

LIFT CALCANEAL PLATE

SURGICAL TECHNIQUE

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1. Description of Surgical Technique

NAME: LIFT Calcaneal Plate

DESCRIPTION: The LIFT Calcaneal Plate. Part of the YIPL small fragment Locking Internal Fixation Technique (LIFT) system Is used for the calcaneal bone fractures.



DESCRIPTION OF DEVICE: Available in SS 316L and Titanium Grade 5 material.

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2. Feature & Benefits

- Available in Extra-Small, small, Large and extra large in Left and Right Designs.
- Versatile- 15 Locking holes address Multiple Fracture patterns.
- Bendable tabs provide support for the anterior process and Plantar fragments.
- Angled and ascending holes (indicated by arrows) buttress the sustentaculum and provide better support of the calcaneotalar articular surface.
- Lateral application
- Locking screws provide standard Bicortical and or Unicortical fixation.



- Anatomically pre contoured
- Minimal irritation of ligaments and soft tissue from a flat plate and screw profile, rounded edges and polished surfaces.

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3. AO Principle

In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation:

1. Anatomic reduction: Fracture Reduction and fixation to restore anatomical relationships.
2. Stable fixation: Fracture fixation providing absolute or relative stability, as required by the patient, the injury, and the personality of the fracture.
3. Preservation of blood supply: Preservation of the blood supply to soft tissues and bone by gentle reduction techniques and careful handling.
4. Early, active mobilization: Early and Safe Mobilization and rehabilitation of the injured part and the patient as a whole.

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4. Indications

The locking calcaneal plate is indicated for

- Fractures and osteotomies of the calcaneus.
- Extra-articular fracture
- Intra-articular fracture
- Joint depression fracture
- Tongue type fracture
- Severely comminuted fracture

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5. Intended Purpose

The Locking Calcaneal Plate. Part of the YIPL small fragment Locking Internal Fixation Technique (LIFT) system is used for calcaneal bone fractures.

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6. Contraindications

- Since external fixation devices are often used in emergency situations to treat patients with acute injuries, there are no absolute contraindications for use. The surgeon's education, training and professional judgment must be relied upon to choose the most appropriate device and treatment for each individual patient. Whenever possible, the device chosen should be of a type indicated for the fracture being treated and/or for the procedure being utilized.
- Insufficient quantity or quality of bone which would inhibit appropriate fixation of the device.
- Compromised vascularity that would inhibit adequate blood supply to the fracture or operative site.
- Previous history of infections.
- Any neuromuscular deficit which could interfere with the patient's ability to limit weight bearing.
- Any neuromuscular deficit which places an unusually heavy load on the device during the healing period.
- Malignancy in the fracture area.
- Mental, physical or neurological conditions which may impair the patient's
- Ability to cooperate with the post-operative regimen.
- Patients with a compromised immune system.
- Pre-existing internal fixation that prohibits proper pin placement

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7. Surgical Steps

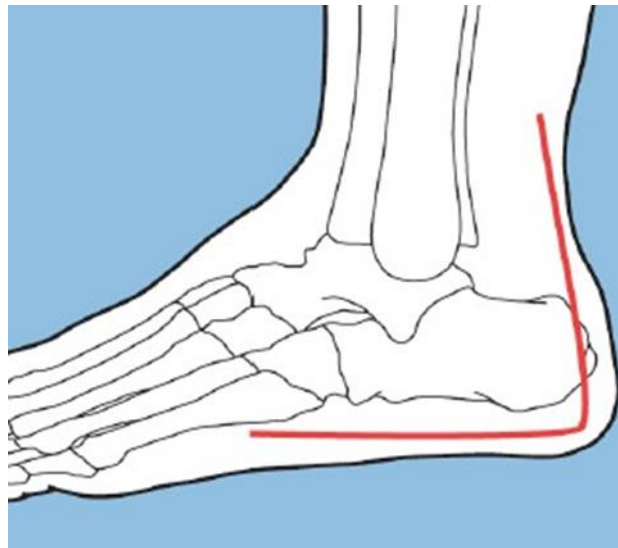
Preoperative Planning- General Technique Plate selection and contouring

The plates are available in various shapes and lengths which allow the surgeon to select fragment-specific treatment of calcaneal fractures. Select the plates according to the fracture pattern and anatomy of the calcaneal.

Surgical Approach:

Incision:

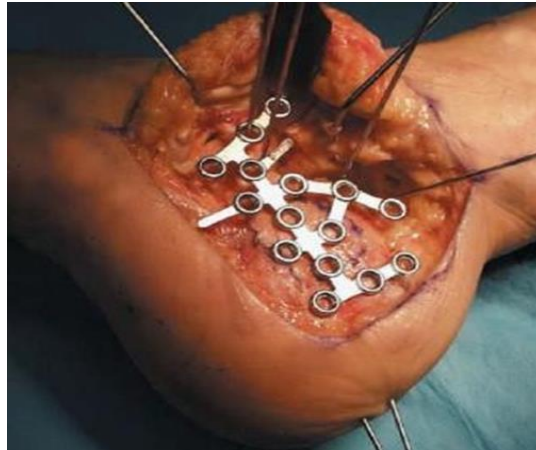
Right Angle lateral Incision



Reduce Fracture

K wires are used to temporarily reduce fracture. They must be placed to avoid interference with final plate placement

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Cut/Contour Plate

If necessary, remove a hole or tab of the plate using the locking calcaneal plate cutter (if not available, use the bending/cutting pliers). A combination of holes and/or tabs may be removed as needed. Place the plate into jaws of cutter as shown.



Due to calcaneal soft tissue anatomy, it may be helpful to pre-bend the superior and inferior tabs prior to plate application. Using the locking calcaneal plate tab bending pliers or universal bending pliers, contour the tabs in fine increments until a desired fit is achieved.

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Note: The locking calcaneal plate tab bending pliers may be used to bend the tabs after the plate is on the calcaneus.



Contour the plate using the combination bending pliers until an acceptable fit is achieved.



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If necessary, fine bending may be achieved in situ with two threaded plate holders. Thread one holder into a hole and thread a second holder into an adjacent hole. Apply small incremental force to achieve the required bending.



Secure Plate to bone

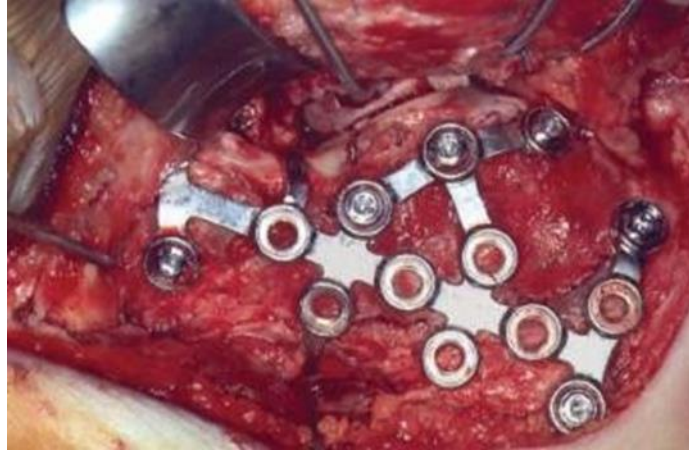
Secure the plate with 3.5 mm locking screws.



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Wound Closure

Close the wound in a routine fashion



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8. Implant Removal

To remove locking screws, unlock all screws from the plate, and then remove the screws completely from the bone. This prevents simultaneous rotation of the plate when unlocking the last locking screw.

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9. Caution

Used Implants: Used implants which appear un-damaged may have internal and/or external defects. It is possible that individual stress analysis of each part fails to reveal the accumulated stress on the metals as a result of use within the body. This may lead ultimately to implant failure after certain point of time due to metal fatigue. Therefore, reuse of implants is strictly not recommended.

SINGLE BRAND USAGE: Implant components from one manufacture should not be used with those of another. Implants from each manufacture may have metal, dimensions and design differences so that the use in conjunction with different brands of devices may lead to inadequate fixation or adverse performances of the devices

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10. Disposal of Implants

Every used or removed implant must be discarded after use and must never be re- used. It should be bent or scratched & then disposed of properly so that it becomes unfit for reuse. While disposing it off, it should be ensured that the discarded implant does not pose any threat to children, stray animals and environment. Dispose of the implants as per applicable medical practices and local, state and country specific regulatory requirement of Bio Medical Waste rules.

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11. Packaging Material Disposal

The packaging material of this device is made special packing material and therefore if swallowed, may cause choking Hazards. Therefore, it should be disposed of in such a way that keep out of reach of children and stray animals.

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12. MRI Information

IMPORTANT:

- Yogeshwar Implants (I) Pvt. Ltd. implants are manufactured from SS 316L and Titanium Grade 5 material, both are non-magnetic material, hence it do not pose any safety risk.
- Patients should be directed to seek a medical opinion before entering potentially adverse environments that could affect the performance of the implants, such as electromagnetic or magnetic field or including a magnetic resonance environment.
- Doctor shall conduct a Risk Benefit Analysis before directing the patient to enter electromagnetic or magnetic fields or including a magnetic resonance environment.
- The Yogeshwar Implants (I) Pvt. Ltd. implants has not been evaluated for safety and compatibility in the MR environment but on the basis of literature study below mentioned points can be taken care during MRI
- The minimum recommended time after the implantation that allows patients to safely undergo MRI examination or allowing the patient or an individual to enter the MRI environment is 6 (six) weeks.
- The maximum recommended time limit for MRI examination in patients implanted with the evaluated device is 30 min with a scanner operating at 1.5T (Tesla) or less.

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Product Details:

Description	Particular (sizes)	Material	Length	Design
3.5 mm Locking Calcaneal plate	Extra Small	S.S/Titanium	64 mm	Right/Left
3.5 mm Locking Calcaneal plate	Small	S.S/Titanium	69 mm	Right/Left
3.5 mm Locking Calcaneal plate	Large	S.S/Titanium	76 mm	Right/Left
3.5 mm Locking Calcaneal plate	Extra Large	S.S/Titanium	81 mm	Right/Left

Design of plates:

The calcaneal plate is available in two design Right & Left.

Figure A: Locking Calcaneal plate LEFT



Figure B: Locking Calcaneal plate RIGHT



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LIFT INSTRUMENTS SET FOR 3.5 SCREWS
LIFT - DRILL SLEEVE 2.8 MM-S.S. CAT NO. 601.06
LIFT - DRILL SLEEVE 2,8 MM-TIT CAT NO. 3035

LIFT - DRILL BIT 2.8 MM CAT NO. 601.14
LIFT - DRILL BIT 2,5 MM CAT NO. 601.13

LIFT - HEX. SCREW DRIVER 3,5 MM CAT NO. 601.15

LIFT - DEPTH GAUGE 3,5 MM with Scale CAT NO. 601.34

LIFT - K -WIRE 1,5 / 2,0 MM CAT NO. 1201

LIFT - BONE TAP 3,5 MM CAT NO. 255.11

LIFT - DRILL GUIDE 2.5 / 3.5 MM CAT NO. 601.05

LIFT - STAR SCREW DRIVER 3,5 MM CAT NO. 601.27


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- Cutting pliers with positioning pin diameter of 3.0 mm.



- Universal bending pliers, length 167.5mm.



LIFT HEX. LOCKING SCREWS 3.5MM - 10MM TO 50MM 1127
 LIFT STAR LOCKING SCREWS 3.5MM - 10MM TO 50MM 0837



(DIFF. OF 2MM UPTO 40MM & AFTER THAT 5MM UPTO 85MM)

- Combination bending pliers, for 2.0 mm-2.4 mm plates.



- Locking calcaneal plate Tab bending pliers.



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