Expert Tibia Nail:

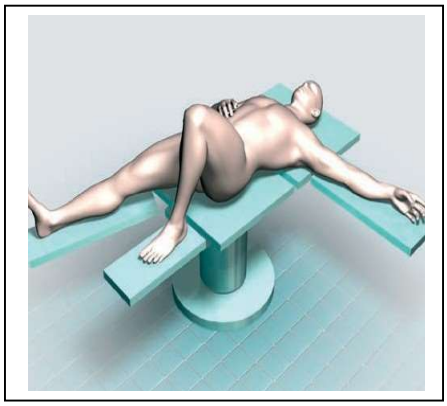
Design:

- Anatomic design correct 10° bend for easier insertion
- innovative locking options, in combination with cancellous bone locking screws, increase the stability of the proximal fragment for proximal third fractures
- Conical threads for secure connection to insertion/extraction instruments
- medio-lateral (ML) locking options enable primary compression or secondary controlled dynamization
- Two ML and one antero-posterior (AP) locking options for stability of the distal fragment
- Distal oblique locking option to prevent soft tissue damage and increase stability of the distal fragment
- Beveled proximal end to prevent soft tissue irritation
- Wide range ofavailable sizes: 8mm to 11mm diameters and 280mm–380mm Length

Surgical Steps:

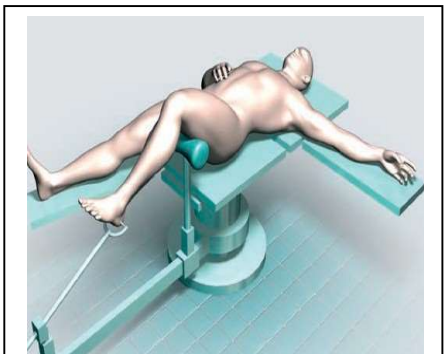
Patient Position and Approach:

Position the patient supine on the radiolucent table. Ensure that the knee of the injured leg can be flexed at least 90°. Position the image intensifier such that visualisation of the tibia including the articular surface proximally and distally is possible in AP and lateral views.



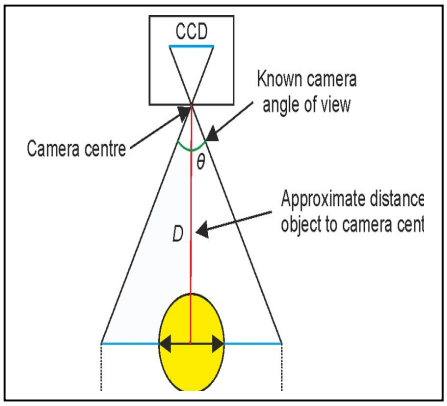
Optionally, the procedure can be performed on a fracture table with the leg placed in traction.

The knee roller can be placed under the lower part of the thigh if it obstructs the view of the tibia plateau in AP view



Determine CCD Angle:

Take an AP X-ray of the unaffected side preoperatively Determine the CCD angle using a goniometer or the preoperative planning template.



Reduce Fracture:

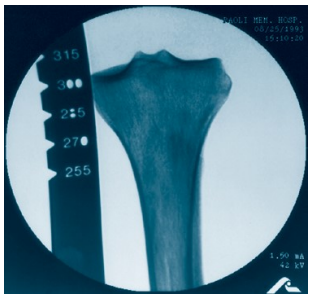
If possible, carry out closed reduction of the fracture under image intensifier control.
Exact reduction and secure fixation of the patient to the operating table are essential for easy handling and a good surgical result.

Determine Nail Length and Diameter:

The required nail length must be determined after reduction Of the lower leg fracture.

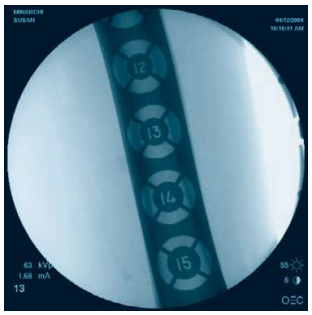
Position the C-arm for an AP view of the distal tibia.
With long forceps, hold the ruler along the leg, parallel to and at the same level as the tibia. Adjust the ruler un- til the distal tip is at the level of the physeal scar or the desired nail insertion depth. Mark the skin at that site.

Move the C-arm to the proximal tibia, replace the distal end of the ruler at the skin mark, and take an AP image of the proximal tibia. Read nail length directly from the ruler image, selecting the measurement at or just below the level of the anterior edge of the tibial plateau.



When using the large distractor, measure the distance from the inferior border of the distal pin to the superior border of the proximal pin to determine optimal nail length.

Position the C-arm for an AP or lateral view of the tibia at the level of the isthmus. Hold the ruler over the tibia so that the diameter gauge is centered over the narrow- est part of the medullary canal. Read the diameter measurement on the circular indicator that fills the canal.



Note: Compression or dynaminization must be taken into account when determining the nail length. A shorter nail should be chosen when active compres- sion is planned for the procedure. The dynamic locking option allows for 7 mm of travel.

Note: The ruler is not at the same level as the tibia. This affects the accuracy of the measurement, pro- viding only an estimated canal

- Alternative :
  Under image intensifier control, place the Measuring Device (on the femur and position the square marking over the isthmus. If the transition to the cortex is still visible to the left and right of the marking, the corresponding nail diameter may be used.

Approach:

Make an incision in line with the central axis of the intra- medullary canal. Depending on the anatomy of the pa- tient, this incision can be transpatellar, medial or even lateral parapatellar.

The incision starts proximally at the distal third of the patella along the patellar ligament down to the tibial tuberosity.

Mobilise the infrapatellar corpus adiposum laterally
and dorsally without opening the synovia. A free access of the nail to the insertion point must be guaranteed.

Prepare the entry site of the nail on the ventral edge of the tibial plateau.

Nail Insertion:

Hyperflex the knee to aid nail insertion into the medul- lary canal.

Insert the nail into the intramedullary canal. Use a twist- ing motion to advance the nail.

Monitor the nail passage across the fracture, control in two planes to avoid malalignment.

Insert the nail until it is at or below the tibial opening. Check final nail position in AP and lateral views.

For proximal locking mount the aiming arm only when the nail has been completely inserted, otherwise the aiming arm may loosen during nail insertion

5000-INS-0006 BONE AWL CURVED
5000-INS-0019 GUIDE WIRE PLAIN 2.5 MM X 950 MM
5100-INS-0007 PROXIMAL REAMER 11MM
5100-INS-0001 EXPERT TIBIA PROXIMAL JIG
5000-INS-0012 RAM
5000-INS-0011 RAM ROD HANDLE

Proximal Locking:

Use the correct locking screw, drill sleeve, trocar and drill bit for the selected nail diameter as shown below.Confirm that the nail is securely connected to the insertion handle. Mount the aiming arm to the insertion handle.

Insert the three-part trocar combination (protection sleeve, corresponding drill sleeve and trocar) through the desired ML hole in the aiming arm, make stab incision and insert the trocar to the bone. Remove the trocar.

Ensure that the drill sleeve is pressed firmly to the near cortex. Using the corresponding drill for (4.9 mm locking screws), drill through both cortices until the tip of the drill bit penetrates the far cortex.

Ensure that the drill sleeve is pressed firmly to the near cortex and read the measurement from the calibrated drill bit at the back of the drill sleeve. This measurement corresponds to the appropriate length of the locking screw. Remove the drill bit and the drill sleeve.

After drilling both cortices, remove the drill bit and the drill sleeve, followed by depth gauge. Read the measurement from the back of the protection sleeve, which corresponds to the appropriate length of the locking screw.

Insert the appropriate locking screw through the protec- tion sleeve using the screwdriver. Verify locking screw length under image intensification.






5300-INS-0013	DRILL BIT Ø 4.0MM 12” LONG
5300-INS-0014	DRILL BIT Ø 3.0MM 12” LONG
5000-INS-0023	DEPTH GAUGE FOR I. L

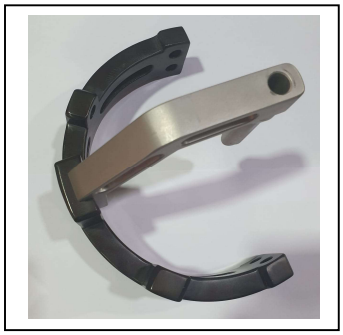
Insertion of End Cap:

Align the end cap with the nail axis using the hexagonal screwdriver inorder to prevent tilting. Screw the end capcompletely onto the nail untilits collar touches the proximal end of the nail.In order to avoid losing the end cap and to facilitate insertion, the endcap can also be inserted throughthe Protection Sleeve.

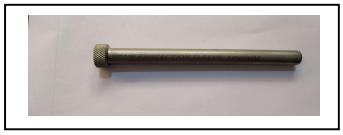
5000-INS-0016 I.L SCREW DRIVER 4.5MM LONG 12''

Instruments

5100-INS-0001 EXPERT TIBIA PROXIMAL JIG



5100-INS-0002 PROTECTION SLEEVE 10.0 X 8.0 MM

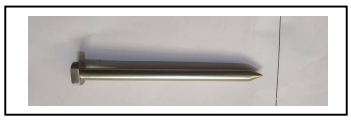


5300-INS-0012 PROTECTION SLEEVE FOR DISTAL LOCKING 10.0 X 8.0 MM

5100-INS-0004 DRILL SLEVE 8.0 X 4.0 MM

5100-INS-0003 DRILL SLEVE 8.0 X 3.0 MM

5100-INS-0005 TROCAR 8.0 MM



5100-INS-0006 NAIL CONNECTING BOLT

EXPERT TIBIA NAIL

5300-INS-0018 T-HANDLE

5000-INS-0008 INSERTION DRIVING HEAD DRIVING HEAD

5000-INS-0009 RAM ROD

5000-INS-0010 KNOB FOR RAM ROD & DRIVING HEAD

5000-INS-0011 RAM ROD HANDLE

5000-INS-0012 RAM

5000-INS-0013 DRILL BIT Ø4MM 12'' LONG

5000-INS-0014 DRILL BIT Ø3MM 12'' LONG

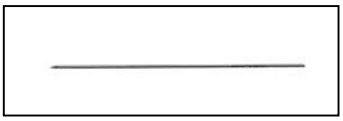
5000-INS-0016 I.L SCREW DRIVER 4.5MM LONG 12''

5000-INS-0017 TISSUE PROTECTOR

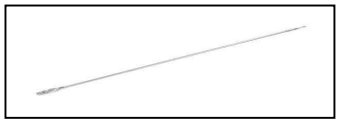
5000-INS-0019 GUIDE WIRE PLAIN 2.5 MM X 950 MM

EXPERT TIBIA NAIL

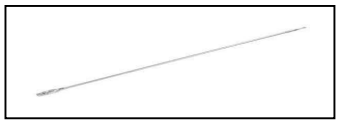
5000-INS-0018 GUIDE WIRE PLAIN 2.0 MM X 950 MM



5000-INS-0021 BALL TIP GUIDE WIRE 2.5 MM X 950 MM



5000-INS-0020 BALL TIP GUIDE WIRE 2.0 MM X 950 MM



5100-INS-0007 PROXIMAL REAMER 11 MM

5000-INS-0006 BONE AWL CURVED

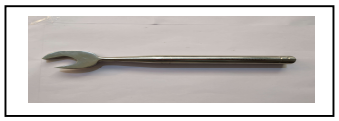
5000-INS-0029 CANNULATED AWL CURVED

5300-INS-0030 GUIDE WIRE HOLDING FORCEP

5000-INS-0031 TEFLON TUBE

5000-INS-0023 DEPTH GAUGE FOR I.L

5000-INS-0022 FIX SPANNER 16 MM



EXPERT TIBIA NAIL

Implant Size:

Ø 8.0 MM EXPERT TIBIA NAIL

SS 316L	TITANIUM	SIZE
1618-SS-8028	1618-TT-8028	280 MM
1618-SS-8030	1618-TT-8030	300 MM
1618-SS-8032	1618-TT-8032	320 MM
1618-SS-8034	1618-TT-8034	340 MM
1618-SS-8036	1618-TT-8036	360 MM
1618-SS-8038	1618-TT-8038	380 MM

Ø 9.0 MM EXPERT TIBIA NAIL

SS 316L	TITANIUM	SIZE
1618-SS-9028	1618-TT-9028	280 MM
1618-SS-9030	1618-TT-9030	300 MM
1618-SS-9032	1618-TT-9032	320 MM
1618-SS-9034	1618-TT-9034	340 MM
1618-SS-9036	1618-TT-9036	360 MM
1618-SS-9038	1618-TT-9038	380 MM

Ø 10.0 MM EXPERT TIBIA NAIL

SS 316L	TITANIUM	SIZE
1618-SS-1028	1618-TT-1028	280 MM
1618-SS-1030	1618-TT-1030	300 MM
1618-SS-1032	1618-TT-1032	320 MM
1618-SS-1034	1618-TT-1034	340 MM
1618-SS-1036	1618-TT-1036	360 MM
1618-SS-1038	1618-TT-1038	380 MM

Ø 11.0 MM EXPERT TIBIA NAIL

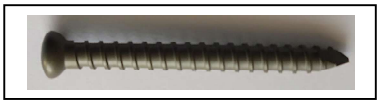
SS 316L	TITANIUM	SIZE
1618-SS-1128	1618-TT-1128	280 MM
1618-SS-1130	1618-TT-1130	300 MM
1618-SS-1132	1618-TT-1132	320 MM
1618-SS-1134	1618-TT-1134	340 MM
1618-SS-1136	1618-TT-1136	360 MM
1618-SS-1138	1618-TT-1138	380 MM

Screw Used For Proximal Femoral Nail

4.9 mm Interlocking Bolt

24 mm to 80 mm (2 mm Diff.)

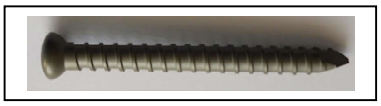
(1717-SS-5000 / 1717-TT-5000)



3.9 mm Interlocking Bolt

24 mm to 60 mm (5 mm Diff.)

(1717-SS-4000 / 1717-TT-4000



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Gujarat –India.