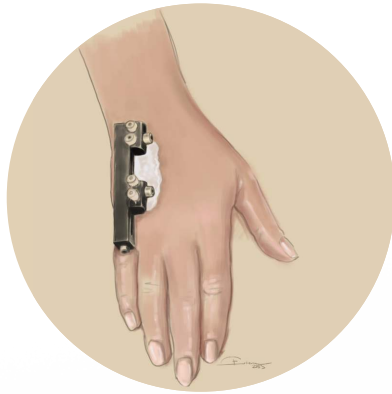
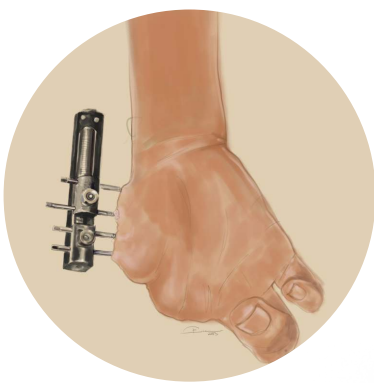


Lenghtener Finger FIXATOR

SURGICAL TECHNIQUE



Lenghtener Finger FIXATOR SURGICAL TECHNIQUE

Contents

1. Introduction

Lenghtener Finger Fixator

1.1 Specification.....

1.1.1.Lenghtener Finger Fixator.....

2.Surgical Technique

Lenghtener Finger Fixator

2.1 Bone Disase.....

2.1.1.Ulnar deficiency

2.1.2.Brachymetacarpia.....

2.2 Osteotomy&Fixator Attachment.....

2.2.1.Determines area and schanz.....

2.2.2.Osteotomy

2.2.3.Attaching fixator for lenghtening.....

3.Disinfection

3.1. Device Cleaning Conditions

3.1.1. Manual Cleaning/Disinfection.....

3.1.2. Combination Manual / Automated Cleaning

and Disinfection:.....

3.1.3. Automated Cleaning and Disinfection.....





1.1 Specification

1.1.1.Lenghtener Finger Fixator

Lenghtener Finger FIXATOR

zimed[®]

The Lenghtener Finger Fixator is used for fixation of fractures in the finger bones and for finger lengthening. It has 3 different length options as short, medium and long, and it is made using aluminum and stainless steel materials. Aluminum materials are suitable for anodizing.

REF. NO	SIZE
5084-0010	S
5084-0020	M
5084-0030	L

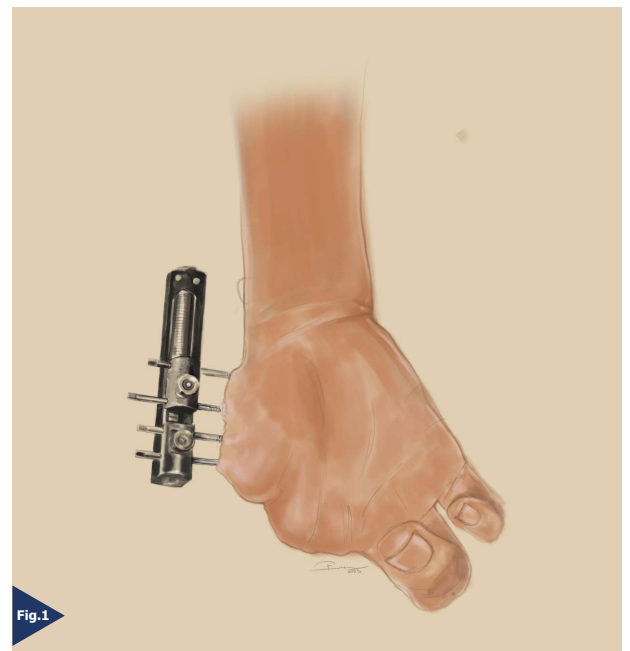




2.1 Bone Disease

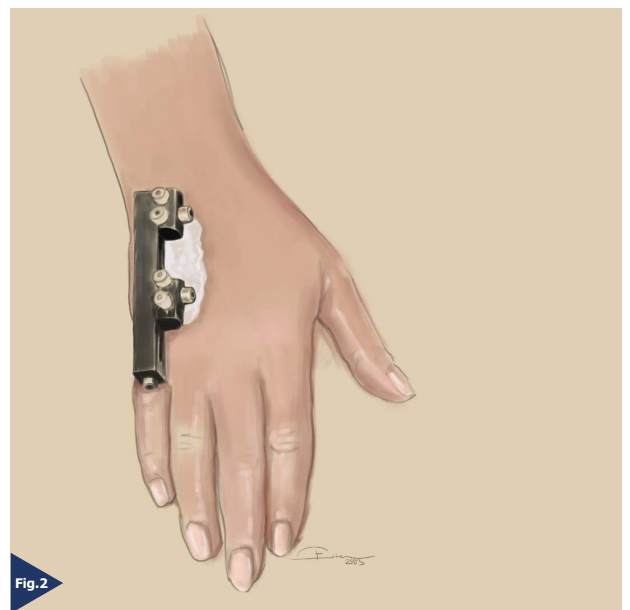
2.1.1.Ulnar deficiency

Ulnar deficiency is a congenital condition that affects the development of the ulna, one of the bones in the forearm. It can cause various deformities and functional impairments of the hand and wrist. The severity and treatment options depend on the degree of ulnar deficiency and its associated anomalies. (Fig.1)



2.1.1.Brachymetacarpia

Brachymetacarpia is a rare condition that affects the length of the metacarpal bones in the hand. The metacarpal bones connect the wrist to the fingers. When one or more of these bones are shorter than normal, it causes a shortened finger. This can affect the appearance and function of the hand. Brachymetacarpia can be present at birth or develop later due to other factors. The most common treatment is surgery to lengthen the affected bone. (Fig.2)



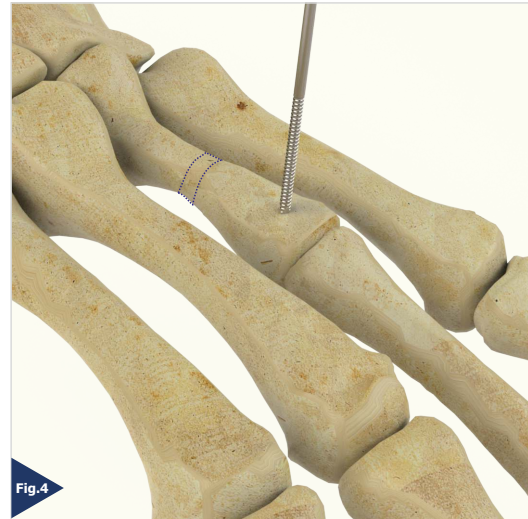


2.2 Osteotomy & Fixator Attachment

2.2.1. Determines area and schanz

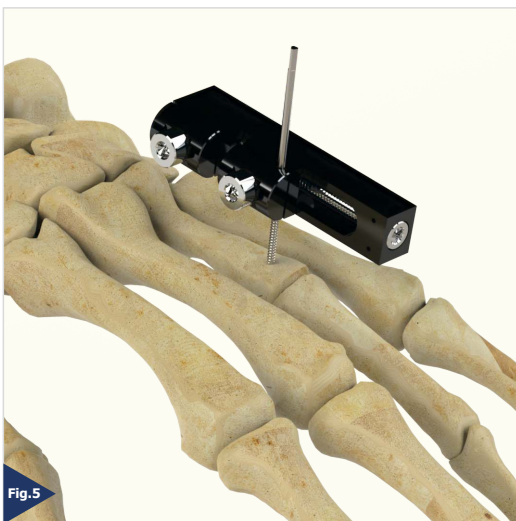


The area to be osteotomy is determined. (Fig.4)



Attaches with schanz surgical motor. (Fig.5)
Schanzes have got self drilling specification, there is no need to use drilling section

2.2.1. Determines area and schanz



Place one Schanz fixator that you attached in the previous step. At this stage, Fixator will act as a guide for the locations of other schanz to be installed (Fig.6)



Attach another Schanz. (Fig.7)



2.2 Osteotomy & Fixator Attachment

2.2.2. Osteotomy



Fig.7

The fixator used for guiding is removed for the osteotome. A cut is made for extension from the area whose location was determined in the previous stages. (Fig.7)

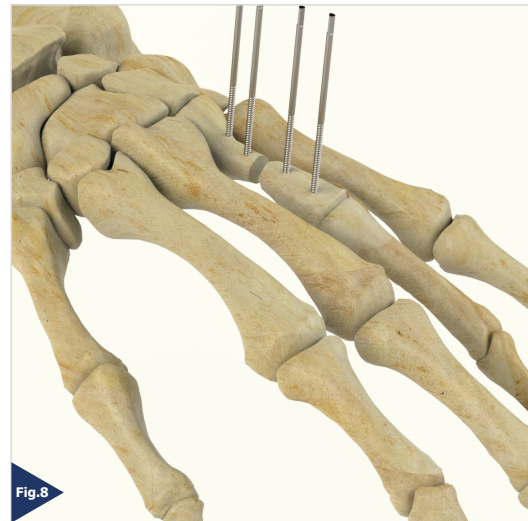


Fig.8

The cut was made and the piece was removed. The fixator can be installed again. (Fig.8)

2.2.3. Attaching fixator for lengthening

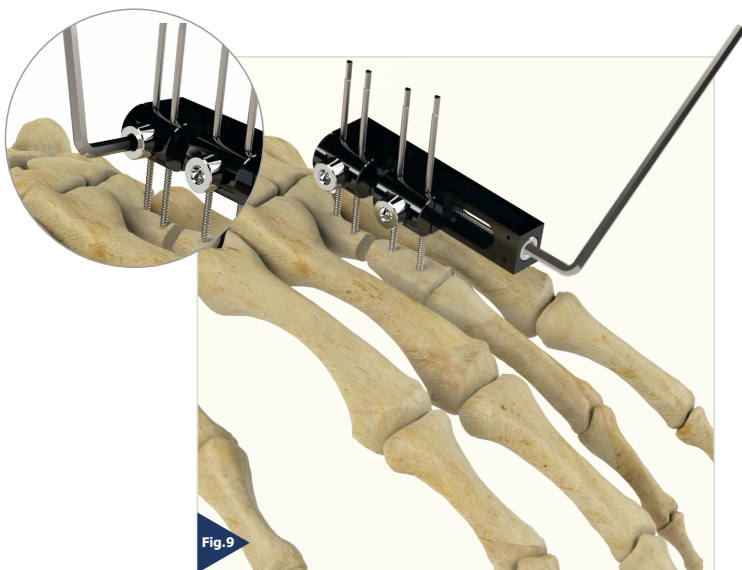


Fig.9

Fixator is reattached via Schanz. The clamps are tightened with the allen key. The extension is started by turning the Compression-Distraction unit a certain amount with the allen key. (Fig.9)

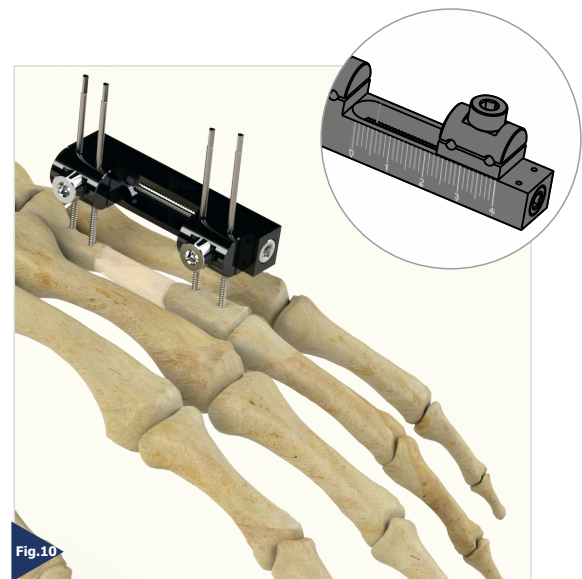


Fig.10

The necessary extension is made in stages over a certain period of time. The measurement chart on the fixator can be used for this. (Fig.10)

Do not forget to recheck the clamping of the clamps at the end of the procedure.



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

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

●  **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.  surgical consultants are not responsible for selection of the appropriate surgical technique to be utilized for an individual patient.