

Surgical Technique

HS 1.5 & HS 2.0 - MINI FRAGMENT SYSTEM

Hand and Foot System





Attention: Left & right versions of the item available

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Warning

This description does not suffice for immediate usage of the implants and instruments.

A briefing by a surgeon experienced in this field in the handling of these instruments is highly recommended.

This document provides information about the handling of HOFER implants and instruments.

This operation manual shall be considered as an addition and under no circumstances as a substitute to existing literature about surgical methods within orthopaedics and traumatology.

The content shall be regarded as a recommendation for a standardized procedure of how to apply the products without addressing the issues of any further necessary tasks, additional operative actions and possible extensions of the surgical technique.

The actual selection of the most suitable implant and its implantation method has to happen exclusively by the surgeon based on his education and the individual diagnostic findings.

All illustrations printed here have a purely symbolic character to support the description of the surgical technique and can vary.

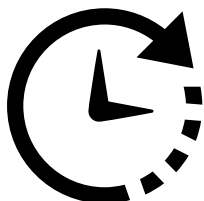
These operation instructions don't contain any details on the use of the instruments. Corresponding documents are available in the form of

- Usage instructions for instruments: intra- and postoperative handling
- Usage instructions for implants (each implant is enclosed)

Please ensure that the diagnosis and determination of the treatment plan are left up to the surgeon.



Hofer-medical gladly offers detailed training in safe handling and various surgical techniques.



Please contact our 24/7 service hotline:

Tel.: +43 (0)3382 53388

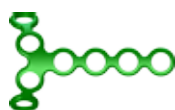
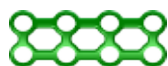
Mail: office@hofer-medical.com

The HS1.5 & HS2.0 Hofer System is a multi-directional and angle stable implant system for mini and small fragments based on the internal fixateur principle.

The HS1.5 & HS2.0 system is designed to meet epiphyseal, intra articular and shaft fractures of mini and, where applicable small, bones only.

All HOFER products result out of a joint development of experienced clinicians and our engineers. This successful cooperation results in providing products to meet the anatomical and functional requirements of the respective sites due to their anatomically pre-shaped low profile design and to provide an almost unrestricted operative treatment ranging from simple to comminuted fractures.

HS1.5 - Bone Plates as av



Compatible to HS1.5 & HS2.0 bone screws



Drill bit sizes for
 HS1.5 screws 1.1 mm
 HS2.0 screws 1.5 mm

Indications

- Osteosynthesis of small fragments of the hand and toes
- Osteotomy and arthrodesis for carpus and toes
- Akin Osteotomy
- Closing Wedge Osteotomy
- Weil Osteotomy

all indications depend on the anatomical situation

Contra Indications

- Infections or inflammations (acute, chronic, local)
- Derogated vascularization of the respective site
- Derogated bone support for proper implant fixation
- Possible or proven material sensitivity
- Patient with little to none compliance with respect to the obedience of post-operative rehabilitation advices
- Concerning further information on patient selection, please refer to the instruction manual for implants.

Position of Patient and Approaches

Patient Positioning:

- Hand: Standard
- Foot: Standard

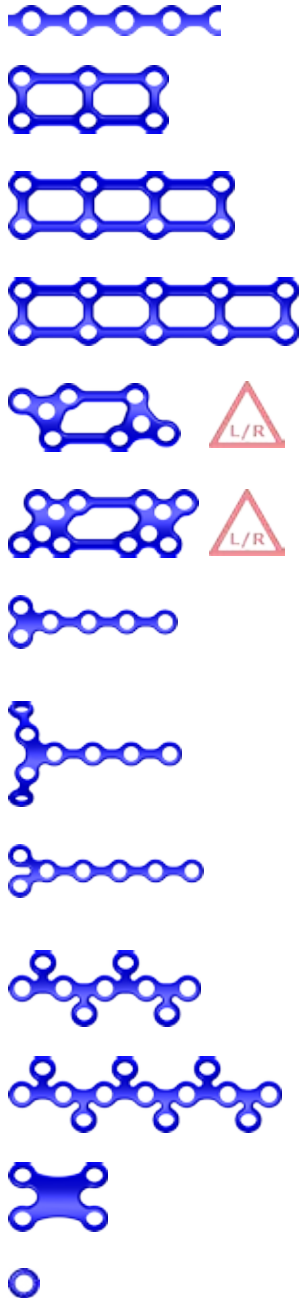
Approach:

Standard approaches for the respective site

Plate Specific Details

- Multiple screw placement options for each plate design
- All holes accept angle stable screws of both system sizes
- Pre-shaped, re-contouring possible - only between the holes
- Low profile design, minimal screw head overlap

HS2.0 - Bone Plates as av



Compatible to HS1.5 & HS2.0 bone screws



Drill bit sizes for
 HS1.5 screws 1.1 mm
 HS2.0 screws 1.5 mm

Indications

- Osteosynthesis of small fragments of the hand and foot skeleton
- Osteotomy and arthrodesis for hand, carpal and foot
- Subcapital fractures of the radial head
- Arthrodesis of the 1. MTP joint *
- Arthrodesis of the MT1 / C1 joint
- Chevron - Austin Osteotomy
- Akin Osteotomy
- Closing Wedge Osteotomy
- Weil Osteotomy

* depends on the anatomical situation

Contra Indications

- Infections or inflammations (acute, chronic, local)
- Derogated vascularization of the respective site
- Derogated bone support for proper implant fixation
- Possible or proven material sensitivity
- Patient with little to none compliance with respect to the obedience of post-operative rehabilitation advices
- Concerning further information on patient selection, please refer to the instruction manual for implants.

Position of Patient and Approaches

Patient Positioning:

- Hand: Standard
- Foot: Standard

Approach:

Standard approaches for the respective site

Plate Specific Details

- Multiple screw placement options for each plate design
- All holes accept angle stable screws of both system sizes
- Pre-shaped, re-contouring possible - only between the holes
- Low profile design, minimal screw head overlap

Implant

- Adjustment to the anatomical situation has to happen by means of shaping the plate with the bending pliers. Do not adjust the plate by means of the screws.
- A bicortical screw placement should be performed.
- It is important to pay attention to the correct orientation of the screws. It should not be more than +/- 10°.

4 - Using the HS1.5 & HS2.0 System

IMPORTANT:

Preparatory measures for the use of HOFER implants require a preparation as thorough as possible of the operation field. Nearby nerve fibers and blood vessels require a special caution.

Primary an adequate reduction of the anatomical structure also must have been carried out before HOFER implants are used.

4.1 - Insertion of Implant

After reducing and stabilizing the fractured zone the plate can be positioned. For this step no special insertion device is necessary. If necessary, a re-shaping of the plate can be performed.

For more details on bending plates please refer to:

- Instruction manual for handling the bending pliers

4.2 - Temporary Fixation

To temporarily fixate the plate, a K-wire can be placed directly through one of the available plate holes.

In this case the K-wires can additionally be used in a „joy-stick“ like fashion, if a further reduction of the respective fragments is required.

If pliers are used as temporary fixation an especially careful handling of the implant has to be considered. Scratches and impressions can impair the material severely.

4.3 - Orientation of Implant

The orientation of the implant is carried out according to the present anatomy.

4.4 - Screw Placement

The HS1.5 and HS2.0 System contains only angle stable and angle variable screws. The number of screws, their insertion site and direction has to happen based on the current situation.

Concerning drilling pilot holes for the screws please refer to:

- Instruction manual for handling the double drill guide

For measuring the pilot hole depth for determining the required screw length a depth gauge is to be used. For more details on hole depth determination please refer to:

- Instruction manual for handling the depth gauge

For more details on inserting screws please refer to:

- Instruction manual for handling the screwdriver: putting on screws
- Instruction manual for handling the screwdriver: screw placement

Wherever possible a bi-cortical screw placement is recommended.

4.5 - Removal of Temporary Fixation or Instruments

4.6 - Wound Closure

4.7 - Post-operative Treatment

The starting point for an early post-operative functional treatment has to depend on the fracture type and the intra-operatively achieved stability

4.8 - Material Removal

In case of a normal free function the surgeon in charge has to decide on the material removal from case to case. For the removal special attention has to be paid to a thorough exposure of the implants - especially of the torx connections.



Fig. 1: Case 1

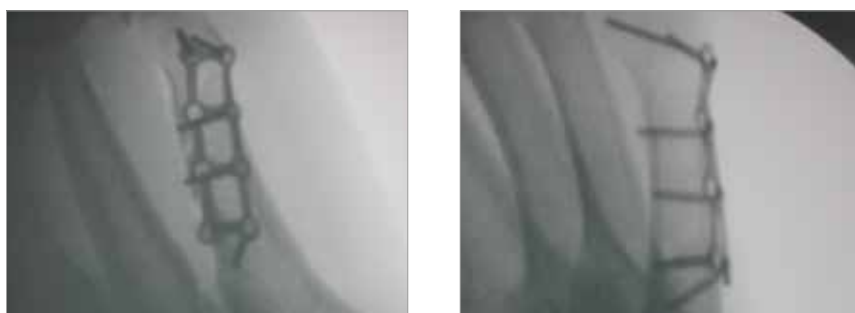


Fig. 2: Case 2



Fig. 3: Case 3



Fig. 4: Case 4

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The methods and practices, etc. quoted in this scripture have been carefully tested and verified. However, should errors or suggestions of improvement be apparent, despite said verification, we politely ask you to disclose them to us. The surgical method portrayed here merely presents one possible method for the indication that is to be treated. It remains the responsibility of the relevant surgeon to either keep to the aforementioned osteosynthetic method or to vary the method according to individual needs. Direct and indirect complications as well as sequential complications are thus, in every case, excluded.

Should you have any further questions, please do not hesitate to contact us at any time.



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creating partnership

For us, a partnership is the result of a long and happy relationship in all areas of our work. Reliable bone healing for patients, optimal handling of the systems for surgeons and surgical personnel, as well as the simple preparation of the instruments, constantly strengthen this partnership.

For us, "creating" means more than just finding solutions in the form of innovative products.

It is the result of high standards, constant development, innovative products and excellent service for patients, surgeons and surgical personnel around the clock.

Please do not hesitate to contact us if you have questions about our company, our employees or our production methods.

Your HOFER medical solutions Team