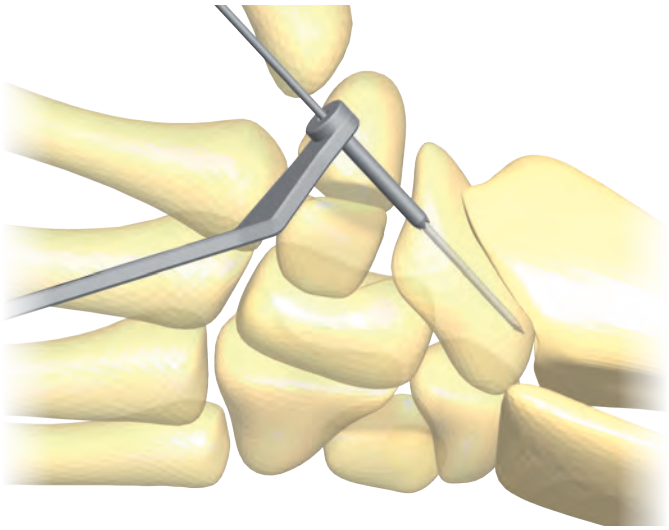
The application field of the screws varies by diameter but the steps to be followed are similar. Therefore, in the following the scaphoid technique with the 3.5 mm Helezonic will be discussed in details.
If any other size screw is used the given anatomical conditions and features of the area shall also be taken into consideration.

3.1 | Patient positioning

In supine position, the hand in a translucent hand table in volar position. It is important to have free access of the hand with image intensifier.

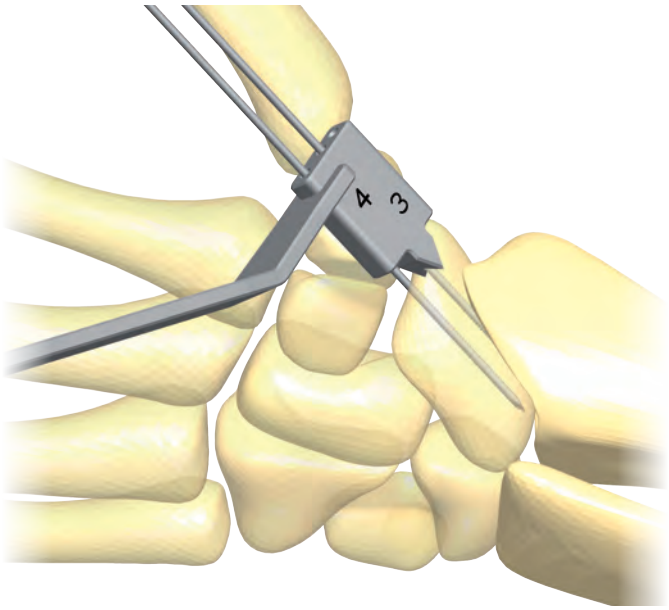
3.2 | Insertion of the Kirschner wire

Lead the 1x100 mm Kirschner wire into the O. Scaphoideum from the direction of the Tuber using the straight part of the double drill sleeve.



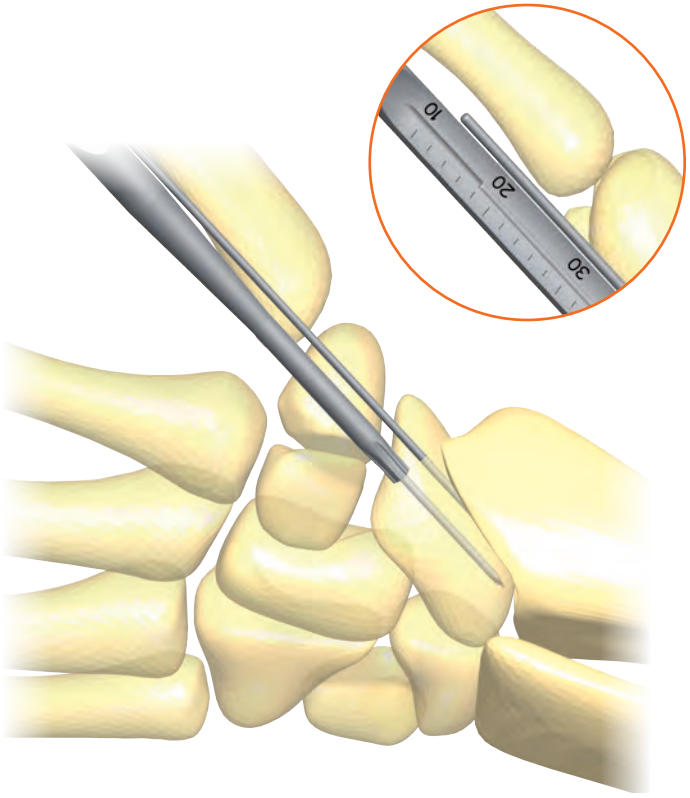
3.3 | Temporary fixation of the fracture to prevent rotation dislocation

In order to keep the optimal reposition during the further steps of surgery there is a possibility to apply another, rotation blocking Kirschner wire. The drill sleeve has got a block by which you can place a second, parallel Kirschner wire in 3; 4 or 7 mm distance from the original one.
Place the sleeve on the Kirschner wire that is in the bone and drill the next Kirschner wire in by using image intensifier control. The shape of the drill sleeve ensures good fixation on the bone surface.



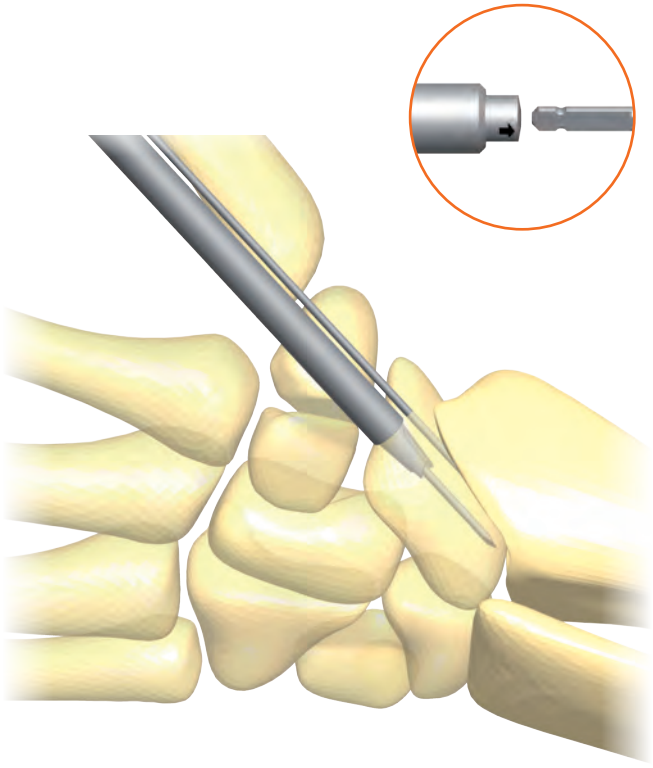
3.4 | Determining screw length

The screwdriver of the Helezonic Instrument set functions as a length gauge too. Put the color coded (in this technique TA 9 sized) screwdriver on that Kirschner wire where you intend to put the Helezonic screw. Push the screwdriver to the bone surface and read the screw length. The increments are by 2 mm.



3.5 | Preparing the place of the screw

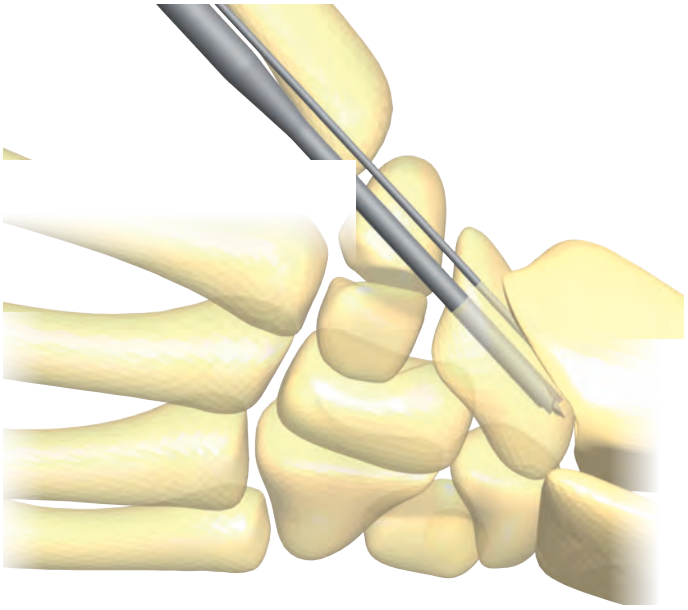
Due to the conical core of the screw a conical reamer has to be used. This creates the place for the “head” of the screw.
The conical reamer has a quick connecting end thus can be operated by hand or power tools. If you use power, ream until the cylindrical part of the reamer through the Kirschner wire. If you consider hand reaming better, use the quick coupling handle of the instrument set. Connect the handle and make the reaming until the necessary depth.
Pay attention that the flat part of the quick connecting part shall face the arrow on the handle.



3 | Surgical description

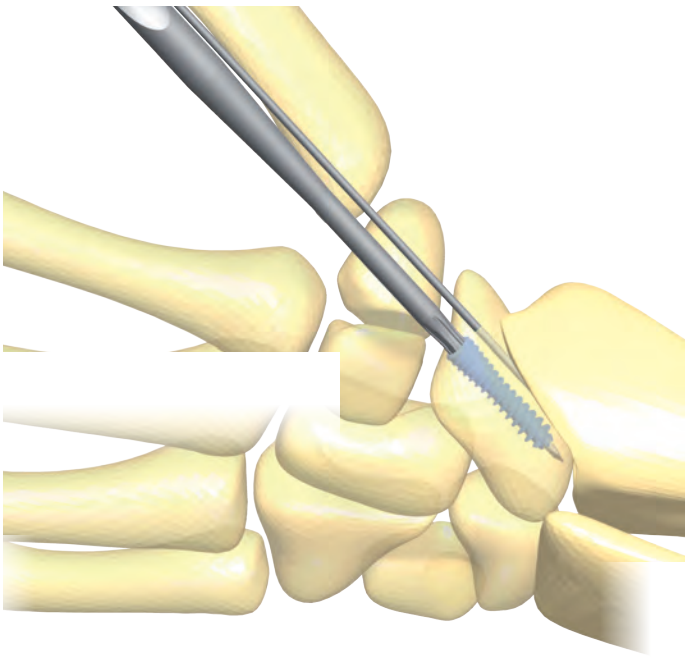
3.6 | Pre-drilling for the Helezonic screw

In case of harder bone structure patients pre-drilling might be needed. Like the conical reamer, the reamer can also be used by hand and power as per point 3.5. For preparing the core hole use the 3.5 mm reamer. Use image intensifier control for reaming along the Kirschner wire until the appropriate depth. In case of appropriate bone structure the pre-drilling can be omitted.



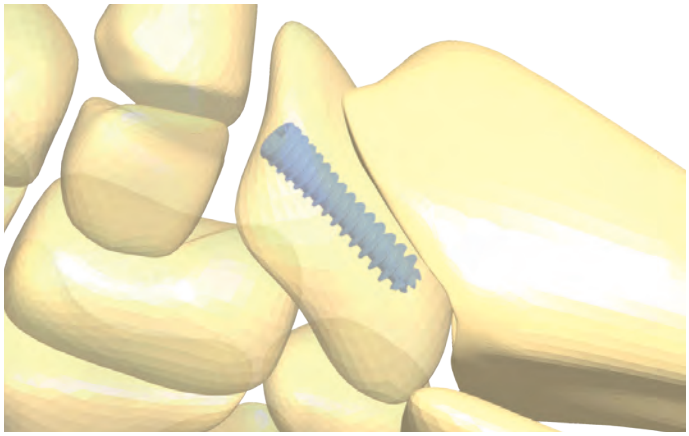
3.7 | Driving in the screw

Drive the chosen screw along the Kirschner wire to the already prepared place. Pay attention that the screw shall fully sink into the bone and shall not interfere with any soft tissues or the joints.
The screw can be driven by power as well. Use the quick connecting screwdriver and pay extra attention to avoid any injuries deriving from this sort of insertion.



3.8 | Removal of Kirschner wires

Remove the Kirschner wires and close the wound.

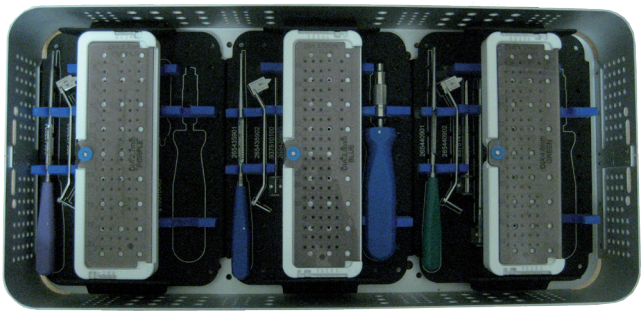


4 | Implant list

4.1 | Helezonic screw Ø2.7 mm

Anodised Titanium

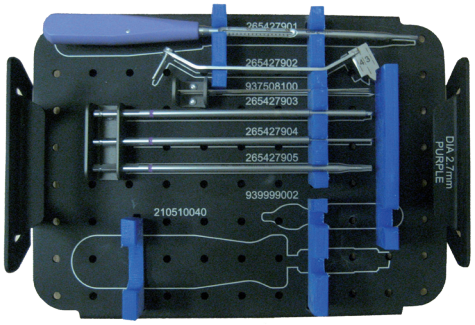
Cat. no.	Length (mm)
1014427008	8
1014427010	10
1014427012	12
1014427014	14
1014427016	16
1014427018	18
1014427020	20
1014427022	22
1014427024	24
1014427026	26
1014427028	28
1014427030	30

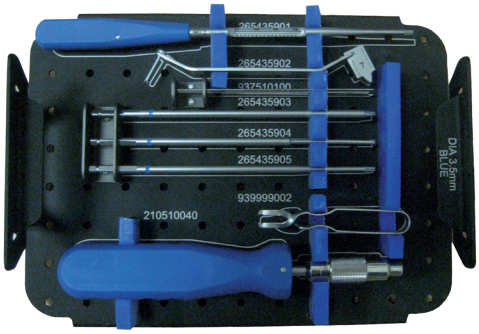


4.2 | Helezonic screw Ø3.5 mm

Anodised Titanium

Cat. no.	Length (mm)
1014435016	16
1014435018	18
1014435020	20
1014435022	22
1014435024	24
1014435026	26
1014435028	28
1014435030	30
1014435035	35
1014435040	40
1014435045	45
1014435050	50

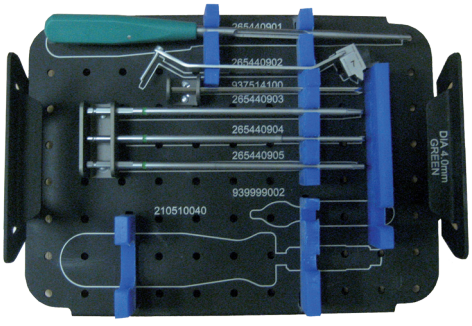




4.3 | A-Spire screw Ø4.5 mm

Anodised Titanium

Cat. no.	Length (mm)
265440020	20
265440022	22
265440024	24
265440026	26
265440028	28
265440030	30
265440035	35
265440040	40
265440045	45
265440050	50
265440055	55
265440060	60
265440065	65
265440070	70



5 | Instrument list

5.2 | Instruments

Quick-connecting Hilt - AO

5210510040

Screw tweezers

5939999002

2.7 mm technique

Screwdriver (TA 7)

5265427901

Drill sleeve (0.8 mm)

5265427902

Conical reamer (2.7 mm)

5265427903

Fraise (2.7 mm)

5265427904

Quick-connecting screwdriver (TA 7)

5265427905

Kirschner boring wire (0.8x100 mm)

5937508100

3.5 mm technique

Screwdriver (TA 9)

5265435901

Drill sleeve (1 mm)

5265435902

Conical reamer (3.5 mm)

5265435903

Fraise (3.5 mm)

5265435904

Quick-connecting screwdriver (TA 9)

5265435905

Kirschner boring wire (1x100 mm)

5937510100

4.5mm technique

Screwdriver (TA 10)

5265440901

Drill sleeve (1.4 mm)

5265440902

Conical reamer (4.5 mm)

5265440903

Fraise (4.5 mm)

5265440904

Quick-connecting screwdriver (TA 10)

5265440905

Kirschner boring wire (1.4x100 mm)

5937514100

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