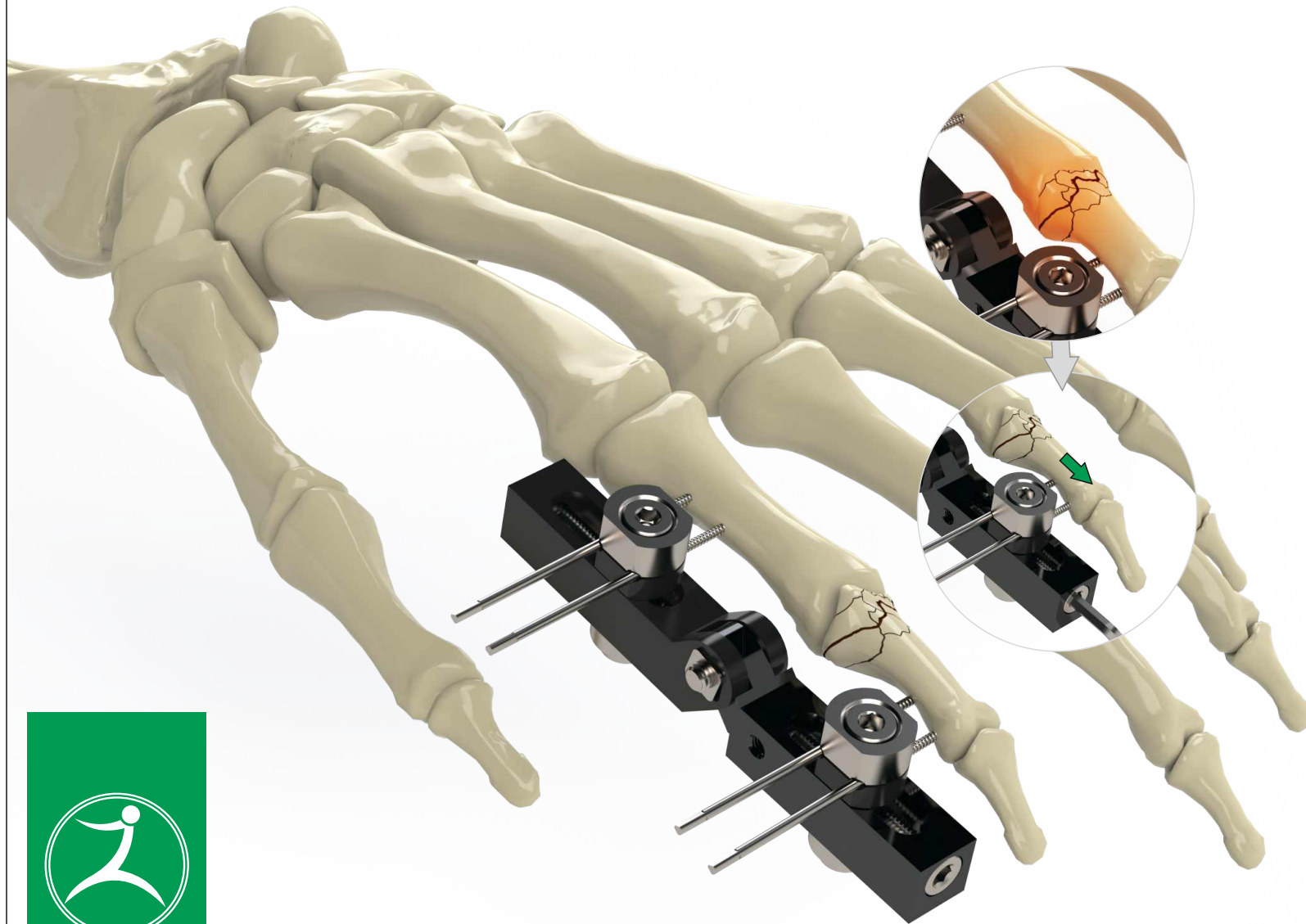
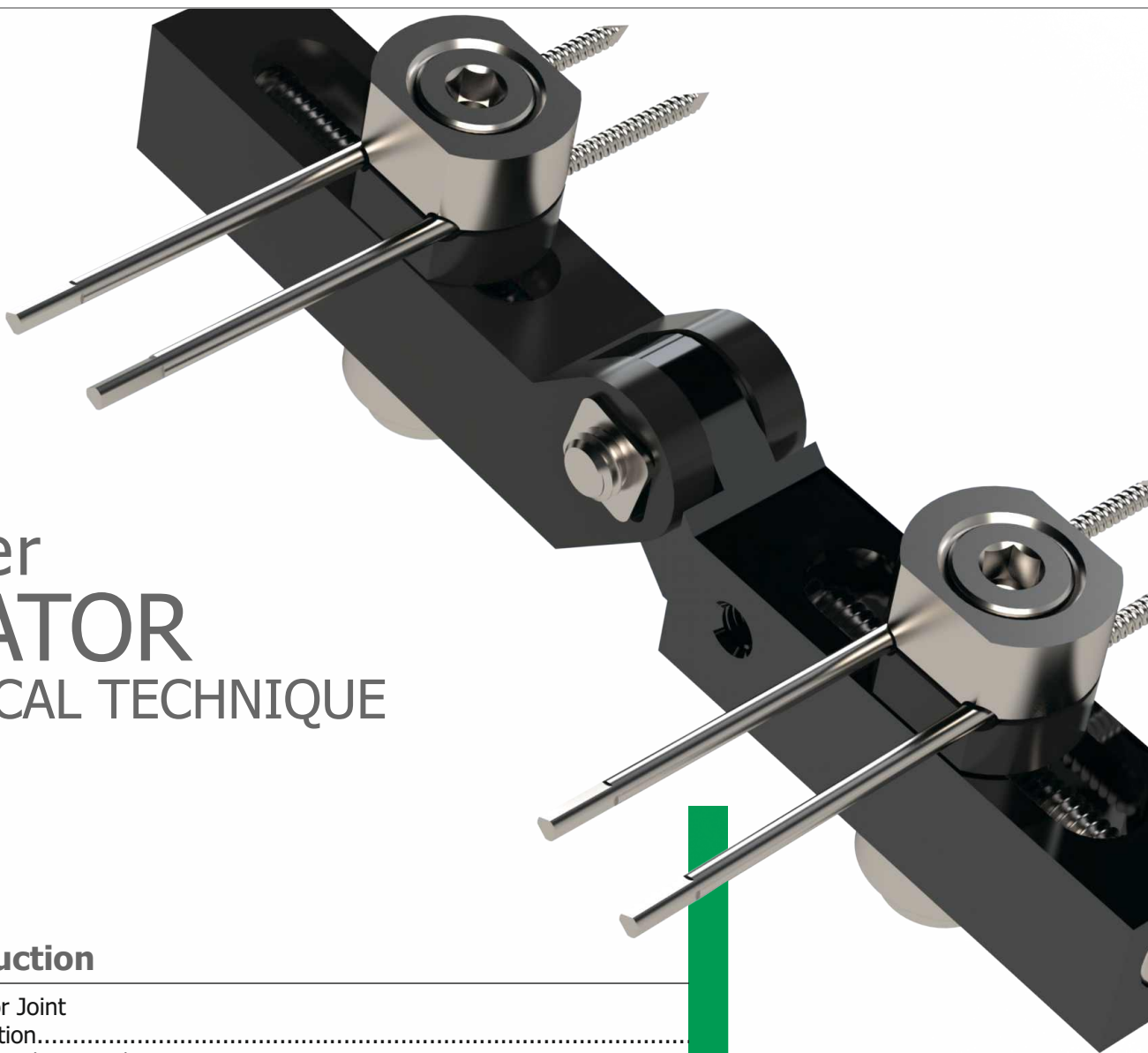


## Finger FIXATOR SURGICAL TECHNIQUE





# Finger FIXATOR

## SURGICAL TECHNIQUE

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**zimed®**

ISO 9001:2015  
ISO 13485:2016

**CE** 1984



## 1. Introduction

### Finger FIXATOR

## 1.1 Specification

### 1.1.1.Finger Fixator Joint

#### Finger(Joint) FIXATOR

**zimed**<sup>®</sup>

REF. NO

5084-0000

Finger Fixator is used for fixation of fractures in finger joint. It provides the advantage of being able to move from the center of the fixator and having a distraction unit, so it can be used in the treatment of joint dislocations and fractures (*Fig. 1*). It is available as a single type. It is made using aluminum and stainless steel materials. Aluminum materials are suitable for anodizing.

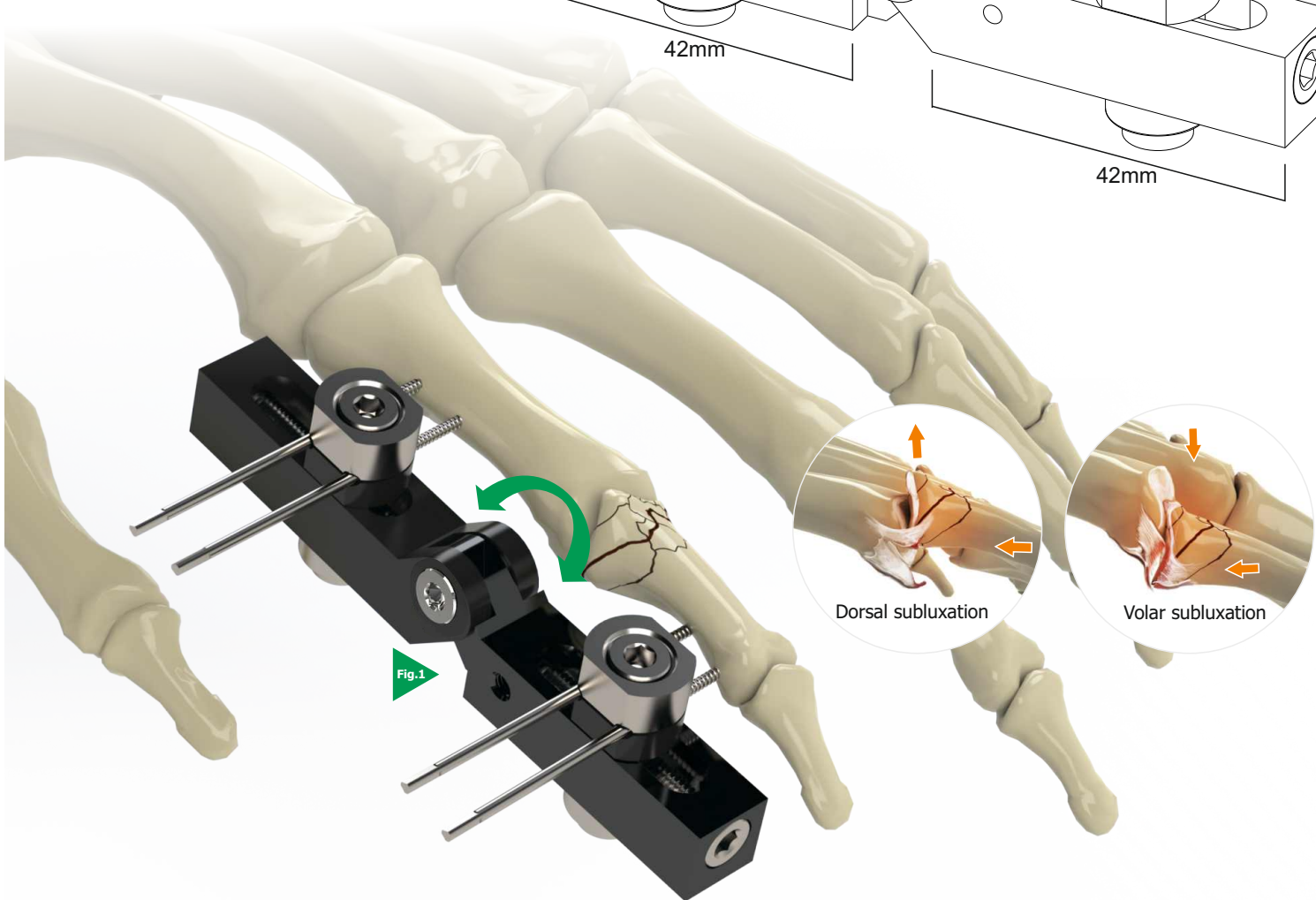
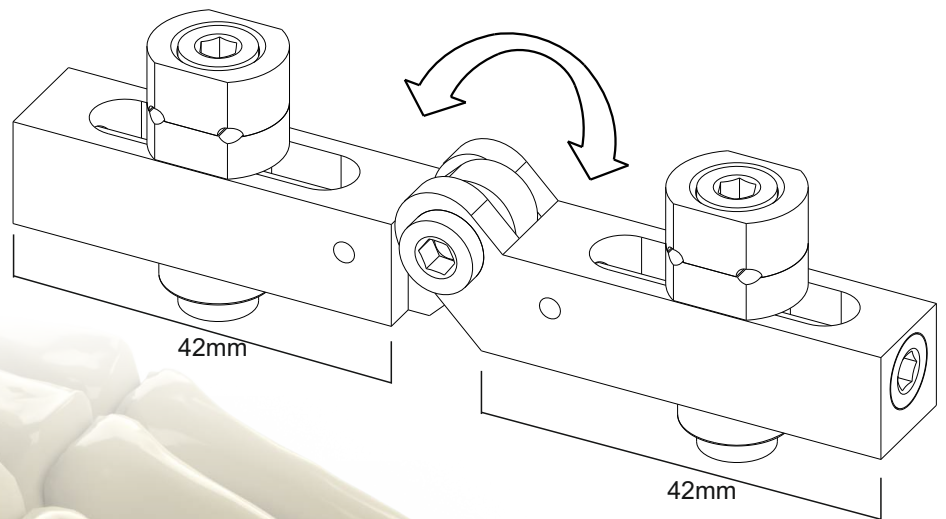


Fig.1



## 2.1 Fracture

### 2.1.1. Dislocation

While hand dislocations mostly occur as a result of traumas such as sports injuries and simple falls, wrist dislocations occur after high-energy traumas and may be a part of multiple trauma. Dislocations of these joints should be considered as a whole and possible injury to ligaments, tendons, and broken parts should be carefully evaluated. Treatment should be done as early as possible, in cases where reduction cannot be achieved with closed methods, surgical treatment should be applied, and methods that allow early movement should be preferred in order to regain functions.

Dislocations of the hand region can be seen as DIP *distal interphalangeal joint dislocations*, (PIP) *proximal interphalangeal joint dislocations*, Dorsal Pip and Volar Pip Lateral Pip dislocations. There are also distinctive fractures of the metacarpal.

In this Surgery, Proximal Interphalangeal joint injuries and its adaptation to this type of injury will be demonstrated *Finger Fixator (Joint)* product has been applied.



### 2.1.2. The Proximal Interphalangeal Joint

The proximal interphalangeal joint (PIP) is a hinge-type joint located between the middle phalanx and the proximal phalanx. This type of dislocations usually occurs with vertical loading in hyperextension and can often be seen in young athletes engaged in collective sports. Anteroposterior, lateral and oblique radiographs are evaluated to determine which direction the dislocation is and whether it is accompanied by a fracture. PIP joint dislocations are divided into three as dorsal, volar and lateral. Each dislocation type has its own mechanism of injury and accompanying soft tissue damage. Dorsal dislocations are most common. In dorsal dislocations, the middle phalanx is displaced dorsally, while in volar dislocations the palmar is displaced.

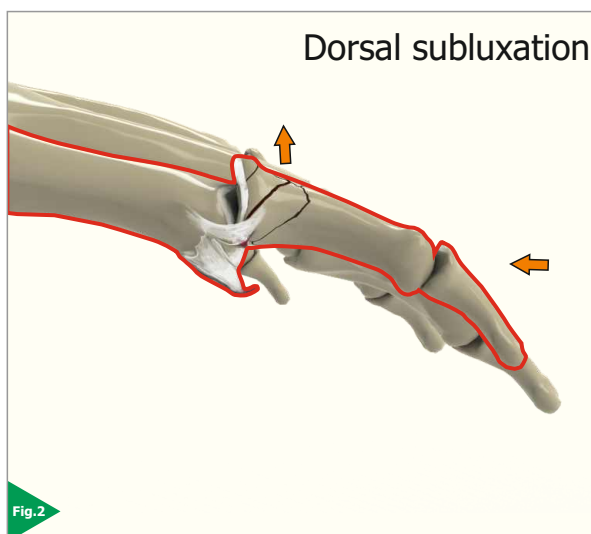


Fig.2

*This mechanism causes the collateral ligaments to rupture from the proximal and distal attachment of the volar plate. (Fig.2)*

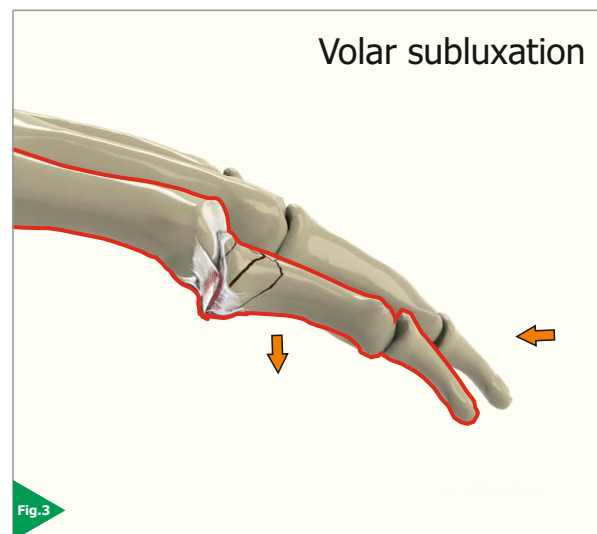


Fig.3

*Volar dislocations are less common than dorsal and lateral dislocations. With direct volar translation, the central slip of the extensor mechanism breaks off or avulses from the dorsal lip; this is accompanied by rupture of one of the collateral ligaments (Fig.3)*





## 2.2 Fixator Attachment

### 2.2.1.Schanz

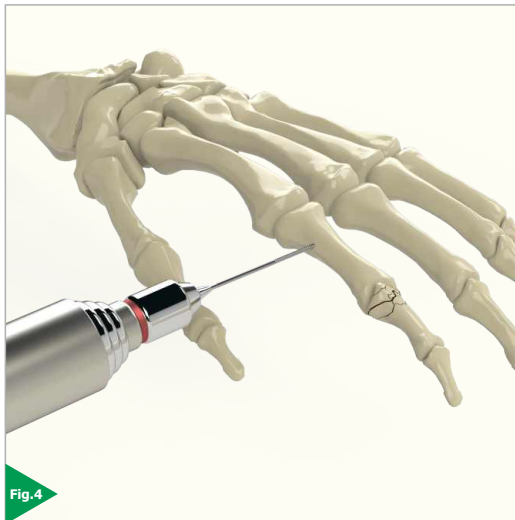


Fig.4

Send the first Schanz by surgical motor from the entry point you have determined. Schanz's that come with the kit have a self-drilling feature. (Fig.4)

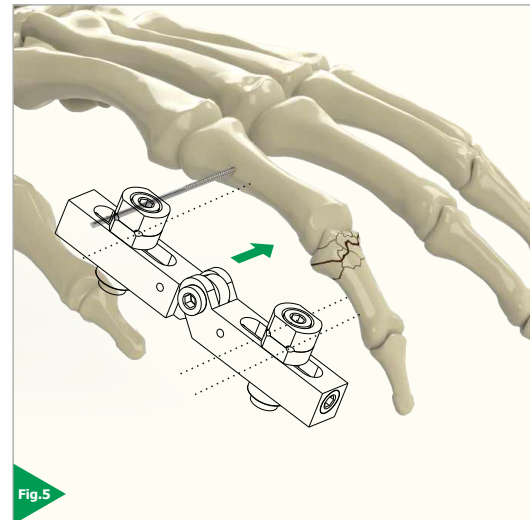


Fig.5

Attach the fixator on the first Schanz you sent. Send other Schanz via other clamps. In this way, you will be using the Fixator as a guide. Thus, it will be possible to determine the locations of the Schanz and to prevent the margin of error. (Fig.5)

### 2.2.2.Fixator Placement

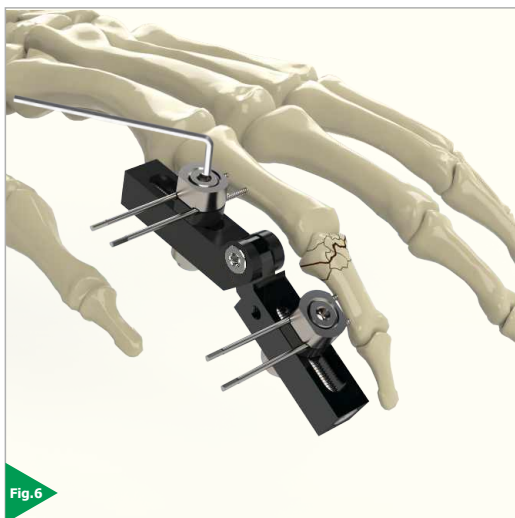


Fig.6

Use the L Allen included in the kit to fix the Schanz you sent. Fix the Schanz by tightening the Schanz tightening screw on the clamps. (Fig.6)

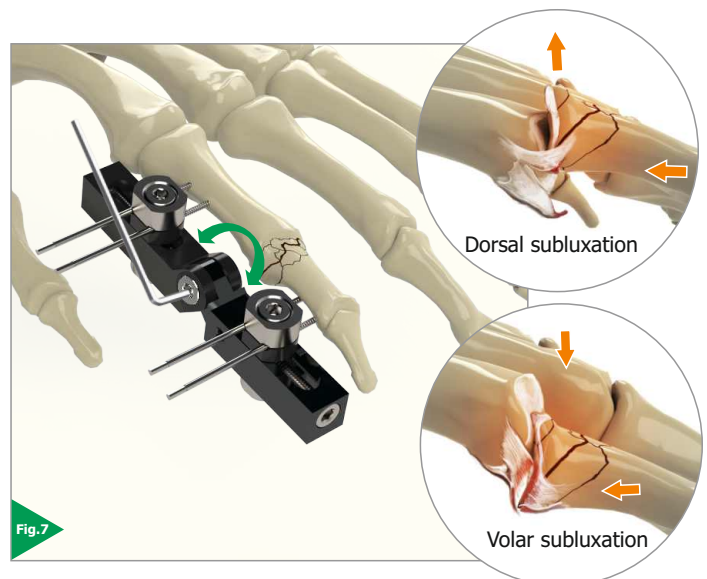


Fig.7

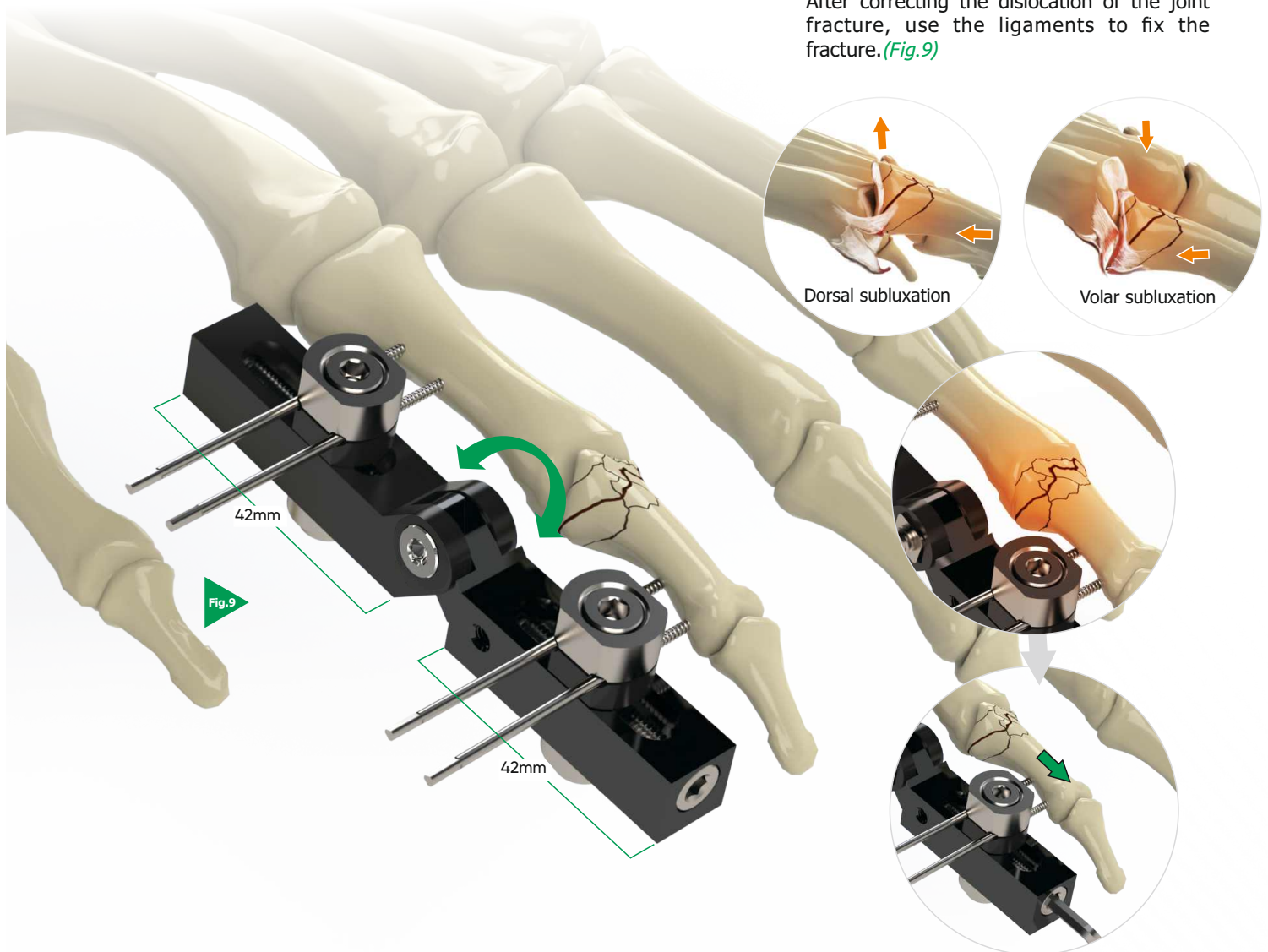
After making the adjustment, fix the moving area in the center of the fixator with L Allen. (Fig.7)



## 2.2 Fixator Attachment

### 2.2.3. Fixator Placement, Distraction

After correcting the dislocation of the joint fracture, use the ligaments to fix the fracture. (Fig.9)





### 3.1 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.

#### 3.1.1 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 the 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.

#### 3.1.2 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 / disinfectant basket and perform a standard washer / disinfectant cycle. Specific minimum parameters are essential for a complete cleaning and disinfection. These parameters are given in a below mentioned table.

#### 3.1.3 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 spray 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 instruction of the washer/disinfectant 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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