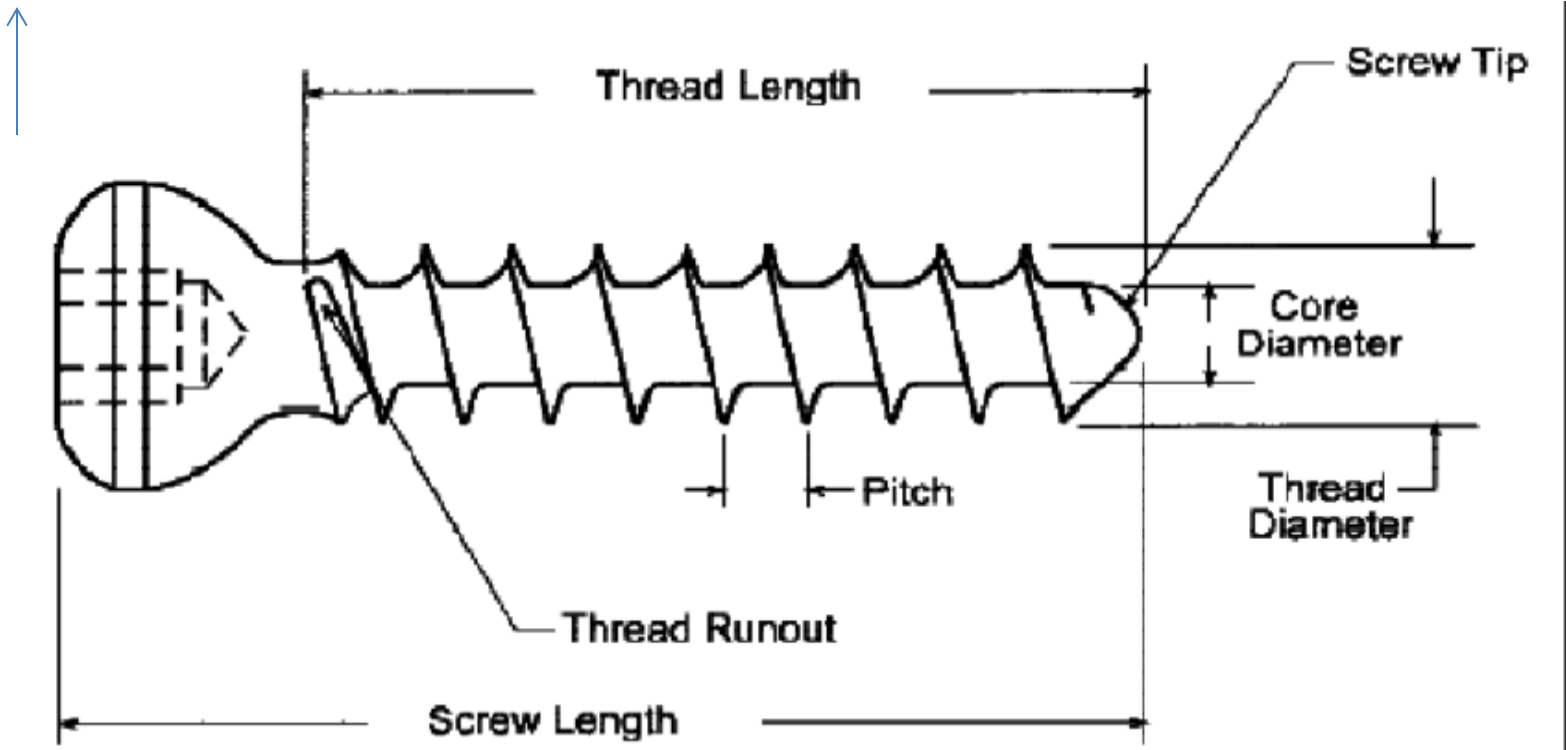
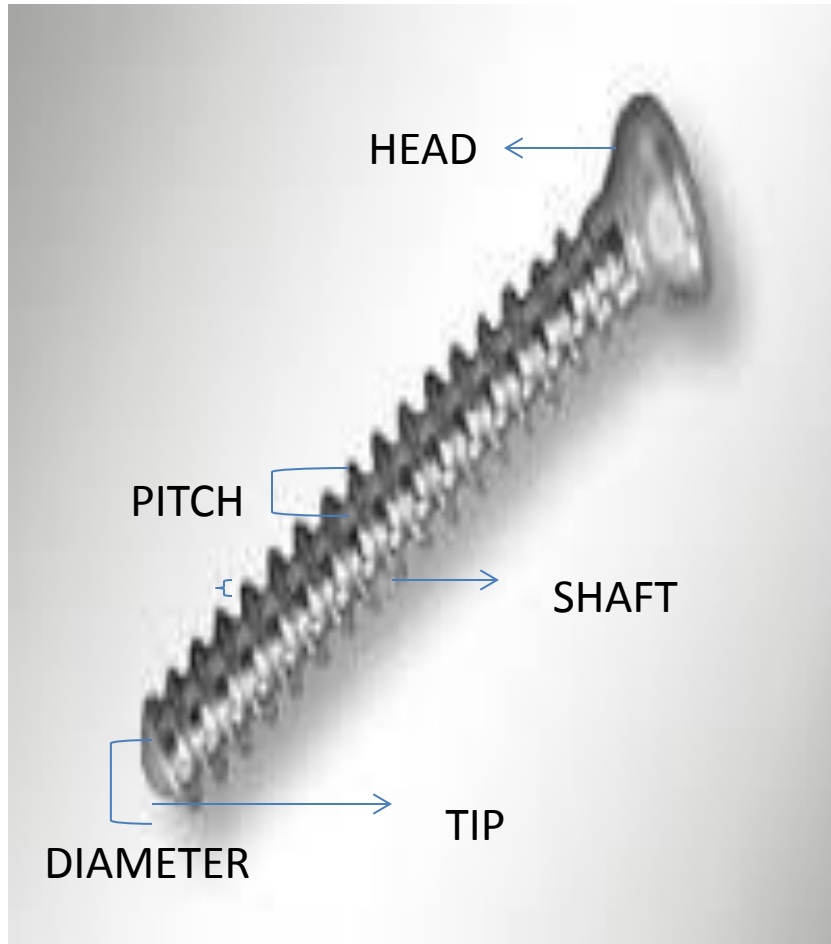


ORTHOPEDIC IMPLANTS & INSTRUMENTS

ANATOMY OF SCREW



CORTICAL SCREW



- have closely-spaced, shallow threads and larger core-to-outer diameter ratios
- Non self cutting
- Requires tapping

CANCELLOUS SCREW



- most commonly used in the metaphyses of long bones
- more deeply cut and more widely spaced threads
- self-tapping, only near cortex

LOCKING SCREW



5.0 MM CANCELLOUS
LOCKING SCREW



6.5 MM CANCELLOUS
LOCKING SCREW



6.5 MM CANCELLOUS
LOCKING SCREW(16MM TH.)



6.5 MM CANCELLOUS
LOCKING SCREW(32 MM TH.)



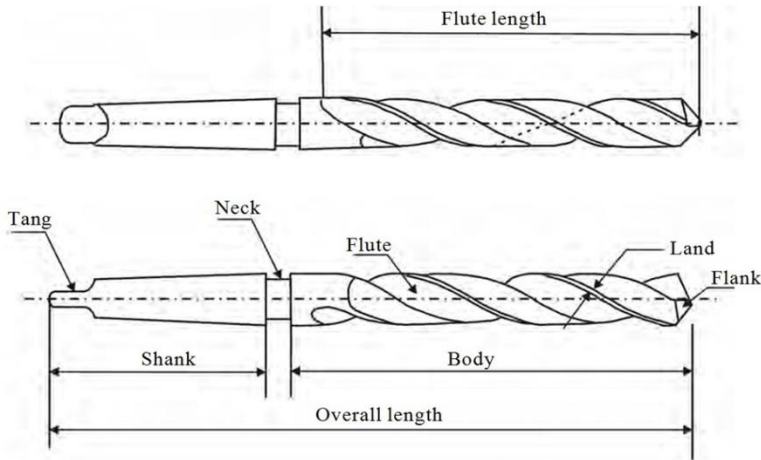
4.0 MM CORTEX
LOCKING SCREW



5.0 MM CORTEX
LOCKING SCREW

- These are used to fix locking plates, In these screws the head of the screw is also threaded which fits into the threaded hole on the plate.
- Term locking screw is also used when simple conventional screws are used to lock the two ends in interlocking nails

DRILL BIT

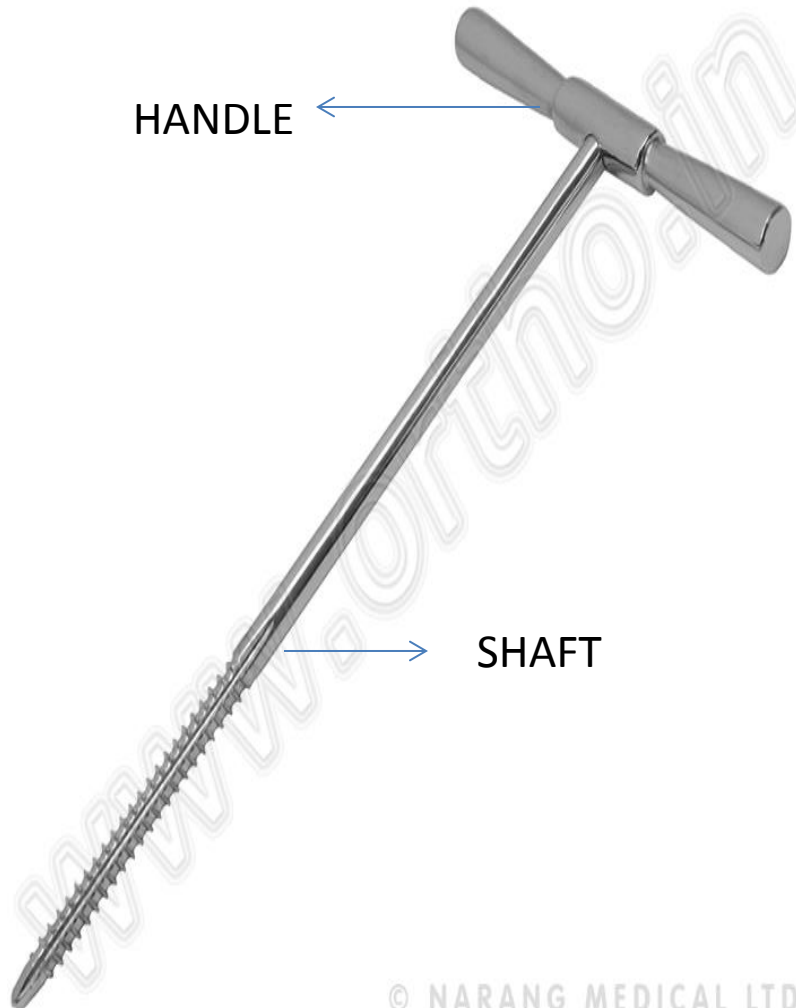


DRILL TOOL NOMENCLATURE



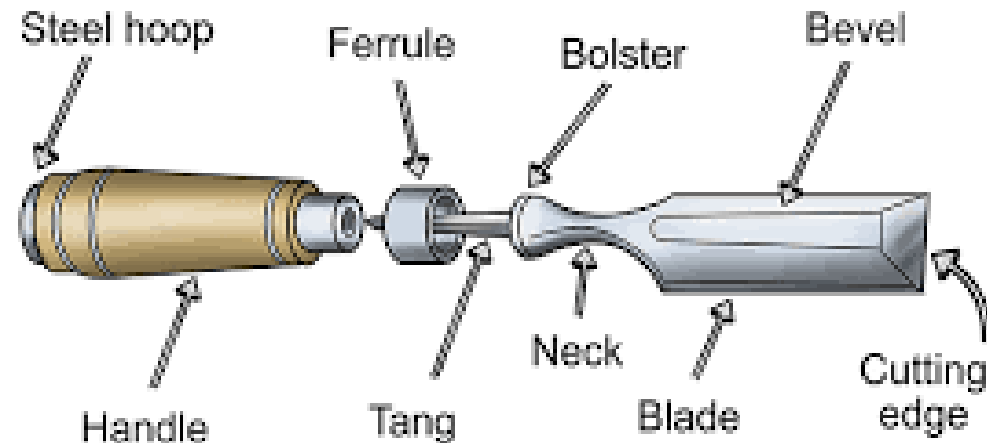
- non-sterile, reusable, economical alternative to single use drill bits.
- Compatible with existing implants, instruments and power equipment.
- reusable surgical drill bits can be re-processed up to 30 times, as long as in-process inspection renders the instrument usable.

TAP



- It is used before putting a screw to make a site favourable for placement of screws by making a threaded channel

BONE CHISEL



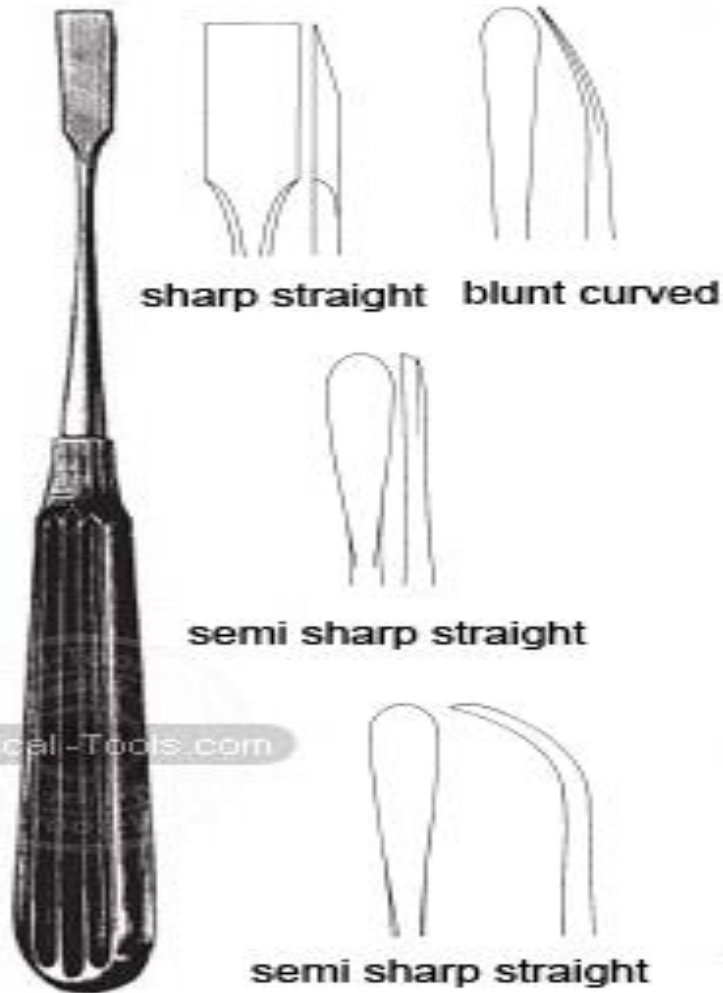
- It is used to remove excess callus formation around a fracture site in untreated or nonunited fractured site
- It is used to remove bony chips around screws and plates in case of implant removal

OSTEOTOME



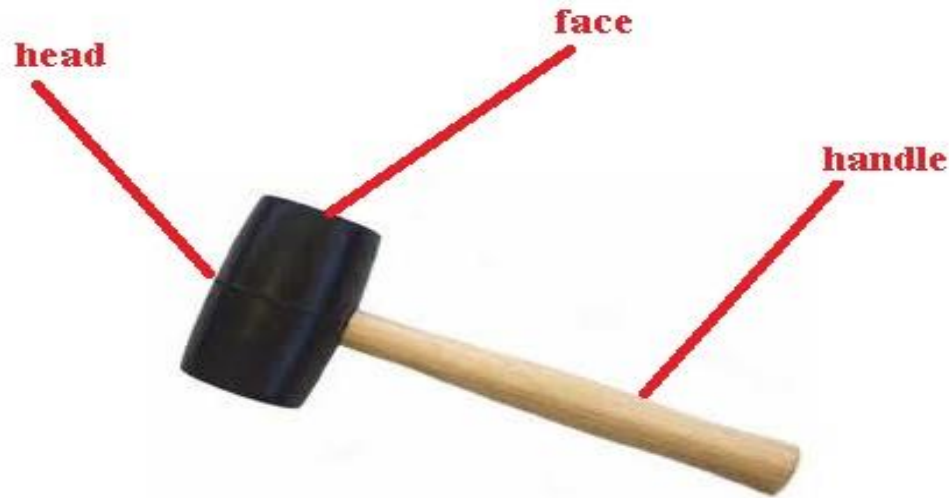
- It is used to cut and divide the bone

PERIOSTEAL ELEVATOR



- Most commonly used instrument in orthopedics
- Used in operations while bone cutting, drilling, implant fixation
- Used to elevate periosteum from adjacent soft tissue while fixing fracture.

MALLET



- It is used to strike osteotome, chisel, gouge, k nail, Austin moore prosthesis, Thompson prosthesis, Steinmann pins, rush nail.

K WIRE

- Used in internal fixation of long bones
- Giving traction
- Fixing fractures in children
- Ilizarov's fixing system.



K NAIL

Cat No. :- 158 K Nail For Femur

Dia :- 8,9,10,11,12 mm

Length :- 34 To 44 cm

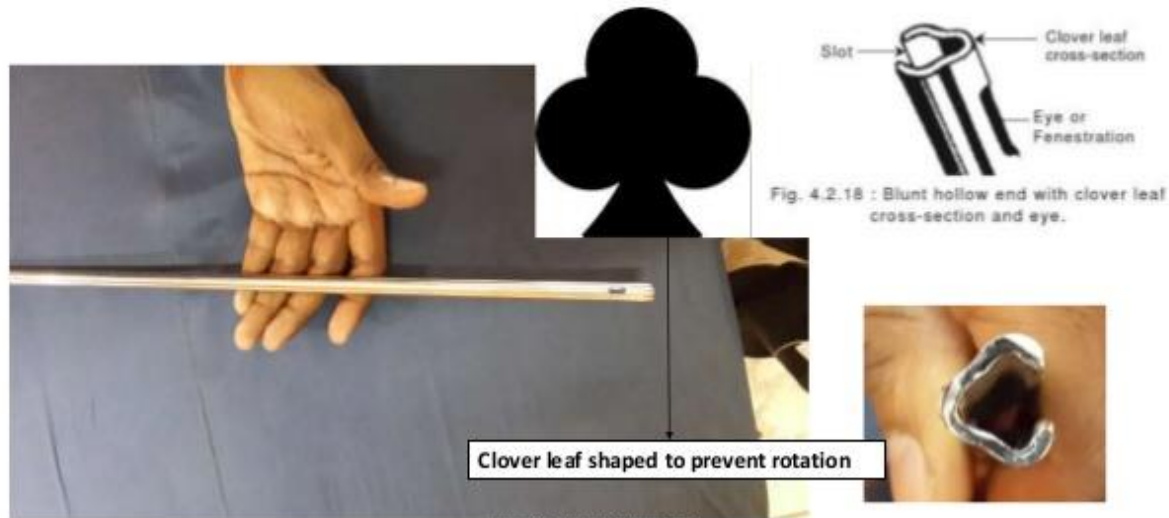


- Straight k nail used to treat simple transverse short oblique or comminuted diaphyseal fractures.
- Provide adequate and proper fixation which promotes faster bone healing.

- Curved k nails are used to treat single,transverse,short, oblique or communited diaphyseal fracture of tibia.
- Provide proper support to bone for faster healing.

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Kuntscher cloverleaf intramedullary nail /k nail****



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Steinmann pin



- Used in skeletal traction
- Reduction aid in some fractures like calcaneum fracture.
- As part of pin and plaster technique.

DUNHAM PIN



- Identical to Steinmann pin except that it has threaded length in middle
- Useful in skeletal traction in osteoporotic bones or cancellous bones

• V NAIL

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-Straight,
undreamed,solid,v shaped
instrument

- Used in invasive procedures where these are used for small stature
- Used in pertrochanteric fractures,intertrochanteric fractures
- C/I in low subtrochanteric fractures,femoral shaft fractures,femoral neck fractures.

V nail

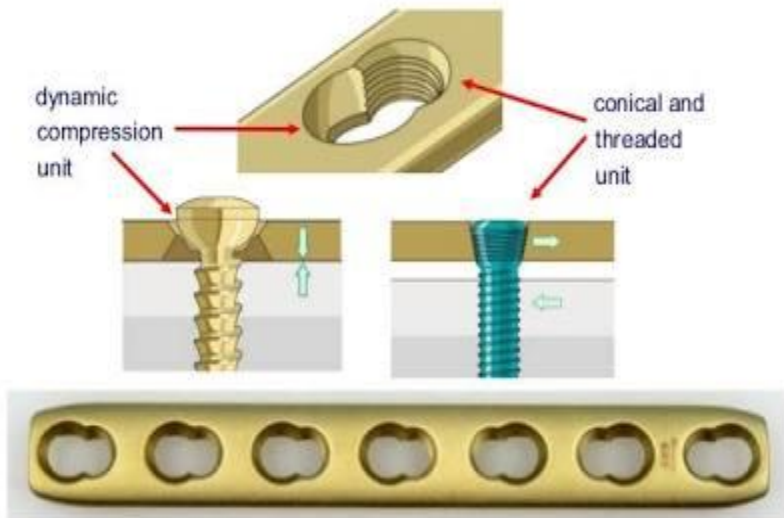
- Used for # tibia



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LCP PLATE

Locking compression plate (LCP)



- Create fixed angles that do not rely on screw purchase in bone
- They are used where conventional screw purchase is poor
- They have figure of 8 design and threaded hole for locking screws, plain hole for cancellous screws
- They provide stable internal fixation; even in osteoporotic bone.

TUBULAR PLATE



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- It is useful in areas with minimal soft tissue coverings such as the lateral malleolus, the olecranon, distal end of ulna
- Two variants: one third tubular (3.5mm) and semitubular (4.5mm)
- Plate offers good longitudinal stability if in contact with the bone.

BONE LEVER



- It is used while operating to keep the bone under consideration stable so that it cannot cause damage to any other bone or the body part
- present in various formats and shapes

BONE NIBBLER

- It is used for nibbling the bone.
- The double action reduces the force required for cutting the bone.
- The straight nibbler is used for general use and the curved nibbler is used for spinal surgery.



THOMAS SPLINT

two iron rods joined at the upper end by an oval iron ring or half-ring, and bent at the lower end to form a W shape

.1. a rigid or flexible appliance for fixation of displaced or movable parts

2. to supply support for the purpose of immobilizing an injured or displaced body part.



It is a common splint used in ward for immobilization and reduction most lower limb fractures and treatment of other lower limb pathologies.

Uses of 4 pulleys

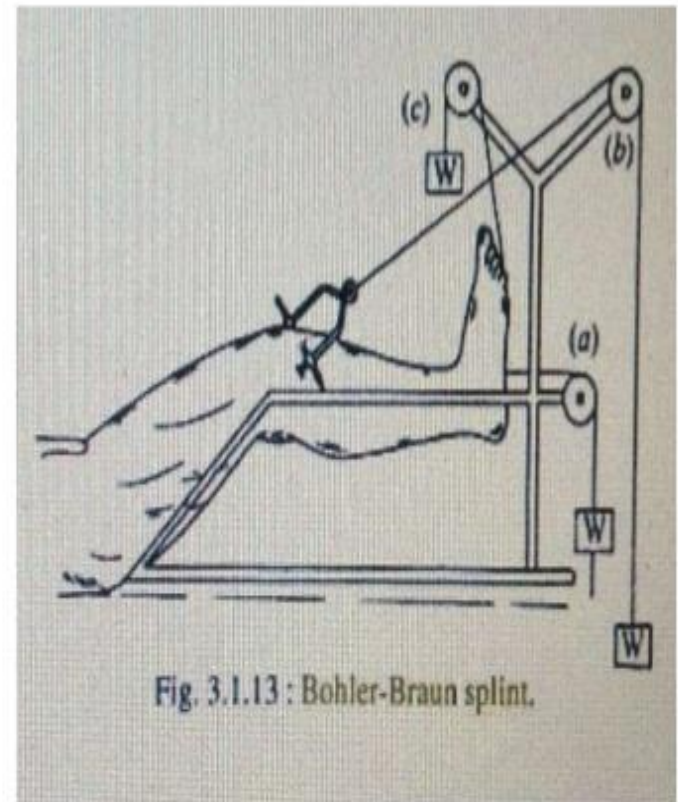
Lowermost : Tibia and fibular injuries

Second from bottom : supracondylar fracture femur

3rd (directed away from patient) : fracture shaft femur middle third

4th (topmost and directed toward the patient) : prevents foot drop

- **Pulley a**- calcaneal/distal tibial traction.
- **Pulley b**-distal femoral/proximal tibial traction
- **Pulley c**- change angle of traction



- Uses:With traction
- For lower limb injuries with displacement / fragment overlap. The skeletal fraction is given via a K wire, Steinmam pin, Bohler's pin, etc.
- In leg fracture : pin through calcaneal tuberosity
- In femur fracture : pin through tibial tuberosity in adults, just above condyles in children

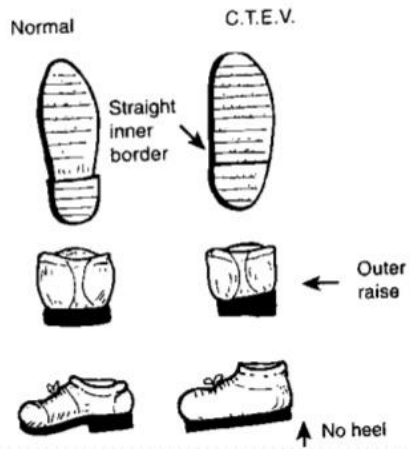
- Without traction:
- Compound fracture with no overlap - for dressing and wound care and possible immobilization
- Soft tissue injury to leg
- Rest in case of cellulitis, gangrene, amputation.



- A cervical collar, also known as a neck brace
- used to support a person's neck. It is also used by emergency personnel for those who have had traumatic head or neck injuries
- A soft collar is fairly flexible and is the least limiting but can carry a high risk of further breakage, especially in people with osteoporosis
- rigid collars usually comprising (a) a firm plastic bi-valved shell secured with Velcro straps and (b) removable padded liners

CTEV SHOES

c) CTEV Shoes



- To correct the deformity in club foot



Cockup splint

- In radial nerve palsy
- The Cock-Up Splint is designed to prevent the Carpal Tunnel Syndrome sufferer from curling up their hands at night during sleep.



AUSTIN MOORE PROSTHESIS



Austin Moore Hip Prosthesis –Hip Prosthesis are indicated for degenerated femoral head replacement.

Designed approximately similar to anatomical shape of femoral head.

The fenestrated stem allows the growth for improved fixation.

The Austin Moore Hip Prosthesis is available in different head sizes to fit accurately in acetabulum.

BIPOLAR PROSTHESIS



- Same as Austin Moore prosthesis
- A bipolar prosthesis has an additional artificial joint between the two components of the prosthesis