

## EPAIN Femoral Nails



EPAIN Nails, implants and instruments catalogue also surgical protocol

# EPAIN Femoral Nails



Cat. No	Description
EPA-1120	Anatomic Short Femoral Nail Ø11x200mm
EPA-1121	Anatomic Short Femoral Nail Ø11x215mm
EPA-1123	Anatomic Short Femoral Nail Ø11x230mm
EPA-1124	Anatomic Short Femoral Nail Ø11x245mm
EPA-1220	Anatomic Short Femoral Nail Ø12x200mm
EPA-1221	Anatomic Short Femoral Nail Ø12x215mm
EPA-1223	Anatomic Short Femoral Nail Ø12x230mm
EPA-1224	Anatomic Short Femoral Nail Ø12x245mm
EPA-1320	Anatomic Short Femoral Nail Ø13x200mm
EPA-1321	Anatomic Short Femoral Nail Ø13x215mm
EPA-1323	Anatomic Short Femoral Nail Ø13x230mm
EPA-1324	Anatomic Short Femoral Nail Ø13x245mm

Cat. No	Description
EPA-1420	Anatomic Short Femoral Nail Ø14x200mm
EPA-1421	Anatomic Short Femoral Nail Ø14x215mm
EPA-1423	Anatomic Short Femoral Nail Ø14x230mm
EPA-1424	Anatomic Short Femoral Nail Ø14x245mm
EPA-1520	Anatomic Short Femoral Nail Ø15x200mm
EPA-1521	Anatomic Short Femoral Nail Ø15x215mm
EPA-1523	Anatomic Short Femoral Nail Ø15x230mm
EPA-1524	Anatomic Short Femoral Nail Ø15x245mm

## Proximal Cross Screws Self-Cutting Conulated & Compressing



Cat. No	Description
FSC-1175	Proximal Screw Ø8x75mm
FSC-1180	Proximal Screw Ø8x80mm
FSC-1185	Proximal Screw Ø8x85mm
FSC-1190	Proximal Screw Ø8x90mm
FSC-1195	Proximal Screw Ø8x95mm
FSC-1200	Proximal Screw Ø8x100mm

## Proximal Cross Screws Self-Cutting Conulated & Non-Compressing



Cat. No	Description
FSC-1375	Proximal Screw Ø8x75mm
FSC-1380	Proximal Screw Ø8x80mm
FSC-1385	Proximal Screw Ø8x85mm
FSC-1390	Proximal Screw Ø8x90mm

## Ø4.9 mm Distal Locking Screws



Cat. No	Description
FSC-0425	Locking Screw Ø4.9x25mm
FSC-0430	Locking Screw Ø4.9x30mm
FSC-0436	Locking Screw Ø4.9x36mm
FSC-0438	Locking Screw Ø4.9x38mm
FSC-0440	Locking Screw Ø4.9x40mm
FSC-0442	Locking Screw Ø4.9x42mm
FSC-0444	Locking Screw Ø4.9x44mm
FSC-0446	Locking Screw Ø4.9x46mm
FSC-0448	Locking Screw Ø4.9x48mm
FSC-0450	Locking Screw Ø4.9x50mm
FSC-0455	Locking Screw Ø4.9x55mm
FSC-0460	Locking Screw Ø4.9x60mm

## Compression Locking Bolt



Cat. No	Description
DFN-1300	Compression Locking Bolt

## End Cup



Cat. No	Description
DFN-1400	End Cup

EPAIN ÇAKMA TAKIMI / EPAIN INSTRUMENTS

EPA-0010 EPAIN Handle



EPA-0012 EPAIN Proximal and Distal Guide



FNI-0013 Bar Locking Screw



EPA-0014 Locking Rod



FNI-0100 Supine Driver



FNI-0110 Sliding Hammer



FNI-1008 Trocar



FNI-2131 Proximal Protection Sleeve 13/10mm dia



FNI-2108 Proximal Protection Sleeve 10/8mm dia



FNI-2820 Proximal Protection Sleeve 8/2mm dia



FNI-2848 Proximal Protection Sleeve 8/4.8mm dia



FNI-2810 Proximal Protection Sleeve 10/8mm dia



FNI-2084 Proximal Protection Sleeve 8/4mm dia



PN-1204-320 Kriscchner Wire With Threaded Ø2x320mm



FNI-3483 Cannulated Drill Bit Ø4.8mm/2.1mmx320mm



FNI-3430 Drill Bit Ø4.x320mm



Flexible Reamers



- FNI-3010 Flexible Reamer Ø10mm
- FNI-3011 Flexible Reamer Ø11mm
- FNI-3012 Flexible Reamer Ø12mm
- FNI-3013 Flexible Reamer Ø13mm
- FNI-3014 Flexible Reamer Ø14mm
- FNI-3015 Flexible Reamer Ø15mm

FNI-7200 T Handle



FNI-4808 Ø8mm Reamer



FNI-5808 Ø8mm Tap



FNI-5490 Ø4.9mm Tap



# EPAIN Femoral Nails

FNI-5000 Awl



FNI-6050 Hexagonal Screwdriver 5mm



FNI-6035 Screw Driver 3.5mm



FNI-6135 Universal Screwdriver 3.5mm



FNI-7119 Universal Socket Wrench  
Shaft 19mm



FNI-7019 Open Wrench 19mm



FNI-9001 Jacobs



FNI-9002 Depth Gauge



FNI-1394 Curved Guide Rod



FNI-1395 Guide Rod



Distal Guide Insert



Cat. No	Description
EPA-8200	Distal Guide Insert 200mm
EPA-8215	Distal Guide Insert 215mm
EPA-8230	Distal Guide Insert 230mm
EPA-8245	Distal Guide Insert 245mm

# EPAIN Femoral Nails

## İnsizyon:

Trokanter majorden proksimale doğru 5 ile 8cm lik insizyon yapılır. Fascia geçilip gluteus medius lifleri ayrılıp trokanter majorun tipi parmak ucu ile palpe edilir. Burada seçilecek noktada önemli olan superior veya inferiorda kalmamak ve giriş yeri olarak trokanter majorun tipinin medulla üzerine kurve yaptığı kısma lateralde kalacak şekilde dayamaktır. İmplantın mediolateral açısının 6° olduğunu hatırlayarak kılavuz teli femur shaftına 6° açı olacak şekilde itmektir.

## Approach:

Palpate the greater trochanter. Make a 5 cm incision approximately 5 to 8 cm proximally from the tip of the greater trochanter. Make a parallel incision in the fascia of the gluteus medius and split the gluteus medius in the line of its fibres.

Determine nail insertion point and insert guide wire in the AP view, the nail insertion point is normally found slightly lateral to the tip of the greater trochanter in the curved extension of the medullary cavity. The mediolateral angle of the implant is 6°. This means that the FNI-1394 Guide Wire must be inserted laterally at an angle of 6° to the shaft. This can be done manually with the Universal Chuck with T-Handle

The guide wire should be inserted into the medullary cavity to a depth of about 15 cm.

3mm lik kılavuz tel (FNI-1395) yardımıyla kanal içerisine 10 cm kadar girilir. Buraya kadar trokanter majorun medialine yaslanarak itilirken femurun proksimal kısmında mediali sıyrarak gitmesi sağlanır. Kılavuz telin üzerine FNI-9001 Jacobs chuck konularak kırığın pozisyonuna göre daha rahat ilerletilmesi sağlanır. Kırık hattında kılavuz tel dikkatle yönlendirilerek yumuşak dokuya körlemesine giriş yapılmamasına dikkat edilir.

The FNI-1395 guide rod is pushed in the proximal femur about 10 cm. The tip of the guide rod is oriented first close to the lateral border of the femur and as reaching the subtrochanteric region it is turned medially. With the aid of FNI-9001 Jacobs chuck the guide rod can be managed thorough the fracture site. Care must be taken not to enter the soft tissue.

Kılavuz üzerinden fleksibl oyucular en küçükünden başlamak üzere geçirilir. Çivinin proksimal kısmı 14,5mm çapında olduğundan medulla çapı ne olursa olsun trokanter minora kadar olan kısım 15mm oyucu ile oyulur.

The reaming process begins with the smallest flexible reamer. The proximal diameter of the nail is 14,5mm. The proximal femur is reamed to the minor trochanter until 15 mm is reached. The reaming of the medulla is performed until desired diameter is reached.

Çivi çakma çubuğu EPA-0010 istenen çiviye FNI-0014 çakma rodu ile şekildeki gibi monte edilir. Monte edildikten sonra kılavuz tel üzerinden piriform fossaya sokulur ve elle itilebildiği yere kadar gönderilir. Daha sonra çekiçle geri kalan kısım çakılır. Kırık hattına göre verilecek kilitleme kararından önce EPA-0012 proksimal ve distal kilitleme adaptörü takılarak sıkıca kilitletir.

**KILAVUZ TEL BU AŞAMADAN SONRA ÇIKARILMALIDIR!**

The EPA-0010 handle is mounted to the desired EPAI nail with FNI-0014 locking rod. The system is driven in the femur over the guide rod manually. The rest is driven with FNI-0100 supine driver and a hammer. The system can be extracted using FNI-0110 sliding hammer with detachable swing arm. The fracture line should be checked with C-arm. The EPA-0012 proximal and distal guide is mounted to the system with FNI-0013 bar locking screw. **THE GUIDE WIRE MUST NOW BE REMOVED!**

FNI-2131 tüpü takılır ve cilt üzerine bıraktığı izden cilt insizyonu yapılır. Bu insizyonda fasya kesildikten sonra FNI-2131, FNI-2108 tüpleri birlikte ve içlerine de FNI-1008 nokta çakıcı yerleştirilerek kemik kortekse kadar varılır. FNI-1008 nokta çakıcı çıkarılarak yerine FNI-2820 tüpü yerleştirilerek yivli K- teli AP ve LATERAL planlar kontrol edilerek gönderilir. K-teli başın subkondral kısmına 1 cm kalana kadar gönderilir.

The FNI-2131 proximal protection sleeve is mounted to this guide. A skin incision is performed including the fascia. The FNI-2131, FNI-2108 proximal protection sleeves and FNI-1008 trochar are mounted and hammered to the lateral femoral cortex.

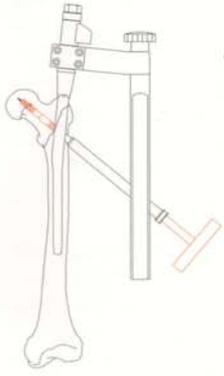
The FNI trochar is replaced with FNI-2820 proximal proction sleeve for threaded K-wire. The K-wire is inserted checking its position in AP and LATERAL planes until it reaches the subchondral area of the caput femoris.

FNI-2820 tüpü çıkarılarak yivli K-teli ile eş boy bir K-teli lateral korteks dayandırılır. Dışarıda kalan kısmıyla vida boyu ölçülür. FNI-2848 tüpü takılıp FNI-3483 kanüle dril ile delme işlemi yapılır. Bu aşamadan sonra FNI-2848 kod nolu tüpü çıkarılarak FNI-4808 Ø8mm reamer ile kullanılacak lag vida boyuna göre oyulur. Eğer komresionsuz vida kullanılacak ise remerlamayınız.

The FNI-2820 sleeve is taken out and a second K-wire is pushed until it touches the lateral femoral cortex. The difference between two wires will give the exact length of the proximal locking screw. The FNI-2848 sleeve is used for FNI-3483 cannulated drill. The FNI-4808 Ø8mm reamer is used to ream the desired lag screw length. if a non compression screw is to bu used, reamer should not be used.

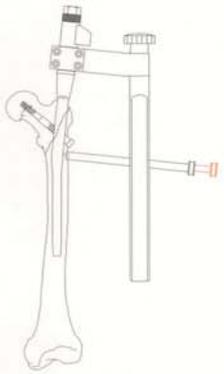
FNI-5808 tap ile tepleme işlemi tamamlanır. The reaming and the tapping process is performed using FNI 4808 reamer and FNI 5808 tap.

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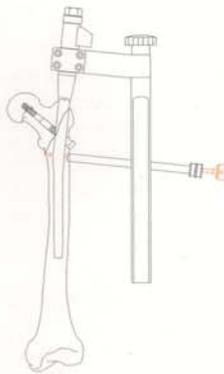
FNI-6050 tornavida ile Lag vidası geçirilir.

The proximal cross cannulated screw is mounted using FNI-6050 hexagonal screwdriver.



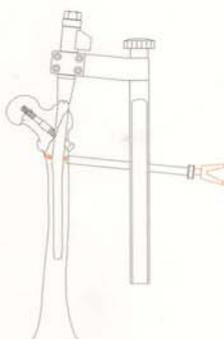
Bu aşamada trokanter minor seviyesindeki delik seçilerek FNI- 2810 tüpü ile birlikte FNI-1008 trokar uç ile kemiğe iz bırakılır.

At this stage the hole at the level of trochanter minor is used with FNI 2810 distal protection sleeve with the same procedure.



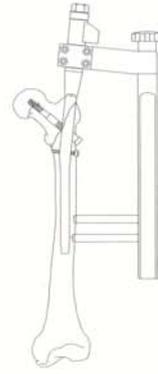
FNI-1008 trokar uç çıkarılarak FNI-2084 kod nolu tüp kullanılarak FNI-3430 4.0 mm çaplı dril ile kemik delinir.

FNI-1008 trochar is replaced by FNI-2084 protection sleeve in order to use the FNI-3430 4.0 drill bit is used to drill the bone.



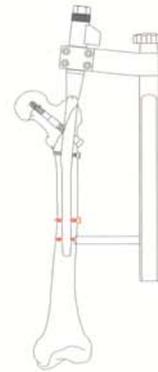
FNI-9002 vida boyu ölçer ile boy ölçülür. Kemik FNI-5490 4.9mm tep ile teplenir. Bu aşamadan sonra FNI-6035 tornavida kullanılarak kilitleme vidası geçirilir.

The screw length is measured with FNI-9002 depth gauge. The bone is tapped with FNI-5490 4.9mm tap. The proximal locking screw is inserted with FNI-6035 screwdriver.



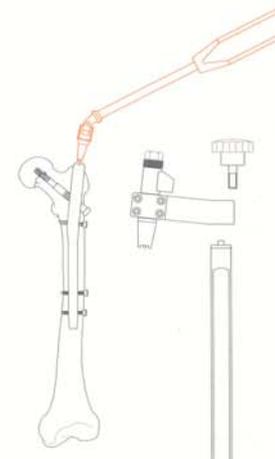
Distal kilitlemenin devamı için kılavuzun distal kısmına çivi boyuna göre yerleştirilen insert içerisine FNI-2810 ve FNI-2084 tüpleri yerleştirilir. Cilt ve fasya insizyonu sonrasında FNI-1008 trokar ile kemiğe varılır.

The distal guide insert is used to leave open the necessary locking holes according to the chosen nail. The FNI-2810 and FNI-2084 sleeves are inserted and after the incision FNI-1008 trochar is used to reach the bone.



FNI-3430 kod nolu Ø4mm dril ile kemik delinir ve ardından FNI-9002 vida boy ölçer ile kilitleme vida boyu ölçülür. Kemik FNI-5490 4.9mm tep ile teplenir. FNI-6035 tornavida ile vida geçirilir.

The screw length is measured with FNI-9002 depth gauge. The bone is tapped with FNI-5490 4.9mm tap. The distal locking screw is inserted with FNI-6035 screwdriver.



Çakma seti FNI-7119 veya FNI-7019 anahtarları kullanılarak demonte edilir.

The system is removed by opening the FNI-0014 locking rod with FNI-7119 universal socket wrench or FNI-7019 open wrench.

DFN-1400 Tepe tapa vidası veya DFN-1300 kompresyon kilitleme vidası FNI-61335 oynar başlı tornavida veya FNI-7111 oynar başlı lokma anahtarla çiviye yerleştirilir.

The DFN-1400 end cup or DFN-1300 compression locking bolt is inserted with FNI-7111 universal socket wrench or FNI-6135 universal screwdriver.