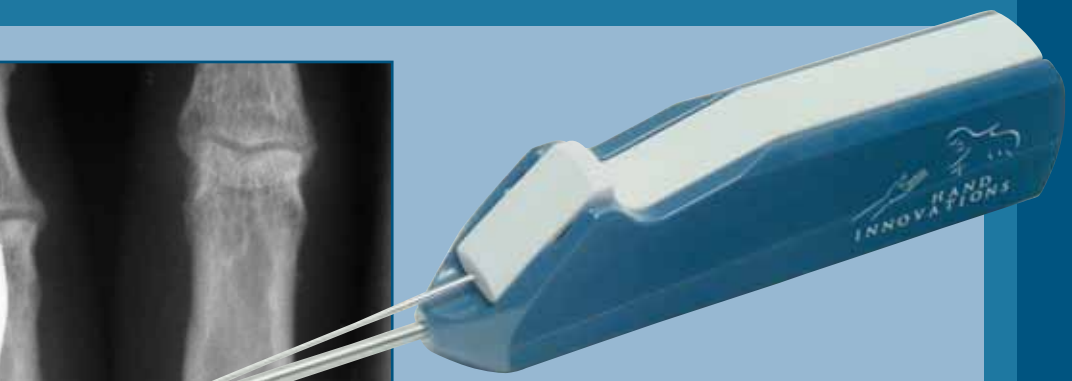
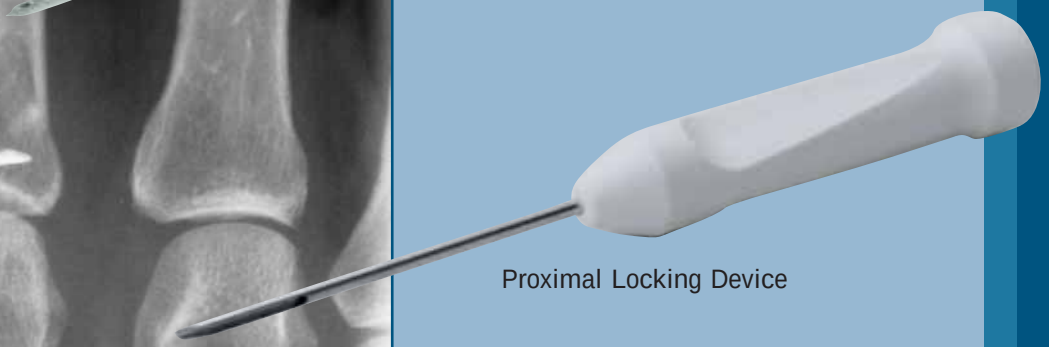
THE FIRST PERCUTANEOUS LOCKED FLEXIBLE INTRAMEDULARY NAIL SYSTEM FOR HAND FRACTURES



Intramedullary Nail & Slotted Awl



Proximal Locking Device

New Radio Opaque Soft Tissue Protection Cap

HAND
INNOVATIONS

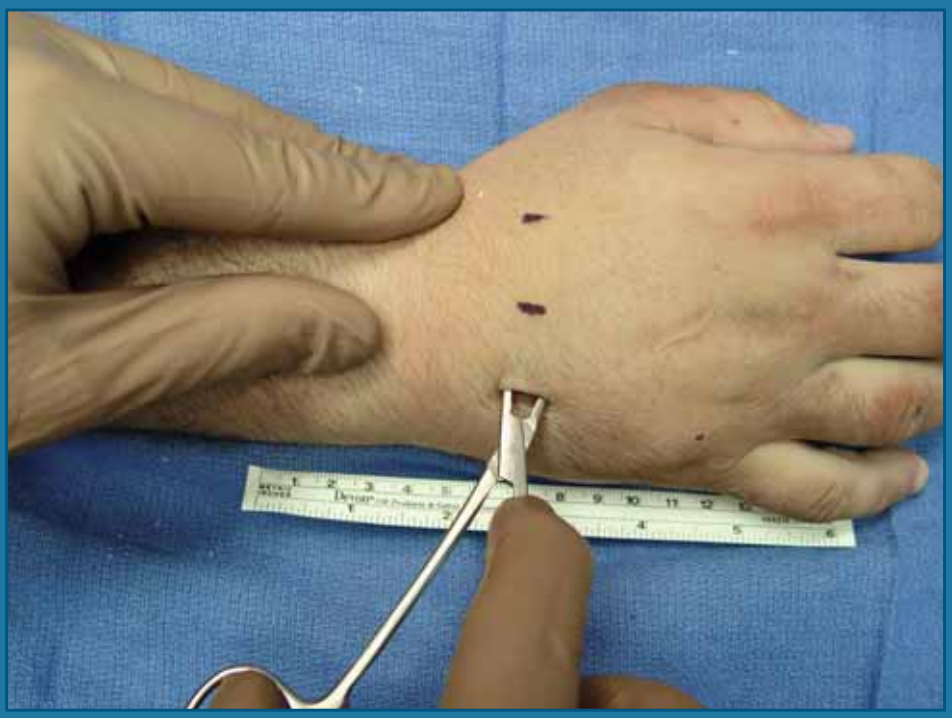
Pre Operative

Post Operative

Percutaneous flexible nail system for the hand

- Minimizes surgical dissection, fracture exposure and formation of dorsal hand scar
- Simple surgical technique
- Proximal lock stabilizes rotation and length
- Implantable nail cap allows early digital motion while avoiding soft tissue irritation

Improved results for Metacarpal fractures, minimized deformity, allows early function and increased patient satisfaction.



1. Surgical approach

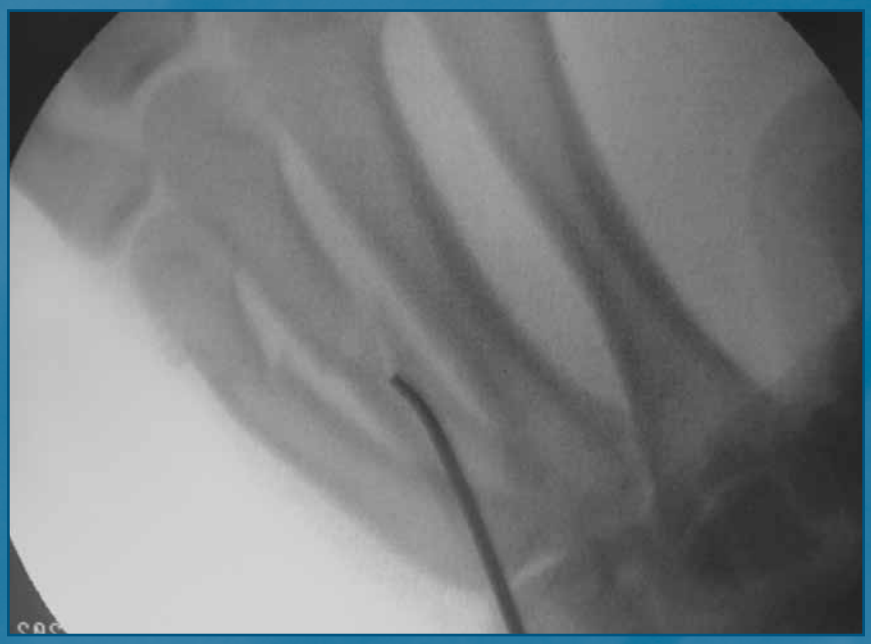
- A stab incision (<5mm.) is made overlying the metaphysis
- On metacarpals 2 and 5, the extensor tendons are easily avoided by approaching from a dorsal or lateral direction
- On metacarpals 3 and 4 the approach is straight dorsal and the extensor tendons must be separated bluntly with a hemostat
- Proximal phalanx fractures can be approached from a dorsal or lateral portal

2. Percutaneous access to the medullary canal

- With the use of fluoroscopy, the tip of the awl is placed 5mm. distal to the proximal joint surface
- The bone surface is perforated manually

- By pushing the nail handle with the thumb, the nail is advanced into the medullary canal
- The awl is then removed

- The nail comes tapered and pre-bent to facilitate negotiating the proximal fragment and its introduction into the distal fragment
- Occasionally the surgeon will find the need to further shape the nail, i.e. to provide 3-point fixation
- This is best done with sterile pliers
- The accessory tool allows the surgeon to withdraw the nail, change its shape and reintroduce it without losing access to the medullary canal



3. Reduction of the fracture

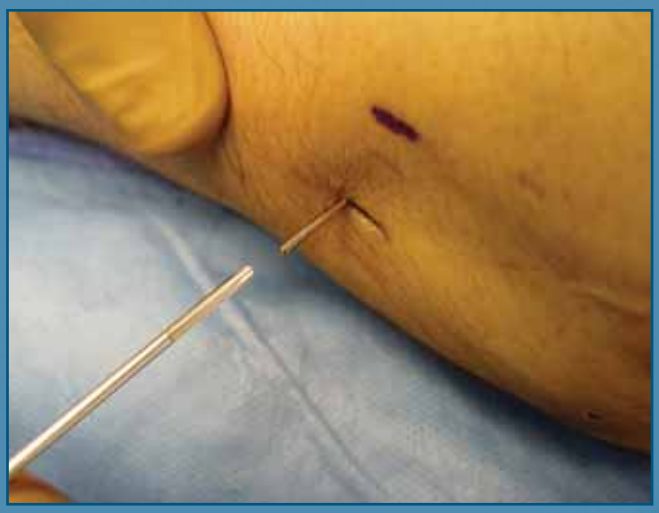
- The nail is advanced manually until the tip is just proximal to the fracture site
- The fracture is now reduced using fluoroscopy and the nail is passed into the distal fragment

4. Finalizing insertion

- Finally, the nail is advanced to the head of the metacarpal or phalanx
- Transverse diaphyseal fractures should be manually impacted to prevent over-distraction

5. Cutting the nail

- Once the surgeon is satisfied with fracture reduction and fixation, the nail is cut from the handle
- Utilizing the accessory tool, the nail is bent approximately to 70°-90°



6. Locking device

- Using fluoroscopy, insert the locking device making sure not to trespass the opposite cortex
- Slight taps fully seat the locking sleeve
- Proceed to cut jointly the nail and locking device
- The surgeon can elect to cut the implant above or below the skin
- If cut below the skin, it is important to leave the cut end of the nail at a more superficial level than the extensor tendons to prevent tendonitis and to facilitate removal

7. Protective implantable cap

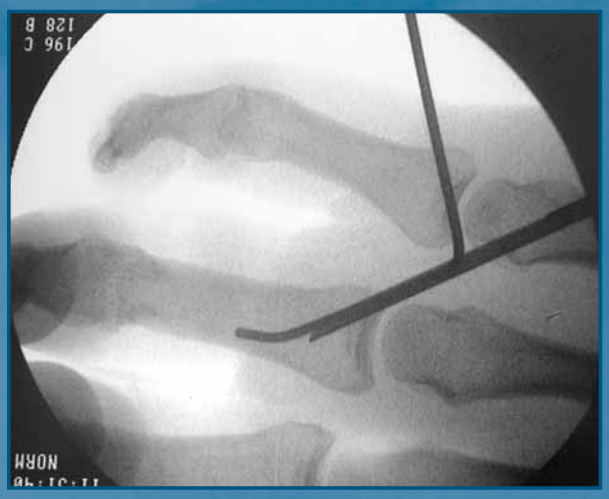
- The use of the implantable nail-cap will greatly reduce the risk of soft tissue irritation
- Introduce the cap over the cut end of the nail and seat it fully by digital pressure
- This is especially useful to prevent tendon irritation in metacarpals 3 & 4

8. Post-operative management

- The surgeon's experience best determines the optimal post-operative management
- Diaphyseal fractures need about 6 weeks to obtain union; metacarpal neck or proximal phalanx fractures may require 4 weeks
- Nails should be routinely removed
- Splinting the MP joints in full flexion while allowing interphalangeal motion will help prevent the development of MP extension contracture, fracture malrotation and extensor tendon irritation in the case of metacarpal 3 and 4
- Buddy splinting can help maintain rotational alignment particularly in the case of phalangeal fractures

Nail Exchange

- The shape of the nail may need adjustment in order to enter the distal fragment or to provide 3-point fixation
- Use the slotted nail exchange portion in the accessory tool to insert over the nail and into the medullary canal
- Remove the nail maintaining the accessory tool inside the canal
- Adjust the shape of the nail with sterile pliers



- Re-insert the nail over the slotted portion of the accessory tool
- Remove the accessory tool
- Obtain fluoroscopic confirmation
- Apply the proximal lock

product ordering information

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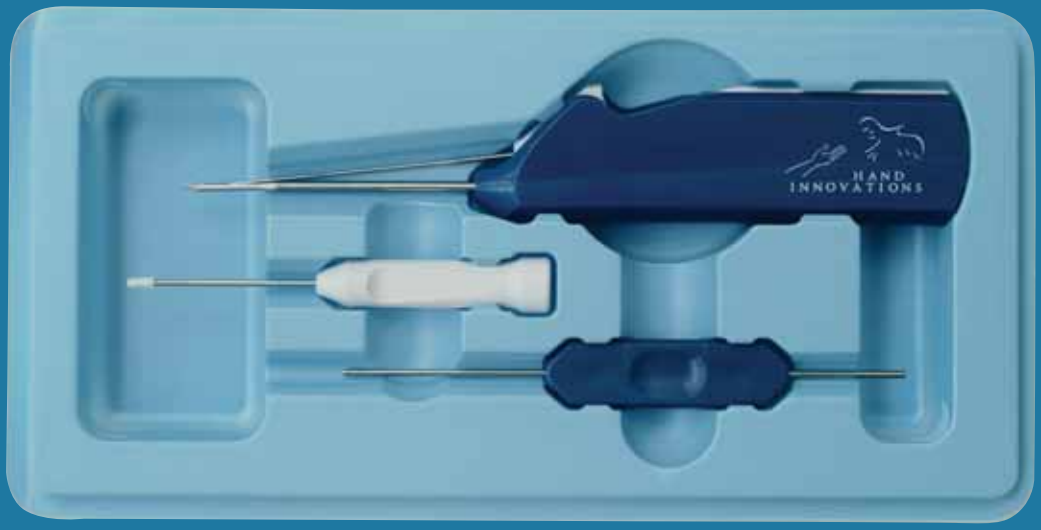
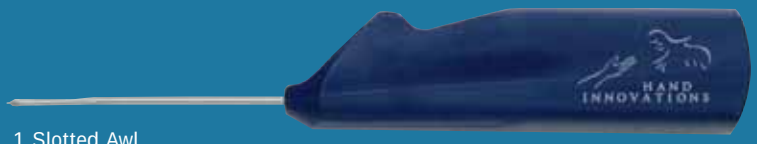
• Product # SBFS062 or # SBFS045

Small Bone Fixation System - 0.062” or 0.045” diameter



Kit Includes:



1 Slotted Awl

1 Intarmedullary Nail (0.062”/1.6mm or 0.045”/1.1mm)

1 Locking Device

1 Nail Exchanger/Bending Tool

1 Implantable Nail-Cap

• Product # SBFN062 or # SBFN045

Flexible Intramedullary Nail - 0.062” or 0.045” diameter

Kit Includes:

1 Intarmedullary Nail (0.062”/1.6mm or 0.045”/1.1mm)

1 Locking Device

1 Implantable Nail-Cap

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