V2-EVREN
Tıbbi Mamuller İmalat San. ve Tic. A.Ş

Anatomic Femoral Nails

AFN Nails, implants and instruments catalogue also surgical protocol

ISO 9001:2000

CE 0459

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Cat. No	Description
AFN-1136L	Anatomic Femoral Nail Left Ø11x360mm
AFN-1138L	Anatomic Femoral Nail Left Ø11x380mm
AFN-1140L	Anatomic Femoral Nail Left Ø11x400mm
AFN-1142L	Anatomic Femoral Nail Left Ø11x420mm
AFN-1144L	Anatomic Femoral Nail Left Ø11x440mm
AFN-1236L	Anatomic Femoral Nail Left Ø12x360mm
AFN-1238L	Anatomic Femoral Nail Left Ø12x380mm
AFN-1240L	Anatomic Femoral Nail Left Ø12x400mm
AFN-1242L	Anatomic Femoral Nail Left Ø12x420mm
AFN-1244L	Anatomic Femoral Nail Left Ø12x440mm
AFN-1336L	Anatomic Femoral Nail Left Ø13x360mm
AFN-1338L	Anatomic Femoral Nail Left Ø13x380mm
AFN-1340L	Anatomic Femoral Nail Left Ø13x400mm
AFN-1342L	Anatomic Femoral Nail Left Ø13x420mm
AFN-1344L	Anatomic Femoral Nail Left Ø13x440mm

Cat. No	Description
AFN-1436L	Anatomic Femoral Nail Left Ø14x360mm
AFN-1438L	Anatomic Femoral Nail Left Ø14x380mm
AFN-1440L	Anatomic Femoral Nail Left Ø14x400mm
AFN-1442L	Anatomic Femoral Nail Left Ø14x420mm
AFN-1444L	Anatomic Femoral Nail Left Ø14x440mm
AFN-1536L	Anatomic Femoral Nail Left Ø15x360mm
AFN-1538L	Anatomic Femoral Nail Left Ø15x380mm
AFN-1540L	Anatomic Femoral Nail Left Ø15x400mm
AFN-1542L	Anatomic Femoral Nail Left Ø15x420mm
AFN-1544L	Anatomic Femoral Nail Left Ø15x440mm

Nails in the shaded areas are available on special request.

Anatomic Femoral Nails Right (AFN)

Cat. No	Description
AFN-1136R	Anatomic Femoral Nail Right Ø11x360mm
AFN-1138R	Anatomic Femoral Nail Right Ø11x380mm
AFN-1140R	Anatomic Femoral Nail Right Ø11x400mm
AFN-1142R	Anatomic Femoral Nail Right Ø11x420mm
AFN-1144R	Anatomic Femoral Nail Right Ø11x440mm
AFN-1236R	Anatomic Femoral Nail Right Ø12x360mm
AFN-1238R	Anatomic Femoral Nail Right Ø12x380mm
AFN-1240R	Anatomic Femoral Nail Right Ø12x400mm
AFN-1242R	Anatomic Femoral Nail Right Ø12x420mm
AFN-1244R	Anatomic Femoral Nail Right Ø12x440mm
AFN-1336R	Anatomic Femoral Nail Right Ø13x360mm
AFN-1338R	Anatomic Femoral Nail Right Ø13x380mm
AFN-1340R	Anatomic Femoral Nail Right Ø13x400mm
AFN-1342R	Anatomic Femoral Nail Right Ø13x420mm
AFN-1344R	Anatomic Femoral Nail Right Ø13x440mm

Cat. No	Description
AFN-1436R	Anatomic Femoral Nail Right Ø14x360mm
AFN-1438R	Anatomic Femoral Nail Right Ø14x380mm
AFN-1440R	Anatomic Femoral Nail Right Ø14x400mm
AFN-1442R	Anatomic Femoral Nail Right Ø14x420mm
AFN-1444R	Anatomic Femoral Nail Right Ø14x440mm
AFN-1536R	Anatomic Femoral Nail Right Ø15x360mm
AFN-1538R	Anatomic Femoral Nail Right Ø15x380mm
AFN-1540R	Anatomic Femoral Nail Right Ø15x400mm
AFN-1542R	Anatomic Femoral Nail Right Ø15x420mm
AFN-1544R	Anatomic Femoral Nail Right Ø15x440mm

Nails in the shaded areas are available on special request.

Proximal Cross Screws Self-Cultting Cannulated & 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-Cultting Cannulated & 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

Ø4.9mm Distal Locking Screws

Cat. No	Description
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

End Cup

Cat. No	Description
DFN-1400	End Cup

Compression Locking Bolt

Cat. No	Description
DFN-1300	Compression Locking Bolt

AFN ÇAKMA TAKIMI / AFN INSTRUMENTS

AFN-0010 AFN Handle

AFN-0012 AFN Proximal Guide

FNI-0015 Distal Guide For DFN & AFN

FNI-0013 Bar Locking Screw

FNI-0014 Locking Rod

FNI-0016 Distal Outrigger

FNI-0017 Distal Outrigger Pin

FNI-0100 Supine Driver

FNI-0110 Sliding Hammer

FNI-1008 Trochar

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 Distal Protection Sleeve 10/8mm dia

FNI-2084 Distal Protection Sleeve 8/4mm dia

PN-1204-320 Krischner Wire With Threaded Ø2x320mm

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

FNI-3430 Drill Bit Ø4x320mm

Flexible Reamers

FNI-3008 Flexible Reamer Ø8mm
FNI-3009 Flexible Reamer Ø9mm
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

AFN ÇAKMA TAKIMI / AFN INSTRUMENTS

FNI-7200 Handle

FNI-4808 Ø8mm Reamer

FNI-5808 Ø8mm Tap

FNI-5490 Ø4.9mm Tap

FNI-5000 Awl

FNI-6050 Hexagonal Screwdriver 5mm

FNI-6035 Screw Driver 3.5mm

FNI-6135 Universal Screwdriver 3.5mm

FNI-7111 Universal Socket Wrench Shaft 11mm

FNI-7119 Universal Socket Wrench Shaft 19mm

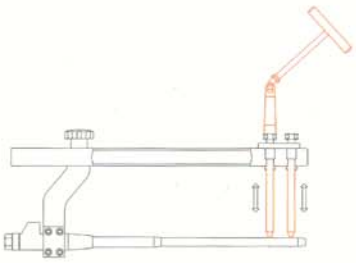
FNI-7019 Open Wrench 19mm

FNI-9001 Jacobs

FNI-9002 Depth Gauge

FNI-1394 Curved Guide Rod

FNI-1395 Guide Rod



Sistemin kurulması:
Ameliyat öncesi yapılan ölçümlere uygun çivi seçilerek ameliyat sırasında asistan tarafından sistem montajı yapılarak distal kilitleme kılavuzu denenir.

Assemble Instruments:
The preop determined nail with prefered measurements is mounted to the guide system in order to test the distal targeting system in the begin ning of the operation.

Trokanter majorden proksimale doğru 8cm lik insizyon yapılır. Fascia geçilip gluteus medius lifleri ayrılıp priform fossa parmak ucu ile palpe edilir. Burada seçilecek nokta superior veya inferiorda kalmamak ve trokanter majora doğru mümkün olduğu kadar lateralize olmaktır. Burda awl (FNI-5000) konarak AP hem de LATERAL planda medulla ile aynı planda olmasına dikkat edecek her ikisinin aksiyel planda kesiştiği nokta bulunur. Burası şekildeki giriş noktasıdır. Awl ilerletilerek giriş noktası açılır.

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 fasciae of the gluteus medius and split the gluteus medius in the line of its fibres.

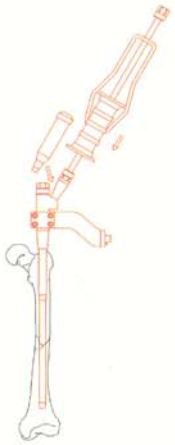
Palpate the piriformis fossae with your index finger. The key point is to stay as close as possible to major trochanter and not to be superior or inferior in the lateral plane. The FNI 5000 awl is placed on the point crossing the medulla of the femur in AP and LATERAL planes as seen in the C-arm. The femur is opened and enlarged with the awl.

3mm lik kılavuz tel (FNI-1395) yardımıyla kanal içerisine 10 cm kadar girilir. Buraya kadar trokanter majorun medialine yaslanarak itilirken femurun proksimal kısmında mediali sıyırarak 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. Distal fragmanda telin merkezlemesine dikkat edilmesi eksentrik oyulmayı engelleyecektir. Distale yakın kırıklarda kılavuz tel rahatlıkla geriye gelebileceği için klemplenmesi önerilir.

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 and the distal centering of the guide rod since this may cause eccentric reaming. Also in distal fractures, the guide rod may backup easily. One should clamp the proximal part of the rod while reaming.

Kılavuz üzerinden fleksibl oyucular en küçüğünden başlamak üzere geçirilir. Çivinin proksimal kısmı 14,5mm çapında olduğundan medulla çapı ne olursa olsun trokanter minora kadar olan kısım 15mm oyucu ile oyulur. Oyma işlemi tamamlandıktan sonra boy ölçümü yapılır. Ameliyat sırasında ölçüm pratik olarak kılavuz telin üzerinden yollanan oyucunun klemple işaretlenmesi veya eş boy kılavuz telin skopi yardımıyla klemplenmesi ile sağlanabilir.

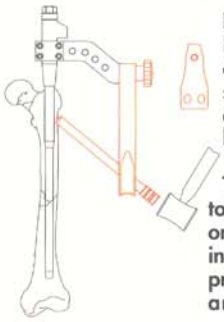
The reaming process begins with the smallest flexible reamer. The proximal diameter of the nail is 14,5mm. The proximal femur is reamed to the minor trochanter until 15 mm is reached. The reaming of the medulla is performed until desired diameter is reached. After the reaming process the nail length measurement is performed either by putting a clamp to the last distally used reamer or with the aid of C-arm and a second guide rod at the same length.



Çivi çakma çubuğu 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 AFN-0012 proksimal kilitleme adaptörü takılarak sıkıca kilitlenir.
KILAVUZ TEL BU AŞAMADAN SONRA ÇIKARILMALIDIR.

The AFN-0010 handle is mounted to the desired AFN nail with FNI-0014 locking rod. The system is driven in the femur over the guide rod manually as far as possible. 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 AFN-0012 proximal guide is mounted to the system with FNI-0013 bar locking screw.
THE GUIDE WIRE MUST NOW BE REMOVED!

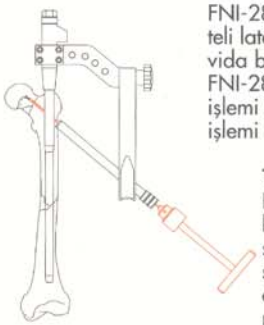


Bu adaptöre kullanılan çiviye göre R-L deliği kullanılarak FNI-2131 tüpü takılır ve cilt üzerine bıraktığı izden cilt insizyonu yapılır. Bu insizyonda fasya kesildikten sonra FNI-2131, FNI-2108 tüpleri birlikte ve içlerine de FNI-1008 nokta çakıcı yerleştirilerek kemik kortekse kadar varılır ve buraya iz yapılır.

The FNI-2131 proximal protection sleeve is mounted to this proximal guide on the R or L hole depending on the affected extremity. 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.

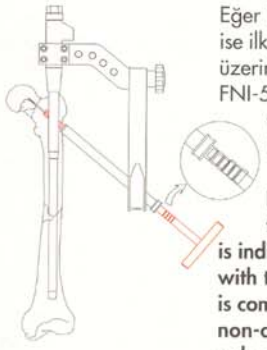
FNI-1008 nokta çakıcı çıkarılarak yerine FNI-2820 tüpü yerleştirilerek yivli K teli AP ve LATERAL planlar kontrol edilerek gönderilir. K teli başın subkondral kısmına 1 cm kalana kadar gönderilir.

The FNI 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.



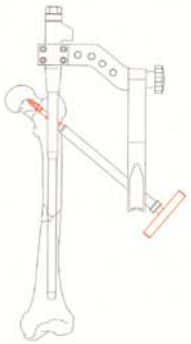
FNI-2820 tüpü çıkarılarak yivli K-teli ile eş boy bir K-teli lateral korteks dayandırılır. Dışarıda kalan kısmıyla vida boyu ölçülür. Daha sonra bu tüp çıkarılıp yerine FNI-2848 tüpü takılıp FNI-3483 kanüle drill ile delme işlemi yapılır. FNI-2848 tüpü ve drill çıkarılarak delme işlemi tamamlanır.

The FNI-2820 sleeve is taken out and a second K-wire with the same length is pushed until the bony cortex. The difference between them will show the proximal locking screw length. The sleeve is changed with FNI-2848 and FNI-3483 cannulated drill is used to complete the drilling process.



Eğer kullanılacak olan vida kompresyon özellikli ise ilk olarak FNI-4808 reamer ile oyulur (Reamer üzerinde vida boyu belirtilmiştir.) ve ardından da FNI-5808 tap ile ile teplenir. Komple dişli Lag vidası kullanılacak ise yalnız tap kullanılmalıdır.

If compression is needed , one should use the FNI-4808 reamer first (the screw length is indicated on the reamer). The next step comes with the FNI-5808 tap and the tapping process is completed. If you are planning to use only the non-compressing proximal screws you should only use the tap.

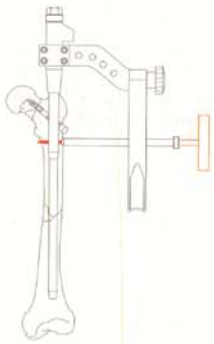


FNI-6050 delikli tornavida kullanılarak lag vidası geçirilir. Bu işlemden sonsa k-teli çıkarılır.

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

Bu aşamada trokanter minor seviyesindeki delik seçilerek FNI-2810 tüpü ile FNI-1008 trocar kullanılarak kemik üzerinde iz yapılır.

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

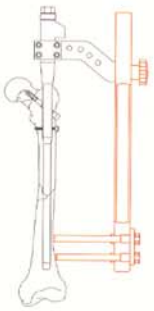


FNI-3430 Ø4.0 mm drill ile kemik delinir ve ardından FNI-9002 vida boy ölçer ile vida boyu tespit edilir. FNI-5490 tep i kullanarak tep lenir.

The FNI-3430 4.0 drill bit is used to drill the bone. The screw length is measured with FNI-9002 depth gauge. The bone is tapped with FNI-5490 4.9mm tap.

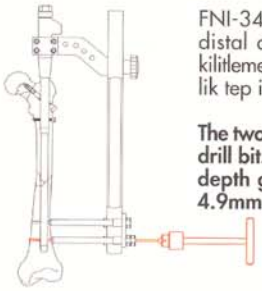
FNI-6035 tornavida kullanılarak kilitleme vidası geçirilir.

The proximal locking screw is inserted with FNI-6035 screwdriver.



Proksimal kilitleme adaptörü AFN-0012 çıkarılarak daha önce hazırlanan FNI-0015 distal kilitleme adaptörü takılır. FNI-0016 distal kilitleme merkezleme adaptörünün üzerine FNI-2810 tüpü takılarak cilt üzerine bıraktığı izden cilt insizyonu yapılır. Burada insizyonun büyük tutulması merkezleme için çok önemlidir . FNI-1008 nokta çakıcı ile kemiğe ulaşıldıktan sonra FNI-2084 distal tüp takılır.

The proximal guide is replaced by the FNI-0015 distal guide prepared at the beginning of the operation. FNI-2810 distal protection sleeve is mounted on the FNI-0016 distal outtrigger. A stab incision is performed including the fascia. The incision should be great enough for centering the sleeve on the bone. FNI-1008 trochar is mounted afterwards and hammered to the lateral femoral cortex. The FNI 1008 trochar is replaced with FNI -2084 distal proction sleeve.

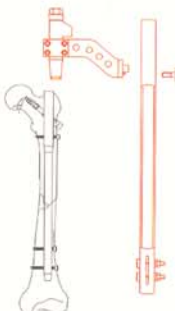


FNI-3430 Ø4.0mm lik matkap kullanılarak her iki distal delikler açılır. FNI-9002 vida boy ölçer ile kilitleme vida boyu ölçülür. Bu işlemlerden sonra 4.9mm lik tep ile delikler teplenir

The two distal holes are drilled with FNI-3430 Ø4.0mm drill bit. The screw length is measured with FNI 9002 depth gauge. The holes are tapped with FNI 5490 4.9mm tap afterwards.

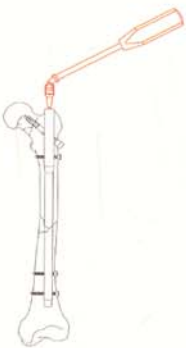
FNI-6035 tornavida ile her iki distal deliğe kilitleme vidaları geçirilir.

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 (tam dişli lag vidası kullanılmış ise) veya DFN-1300 kompresyon kilitleme vidası FNI-6135 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.

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