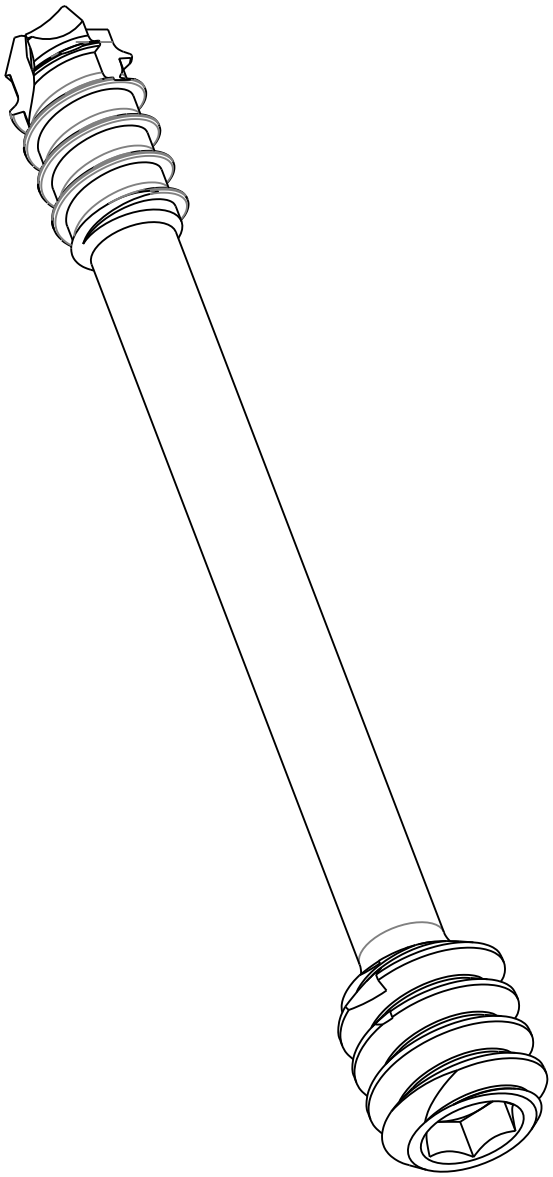
zimed®

Cannulated

HERBERT SCREW

Surgical Technique



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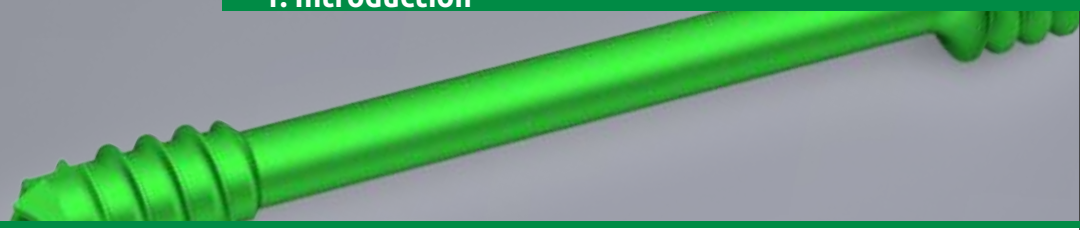
HERBERT SCREWS
Surgical Technique

Contents

zimed®

ISO 9001
ISO 13485
CE 1984

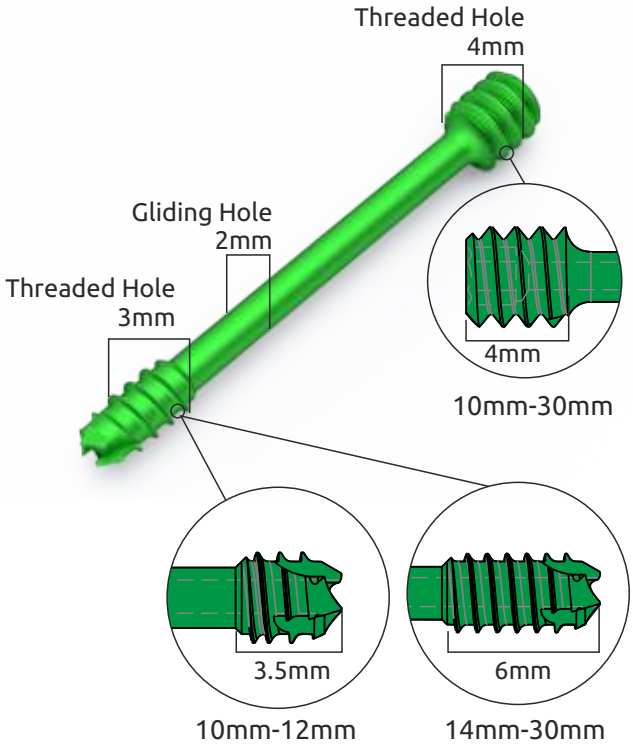


1.1 Specifications

1.1.1 Cannulated Herbert Screw

3mm and 3.5mm Herbert Screws are intended for fixation of intra-articular and extra-articular fractures and nonunions of small bones and small bone fragments; arthrodeses of small joint; bunionectomies and osteotomies, including scaphoid and other carpal bones, metacarpals, tarsals, metatarsals, patella, ulnar styloid, capitellum, radial head and radial styliod.

manufactured from titanium alloy manufactured according to ASTM F136.



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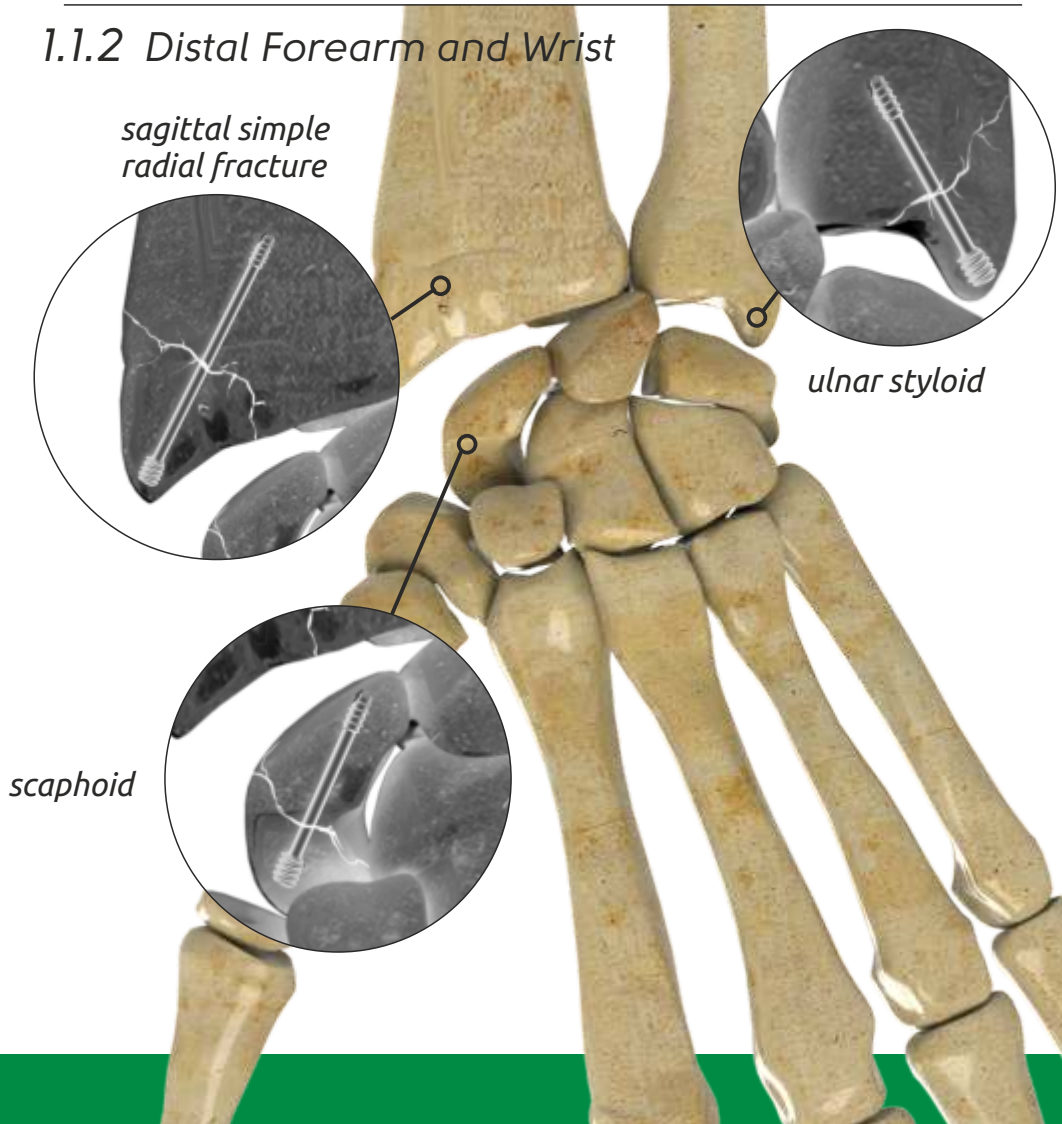
Herbert Screw

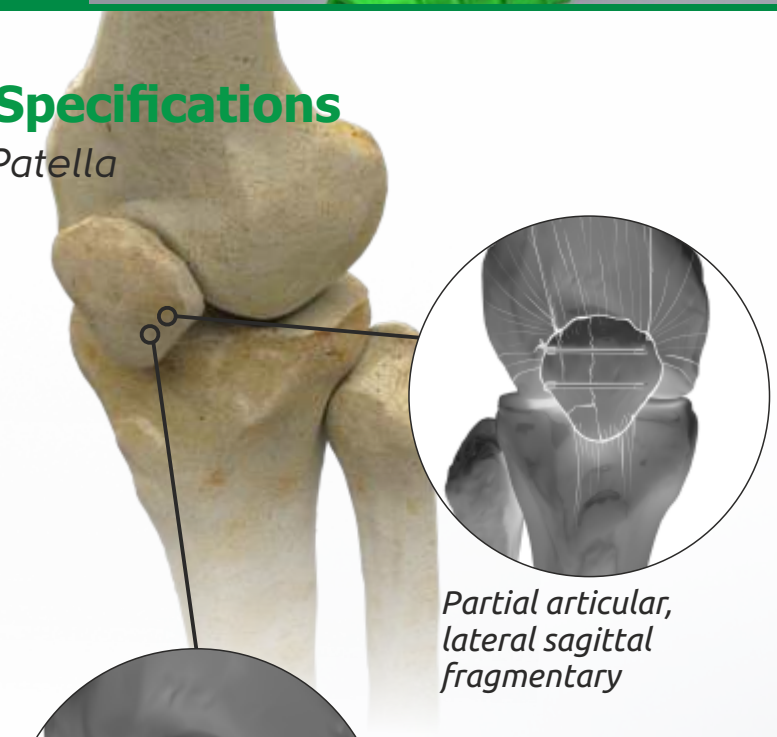
REF. NO	LENGTH (mm)
2172-0010	10
2172-0012	12
2172-0014	14
2172-0016	16
2172-0018	18
2172-0020	20
2172-0022	22
2172-0024	24
2172-0026	26
2172-0028	28
2172-0030	30

1.1.2 Distal Forearm and Wrist

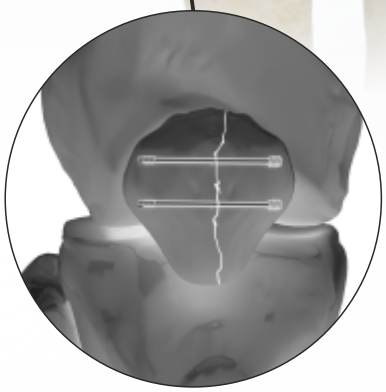


1.1 Specifications

1.1.3 Patella



Partial articular, lateral sagittal fragmentary



Partial articular, Medial sagittal

1.1.4 Metatarsal

Base intraarticular

long oblique diaphyseal fractures

intraarticular oblique

2.1.Approach

2.1.1 Palmar approach

The palmar approach to the scaphoid provides access to displaced wrist fractures that cannot be reduced and corrected by percutaneous techniques. *(Fig.1-2)* The palmar approach facilitates the intervention of fractures from the middle part of the schapoid to the proximal (Vascular Blood flow). For the distal end of the scapoid, it is necessary to approach from the dorsum.

Fig.1

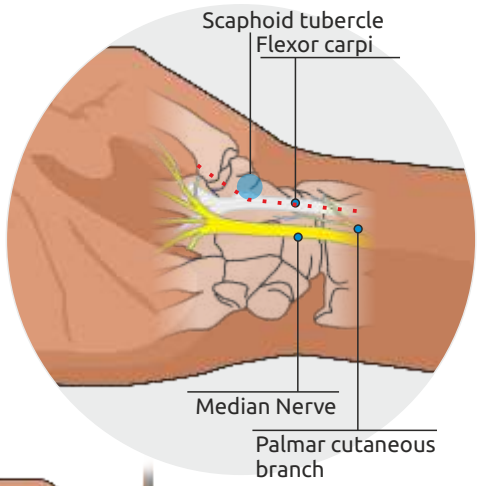
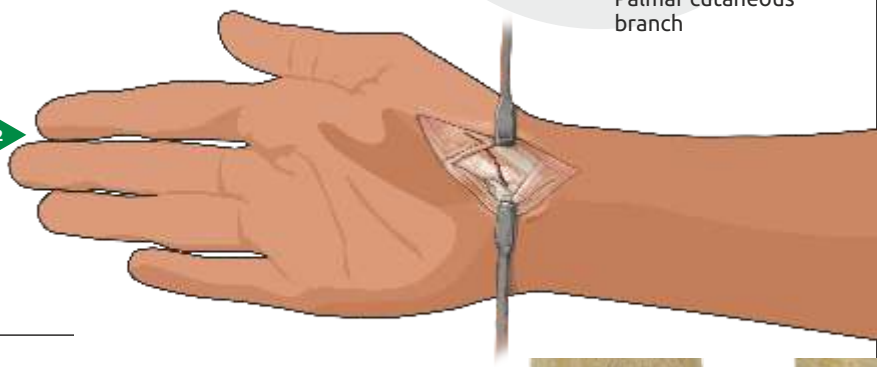


Fig.2



2.2.Fracture

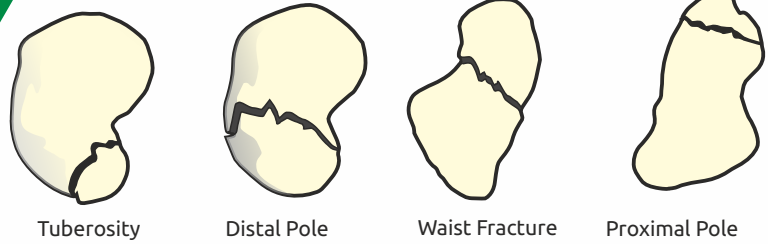
2.2.1.Scaphoid

It is one of the 8 carpal bones in the wrist. Most of it consists of bone cartilage and its shape makes fixation difficult.

Fractures from the waist to the proximal require more care. Since there is vascular nutrition towards the proximal pole, fractures in the proximal place at risk of avascular necrosis if not corrected with appropriate treatment methods.

Mismanaged fractures can cause improper union and necrosis of the proximal end of the bone, resulting in instability of the wrist joint.

Fig.3

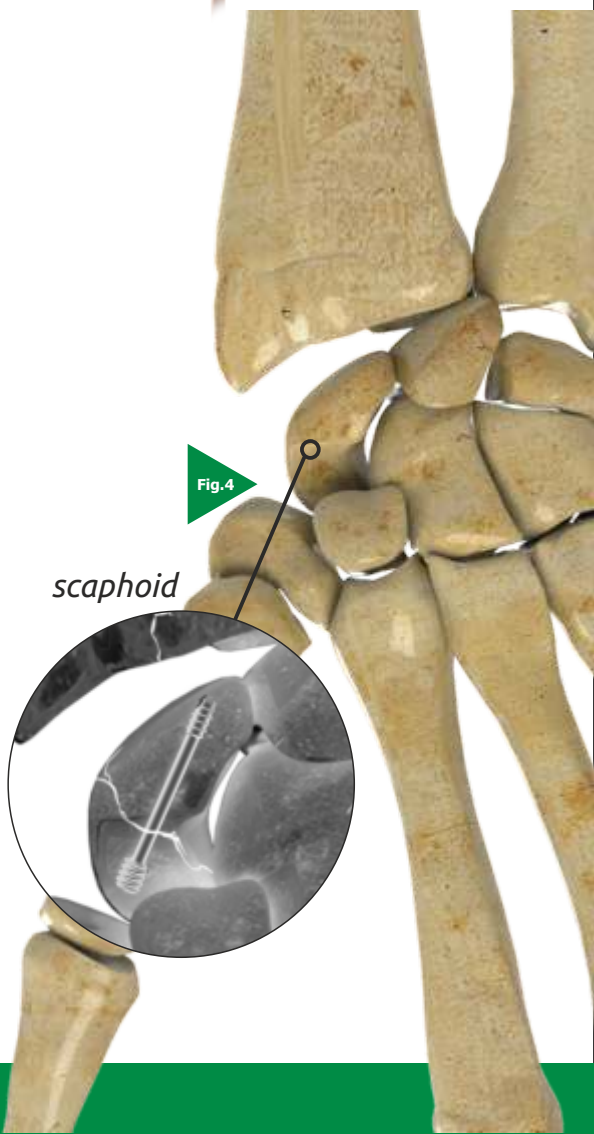


When internal fixation is used, bone healing occurs faster than non-surgical treatment and the postoperative period of movement is shortened.

Displacement of a scaphoid fracture in any direction requires internal fixation. These types of fractures are usually seen as displaced fractures.

Most of these fractures are transverse. Some fractures may be oblique in the horizontal or vertical plane.

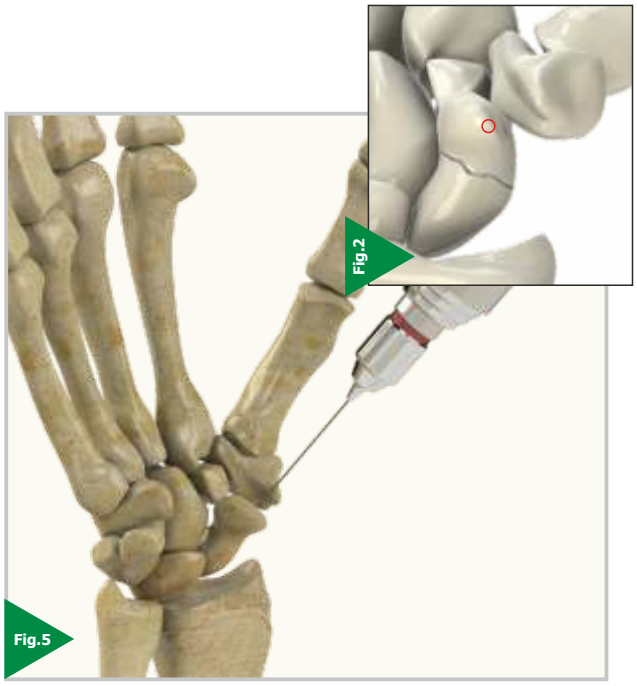
Fig.4



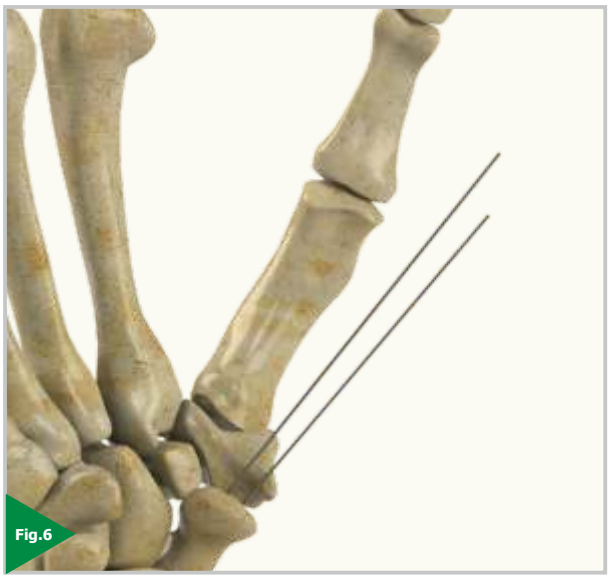
2.3.Ø3.0 Cannulated Herbert Screw

2.3.1 Kirschner Wire

Small pointed forceps can be used for reduction.



The entry point is determined. Kirschner wire is sent for temporary fixation. It should be installed in such a way that it does not prevent the entry of the screw to be sent from the entry point.



A second Kirchner wire is sent to the designated screw entry point for guiding purposes.

The drill guide is placed

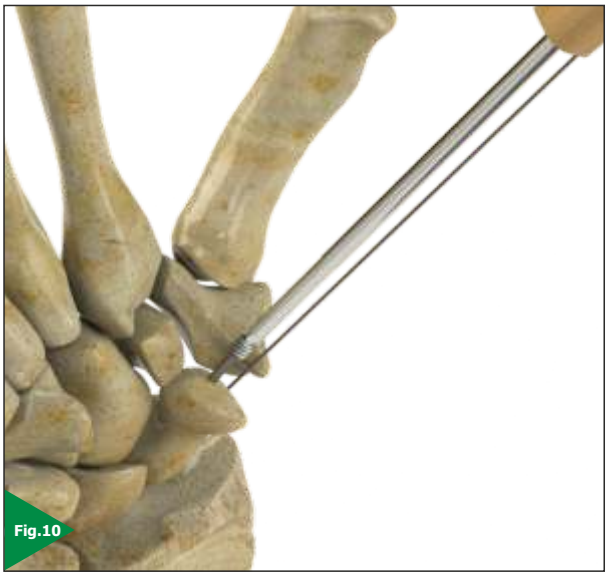
2.3.Ø3.0 Cannulated Herbert Screw

2.3.2 Drilling and Determine Screw Lenght

Drilling is done.

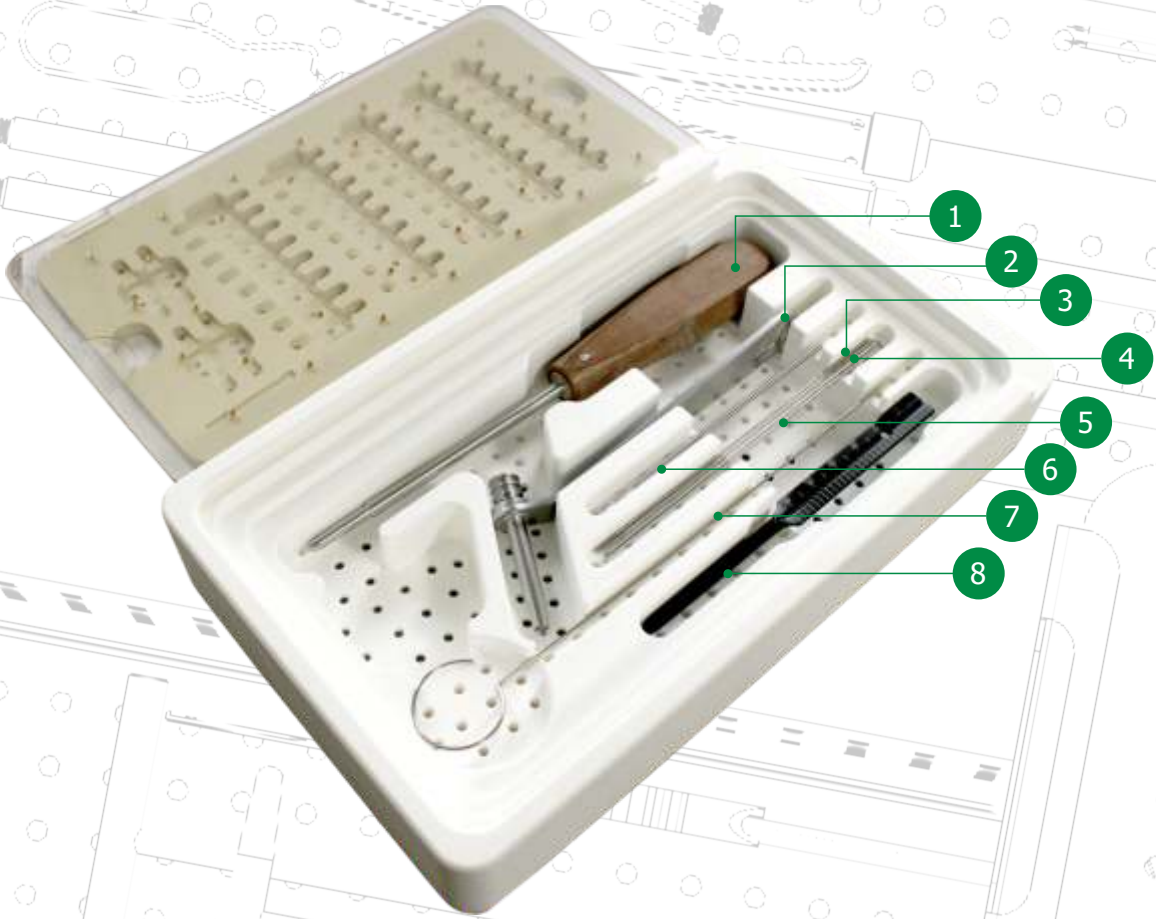
Screw length is determined over the guide wire.

2.3.3 Screw and Finish



Screw is sent to the bone.

Guide wires are removed. The screw should be sent as perpendicular to the fracture as possible.



1	9217-0001	Cannulated Screwdriver 2 mm
2	9217-0006	Drill Guide
3	9217-0008	Threadless Kirschner Wire Ø 1 x 120 mm
4	9217-0007	Kirschner Guide Ø 2.5 / 1.4
5	9217-0004	Threaded Guide Wire Ø 1 x 120 mm
6	9217-0005	Cannulated Drill Ø 2 x 100 mm
7	9217-0003	Cleaning Guide Wire Ø 1 x 160 mm
8	9217-0002	Depth Guide

4.1 DEVICE CLEANING CONDITIONS

Do not use metal brushes or rubbing pads during Decontamination of the tools should be performed immediately after the surgical procedure is completed. Contaminated tools must not be allowed to dry before reprocessing.

Excessive blood or debris must be removed in order to prevent the drying on the surface. All users must be qualified staff with documented evidence of training and competence. Training should include the current guidelines, standards and hospital policies. Even if they are made of high-grade stainless steel, the surgical tools must be thoroughly dried in order to prevent rust formation. Prior to sterilization, all the tools should be examined for the cleanliness of the lumens of the joints of the surfaces. manual cleaning process. Use cleaning agents with low-foam surfactant to be able to see the tools in the cleaning solution. Rinse the cleaning materials easily from the tool in order to prevent residue formation.

Mineral oil or silicon lubricants should not be used on Zimed tools. Neutral pH enzymatic and cleaning materials are recommended for cleaning the reusable instruments. It is very important to neutralize and rinse the alkaline cleaning materials thoroughly from the tools. Anodized aluminum should not contact with certain cleaning or disinfectant solutions. Avoid strong alkaline cleaners and disinfectants and solutions containing iodine, chlorine or certain metal salts.

4.1.1 Manual Cleaning/Disinfection

Prepare the enzymatic and cleaning materials at the dilution rates and temperatures as recommended by the manufacturer. New solutions should be prepared when the existing solutions are heavily contaminated. Place the tools in the enzymatic solution so that they are completely immersed. Operate all the movable parts so that the detergent contacts with all the surfaces.

Keep in the fluid for minimum 20 min. Use a nylon, soft-bristled brush to gently rub the tools until all visible debris is cleaned. Pay particular attention to the accessible areas and use a suitable bottle brush. In order to remove the dirt in the open springs, coils or flexible parts, wash the recesses with plenty of cleaning solution. Rub the surface with a scrubbing brush to remove all the visible dirt from the surface and the recesses. To ensure that all the recesses are cleaned, turn the component while rubbing. Remove the tools and rinse them for minimum 3 min. under running water. Pay particular attention to the cannulas and use a syringe to pass the fluid through the hard-to-reach areas. Place all the tools that are completely immersed in water, in an ultrasonic unit containing teh cleaning solution. Operate all the movable parts so that the detergent contacts with all the surfaces. Expose the tools to sonification process for minimum 10 min..

Remove the tools and rinse with deionized water for at least 3 minutes or unless all the blood or dirt traces are eliminated in the rinsing water. Examine the tools under normal light to verify that visible dirt is removed. If visible dirt is present, repeat the above mentioned sonification procedure and the rinsing steps. Remove the excessive moisture on the tool with a clean, absorbent, lint-free cloth.

4.1.2 *Combination Manual / Automated Cleaning and Disinfection*

Prepare the enzymatic and cleaning materials at the dilution rates and temperatures as recommended by the manufacturer. New solutions should be prepared when the existing solutions are heavily contaminated. Place the tools in the enzymatic solution so that they are completely immersed. Operate all the movable parts so that the detergent contacts with all the surfaces. Keep in the fluid for minimum 10 min. Use a nylon, soft-bristled brush to gently rub the tools until all visible debris is cleaned. Pay particular attention to the accessible areas and use a suitable bottle brush. A sonicator will help to clean the instruments thoroughly. The use of a syringe or a water fountain will facilitate passing of the liquid from the low-spaced areas and difficult-to-access areas. Remove the tools from the enzyme solution and rinse them for minimum 1 min. under deionized water. Place the tools in a suitable washer / disinfector basket and perform a standard washer / disinfector cycle. Specific minimum parameters are essential for a complete cleaning and disinfection. These parameters are given in a below mentioned table.

4.1.3 *Automated Cleaning and Disinfection*

Automated washing / drying systems are not recommended as the only cleaning method for surgical tools. An automated system can be used as a follow-up operation after manual cleaning. To ensure an effective cleaning, tools must be thoroughly examined before sterilization. For detailed information on Washing and Disinfection see

Specific minimum parameters used for a complete cleaning and disinfection:

	Definition
1	Pre-washing for 2 minutes with cold tap water
2	enzyme sprey for 20 seconds with hot tap water
3	Immersion in enzyme after 1 minute
4	rinsing for 15 seconds with cold tap water (Should be repeated twice)
5	Washing with detergent for 2 minutes with hot tap water
6	rinsing for 15 seconds with hot tap water
7	Rinsing with 10 seconds with optional lubricated purified water
8	Drying for 7 minutes with hot air

Note: Follow the isntruction of the washer/disinfector manufacturer

● *Zimed Medical, as the manufacturer of this device, and their surgical consultants do not recommend this or any other surgical technique for use on a specific patient. The surgeon who performs any implant procedure is responsible for determining and utilizing the appropriate techniques for implanting the device in each individual patient. Zimed and their surgical consultants are not responsible for selection of the appropriate surgical technique to be utilized for an individual patient.*

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