

DXF Professional Femoral Nail System

Surgical Technique



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Preface

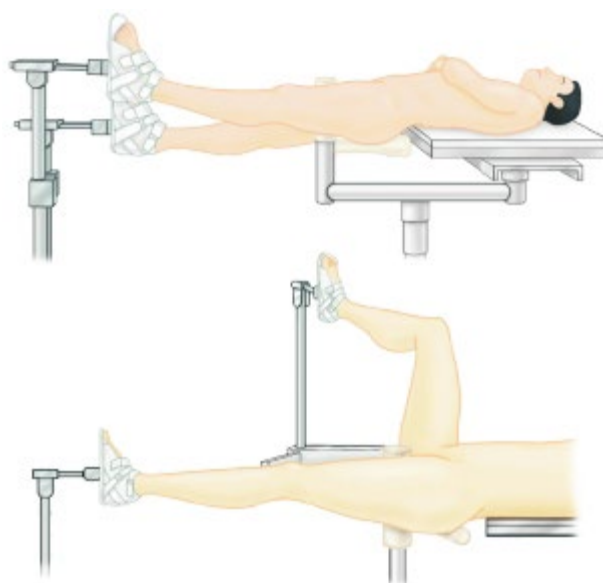
The DXF Professional femoral nails are designed to accommodate a standard femoral locking mode or the Recon locking mode on the same leg. Utilizing the same femoral nail instruments, simplify the surgical approach by allowing placement of the nail through the tip of greater trochanter. The proximal section of the implant is 13mm. Screw placement for the reconstruction mode is at the standard 130°. The nail has a 5°anteversion and an anterior bow to match the femur.

Indications

- The indications for intramedullary locking nail include:
- Traumatic fractures
- Pathological fractures
- Re-fractures
- Non-unions
- Reconstructive surgery

Patient Preparation

Patient is placed supine with unaffected limb extended below the affected limb and trunk. The affected limb is adducted. Flex the affected hip 15°-30°. Apply traction through a skeletal pin or the foot with fracture table foot holder. Adjust the affected limb for length and rotation by comparison with the unaffected limb. Rotation is further checked by rotating the arm to align femoral neck anteversion and then making the appropriate correction by foot, usually in 0°-15° of external rotation. Decubitus position may also be used with the fracture table, in this situation because of the femoral head position change, the leg is usually internally rotated 10°-15°. This is best checked by visualizing the femoral anteversion proximally and matching it with correct rotation at the knee.



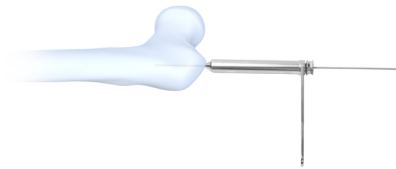
Palpate the greater trochanter. Make a 1-3cm incision proximal to the greater trochanter. Angle this incision posteriorly at its proximal end. Carry the incision through the fascia.



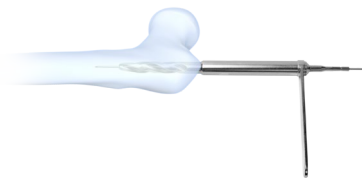
Standard Femoral Mode

1: Entry Portal

Assemble **Entry Inner Trochar (014050)** with **Entry Drill Sleeve (014051)** and place through the incision to bone. Adjust to align Inner Trochar with the axial line of femoral shaft in A/P and lateral image views. This may require placing pressure on Inner Trochar to align **Tip Threaded Pin (014044)** with the axial line of femur. Insert the Tip Threaded Pin into bone when the axial line and drill alignment is acceptable. The position will usually locate on the tip of greater trochanter. In addition, **Curved Awl, Cannulated (014001)** also can be used for initial opening of the greater trochanter tip.

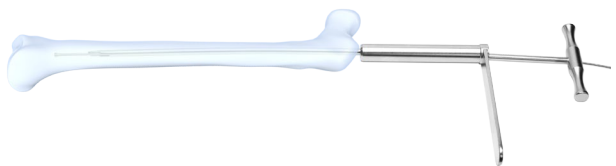


Remove Entry Inner Trochar, attach the **Entry Reamer (014002)** with power drill to ream the proximal section of femur through the Tip Threaded Guide Pin. This Entry Reamer enlarges proximal femur 0.5mm over the diameter of the nail head. Stopper on the Entry Reamer is able to prevent further excessive reaming of the proximal femur.



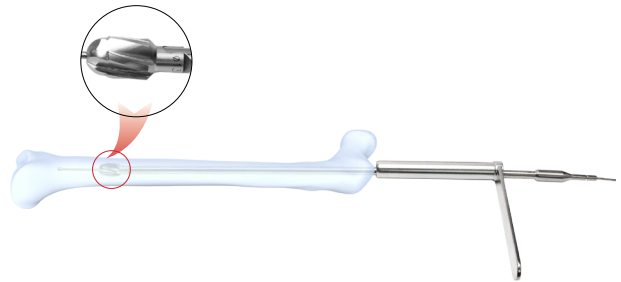
2: Fracture Reduction

Remove the Tip Threaded Pin, place **Reducer (014004)** through Entry Drill Sleeve to reduce the fracture. Once Reducer is in the medullary canal and has captured the distal fragment, **Ball Tip Guide Wire (014016)** is inserted through it into the distal femur.



3: Canal Preparation

Canal preparation is dependent on surgical decision. If reaming is planned, use progressive reamers through the Entry Drill Sleeve. Unreamed nails are selected based on preoperative planning, but should offer sufficient size to provide translational fill of the intramedullary canal in the mid-diaphysis. Once the Ball Tip Guide Wire is in place, remove the Reducer but leave Entry Drill Sleeve in place. Proceed to sequentially ream the femoral shaft 0.5 to 1.0mm or more above the chosen nail diameter through the Entry Drill Sleeve. For more curved femoral shaft, 0.5 to 1.0mm of over reaming may be beneficial.



4: Nail Selection

Determine nail diameter from image intensifier or sounding the canal if necessary. Never insert a nail that has a larger diameter than the last reamer used.

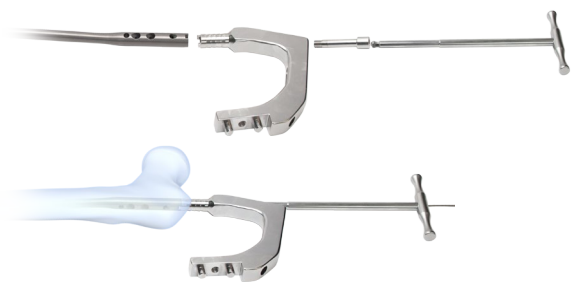
Position tip of the Guide Wire at the desired level of nail tip, considering fracture patterns and locking screw positioning.

Length of the nail could be decided by pre-operation measuring of patient's affected limb by measuring of the X-Ray image.

An Optional Instrument: **Radiographic Ruler (014053)** can also be ordered and used to assist nail selection.

5: Drill Guide Assembly

Insert **Guide Bolt (014018)** into the **Insertion Handle (014017)**. Use **Ball Tip Guide Bolt Wrench (014041)** to secure the bolt to nail, and then screw Guide Bolt onto the top of Insertion Handle.



This part can drive the nail into medullary canal through the Ball Tip Guide Wire. If necessary, **Impactor (014020)** is able to be connected onto the top of Insertion Handle to assist nail insertion. Pass the fracture carefully, remove the Guide Wire after nail is inserted and before inserting locking screws.



6: Proximal Locking

The **Outer Drill Sleeve, Long (014034)** is now inserted through the hole on **Inertion Handle (014017)**. A single 1-3cm incision is made over the point of contact with the skin. The incision is deepened by blunt dissection, down to the bone.

The Outer Drill Sleeve is now further inserted down to the bone with the aid of **Trochar, Long (014035)**. Replace the Trochar by inserting **Ø4.3 Drill Sleeve (014036)**. Attach **Ø4.3 Drill Bit (014037)** with power and insert through the Ø4.3 Drill Sleeve.

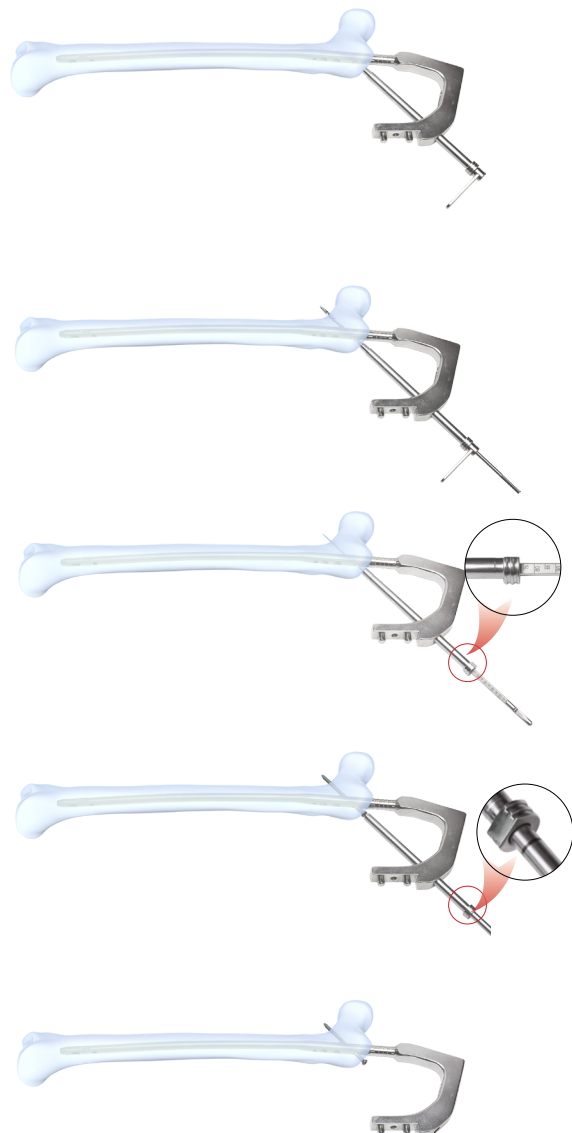


Introducing the 1st Proximal Screw:

To place screws at a 50° angle from the greater to lesser trochanter, the following option is available.

Screw Length Gauge --- Predrill through both cortices. Surgeon should check that the Outer Drill Sleeve, Long is positioned so that it is touching the bone. The hook end of **Screw Length Gauge (014039)** is inserted through the Outer Drill Sleeve, Long and pass through the bone. It is then drawn back so that the hook engages outer surface of the far cortex. The correct length of screw now can be read at the top of Outer Drill Sleeve, Long. The appropriate length of 4.8mm screw is selected and attached to the **Screwdriver for Locking Screw (014019)**. It is recommended that final tightening of the 4.8mm screw should always be under manual control by using Screwdriver for Locking Screw.

There is also a line laser marked on the Screwdriver for Locking Screw, to indicate when screw is been purchased on bone firmly.



Introducing the 2nd Proximal Screw:

Attach **Proximal Aiming Bar (014021)** onto the Insertion Handle and use **Proximal Bolt (014022)** tighten firmly by **Bolt Wrench SW5.0 (014023)**. Assemble the **Outer Drill Sleeve, Long (014034)** and **Trocar, Long (014035)**. Make a stab and push this Assembly through the hole on **Proximal Aiming Bar**, use same technique above mentioned to insert the 2nd screw.



7: Distal Locking

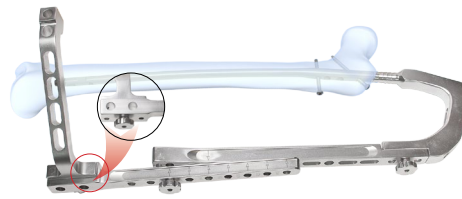
There may be some bending of the nail, due to pressure and weight of the soft tissues and bone. Medio-lateral bending of the nail will not affect the targeting significantly, since this is the plane of screw insertion, but any bending antero-posteriorly will result in failure of locking. The stabilizing system is therefore designed to correct antero-posterior alignment between the guide bar and the nail.

8: Stabilizing Distal Aiming Bar

Attach **Distal Aiming Bar (014024)** onto the **Proximal Aiming Bar (014021)** by using **Distal Bolt (014025)**. There are 2 holes at the distal end marked L/R on the Proximal Aiming Bar. Make sure to choose the correct one that will promise the curvature of aiming bar structure matches the curvature of femoral nail.



Attach **Distal Targeter (014026)** on the distal anterior side of the Distal Aiming Bar and tighten it by using **Distal Bolt (014025)** at the bottom of the Distal Targeter.



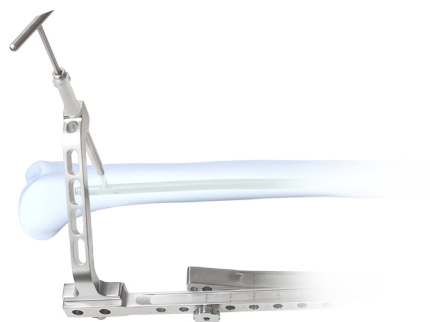
Outer Drill Sleeve, Short (014027) is inserted through the hole on Distal Targeter down to the skin anteriorly, and by palpation is centered over the middle of femur. The point of contact with the skin is noted. An incision is made at this point, down to the deep fascia. Muscle is then split longitudinally down to the bone.



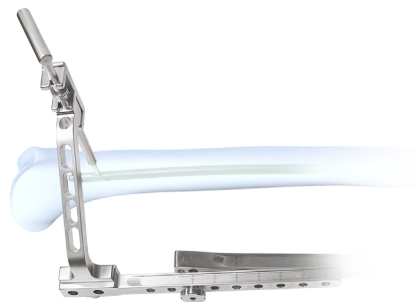
Trochar, Short (014028) is inserted into the Outer Drill Sleeve, and the two pushed together down to the bone. This assembly is centered over the middle of femoral shaft by palpation. Withdraw the Trochar, insert **Ø5.2 Drill Sleeve (014029)** and start drilling by using **Ø5.2 Drill Bit (014030)**. The anterior cortex is only then drilled.



Replace Ø5.2 Drill Sleeve & Ø5.2 Drill Bit by **Positioning Rod Drill (014031)** to clear the small bone chips. Remove this Position Rod Drill, and then **Position Rod (014032)** is inserted through the hole drilled on Distal Targeter, and the hole in the anterior femoral cortex down to the nail, contact being confirmed by tapping its tip onto the distal platform of nail.



E-Block (014033) is now attached and upper fork fits into the groove on the Positioning Rod shaft. The other two forks grip the Distal Targeter. Positioning Rod is now properly held so that its tip is in contact with the nail platform.



Note:

If contact with nail platform is not achieved even after attach the E-Block properly, and then the surgeon has to push the Positioning Rod tip down until it touches the platform for M / L screw insertion. Otherwise, there probably a risk of M / L screw will lose its position for distal locking.

If the Positioning Rod handle is pushed too hard, it is sometimes possibly to push the tip of Positioning Rod pass the nail. This must be avoided, since it will result in the drill bit passing posterior to the nail. Gentle contact is required.

9: Distal Locking Screw Insertion

Outer Drill Sleeves, Long (014034) are now inserted through each of the media-lateral holes in the **Distal Aiming Bar (014024)**. A single 1-3cm incision is made over the points of contact with the skin, down through the deep fascia. The incision is deepened by blunt dissection, splitting the ilio-tibial tract longitudinally, down to the bone, taking care to keep the incision in line with the fibers of ilio-tibial band. Outer Drill Sleeve, Long is now further inserted down to the bone with the aid of **Trochar, Long (014035)**.



Remove Trochar, Long insert the **Ø4.3 Drill Sleeve (014036)**, use **Ø4.3 Drill Bit (014037)** For drilling preparation. The surgeon now grips the T-handle of **Positioning Rod (014032)** to keep its tip against the nail, and maintains this position throughout the drilling procedures. The Drill Sleeves inserted onto **Distal Targeter (014026)** – closest to the distal hole at the distal area of the nail- now is chosen to be drilled as the first media-lateral locking screw hole.

Using **Screw Length Gauge (014039)** (Screw Length Gauge using method please see: Screw Length Gauge page 4) to measure the screw length properly.

Remove **Ø4.3 Drill Sleeve (014036)**, attached the screw by **Screwdriver for Locking Screw (014019)**. Then place the 1st screw through **Outer Drill Sleeve (014034)**, so that the screw passes through nail, and engages the far cortex. Use same technique to place the 2nd media-lateral screw.



Note:

There are 2 different kinds of holes on the distal end of professional femoral nail. The one close to the distal end of nail is an elongated hole, which can be used for dynamic locking. The other hole is a round hole which can be used for static locking. To choose which hole of how to lock will depend on the fracture type.

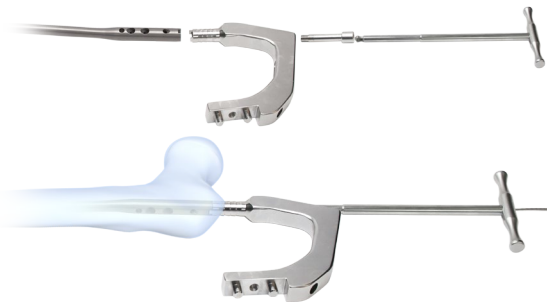
A check is now carried out with the Image Intensifier or by X-ray to confirm that both screws have passed through the nail and that reduction has been maintained. The Sleeves and Targeter are removed.

10: End Cap Placement

If end cap is considered, then attach the appropriate end cap by Screwdriver for Locking Screw.

**Recon Mode**

6.4mm Cannulated Recon Screws are to be used into the femoral head. Insert **Guide Bolt (014018)** into the **Insertion Handle (014017)**. Use **Ball Tip Guide Bolt Wrench (014041)** to secure the bolt to nail, and then screw the Guide Bolt onto the top of Insertion Handle.



This part can drive the nail into the medullary canal. If necessary, **Impactor (014020)** is able to be connected onto the top of Insertion Handle to assist nail insertion.

**Note:**

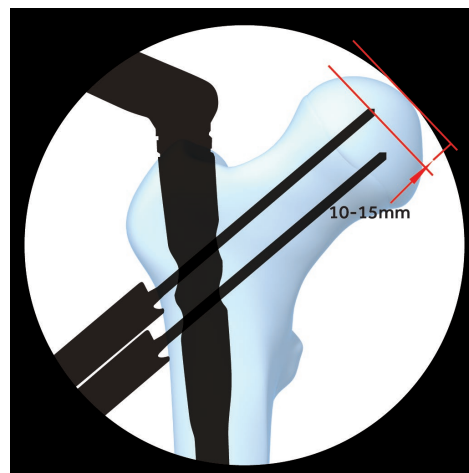
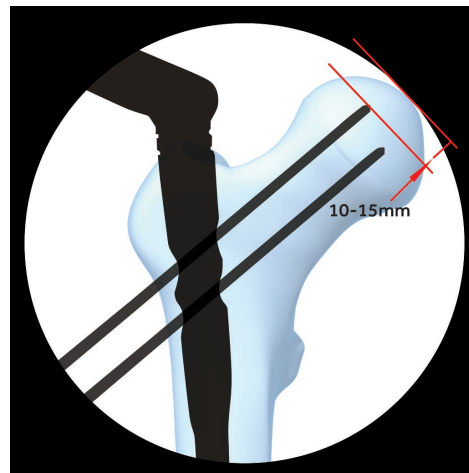
Nail insertion of Recon Mode applies the same techniques of Standardized Femoral Mode.

1: Proximal locking

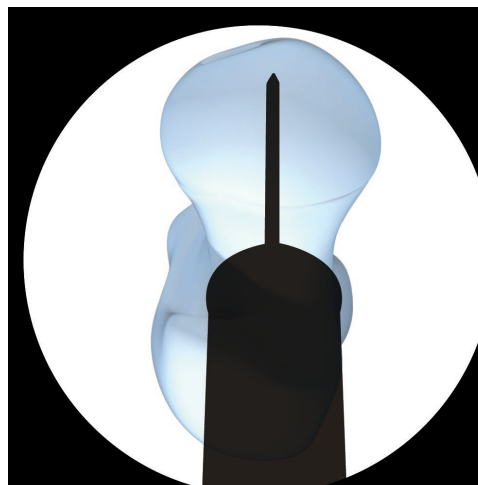
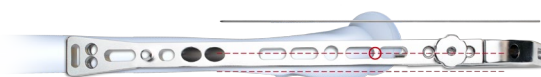
Note:

Two aspects of 6.4mm proximal Cannulated Recon screw placement into the femoral head must be noted before drilling into the femoral head: Alignment of the 6.4mm Cannulated Recon Screws in femoral Head at (1)M/L view for anteversion angle; (2) A/P view for collodiaphysial angle

To begin, rotate the C-Arm into an A/P view, the half-concaved screw hole shape on the proximal side of femoral nail which is visualized radiographically to generally determine from preoperative planning what depth of nail insertion will be required to allow both screws to be centered in the femoral head. (Demonstration of 2 Guide pins-014045 on the skin of femoral head with proper image intensifier checking is a very useful technique before confirming the proper position of 6.4mm Cannulated Recon Screws placement into femoral head. Mark these proper positions with a skin marker on the skin of femur. Alternatively, insertion of 2 Guide pins-014045 into the femoral head could be more precise and clear under image intensifier. However, this technique could require second time Guide Wire insertion into the femoral head to find its proper position anteriorly and posteriorly). As a rule, the inferior screw is placed first, though in situations where the neck is large enough, the proximal screw can be placed, again, approximately 4-5mm from the superior cortical margin of the femoral neck. These screws are angled at 130° in relation to the shaft. If both screws are not able to seat within the femoral head, it is possible that too much varus positioning of the proximal fragment has occurred, improper fracture reduction of the proximal side, or the proximal nail entry portal is too lateral.



Next, rotate the C-Arm proximally until a true line of the hip is visualized, this gives the correct axis of alignment of anteversion. Rotate the handle of **Proximal Aiming Bar (014021)** until it bisects the femoral head in the lateral view. Then adjust the C-Arm anteriorly and posteriorly, then insert a Guide Pin-014045 into the femoral head. Under Intensifier the proper Guide Pin position anteriorly and posteriorly can be determined even there is image blocking by the proximal side of nail. This should assist in setting the correct anteversion position of the screws.

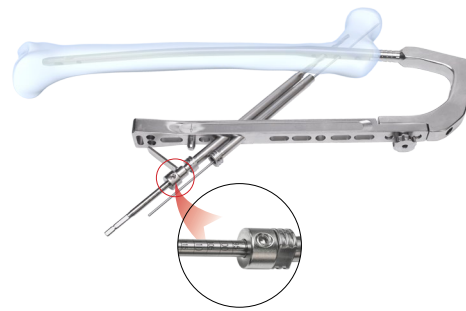


6.4mm Cannulated Recon Screw Placement Technique:

Make an incision at the entry holes of the proximal screw sleeves, and then connect the 2 puncture wounds for approximately a 3cm incision that will accommodate the insertion of both screws. Insert the assembly of **Ø6.4 Drill Sleeve (014047) & Trochar (014035)** and push the assembly close to the bone as much as possible. Remove the Trochar and replace by **Ø2.5 Drill Sleeve (014043)**, insert the **Tip Threaded Guide Pin (014044)** into Ø2.5 Drill Sleeve and connect to power. Drill into the femoral neck and forward to the desired depth and position, but at a distance of least 5mm from the joint, check with image intensifier to ensure the proper position. Remove the Ø2.5 Drill Sleeve and insert **Pin Measuring Gauge (014046)** to decide the desired drill length of femoral neck. Insert the Ø6.4 Drill Sleeve,



remove Tip Threaded Guide Pin and set the desired drill length of **Ø6.4 Step Drill Bit (014048)** by using its **Ø6.4 Stopper (014049)**. Check the alignment in A/P and 15° lateral views before removing the Ø6.4 Drill Bit, finally screw length can be checked out from the calibrations on the Ø6.4 Drill Bit.



Attach the appropriate length 6.4mm screw to **Screwdriver for 6.4mm Recon Screw (014040)**. Tighten proximal screws when the traction is released to maximize compression at the fracture site. Once an acceptable position is obtained, detach the Screwdriver for 6.4mm Recon Screw, now from the Screws by wrenching counter-clockwise the Connecting Rod inside the Screwdriver for 6.4mm Recon Screw proximal locking is completed. Remove the Drill Sleeve, and now prepare for distal locking.



2: Distal Locking

The distal locking screw insertion of Recon Mode follows the same techniques with the distal locking screw placement of **Standard Femoral Mode**.

If there is any doubt about the correct length of locking screw, either in respect of the measurement recorded following drilling, or because the surgeon omitted this step, the **Screw Length Gauge (014039)** may be used as follows: the surgeon should first check that the **Outer Drill Sleeve, Long (014034)** is positioned so that it is touching the bone.



The hooked end is inserted down to the Outer Drill Sleeve, Long and through the bone. It is then drawn back so that the hook engages the outer surface of the distal cortex. The correct length of screw can be read at the top of the Outer Drill Sleeve, Long. This **Screw Length Gauge (014040)** is only suitable for using with DXF Professional Femoral Nails, since its accuracy depends on a fixed length of the Outer Drill Sleeve, Long.



3: End Cap Placement

If the end cap is considered, then attach the appropriate end cap by **Screwdriver for 6.4mm Recon Screw**. Insert the end cap, and then turn the Connection Rod counterclockwise to finally remove the cannulated T-Handle.



3: Closure

On completion of the procedure, unscrew the Distal & Proximal Bolts, remove the aimingbars, wounds are irrigated and closed in a standard fashion.

Post-Operative Management

1: Weight Bearing

The patient is mobilized on crutches immediately, but the knee is rested in an immobilizer for 1-2 days. Dressings are changed daily, and, after the drain has been removed, the knee may be mobilized freely. With a stable fracture, a patient may weight bear as able increasing to full weight bearing by 4 weeks. If the fracture is unstable, toe touchweight bearing is permitted immediately, with gradually increasing partial weight bearing over the next 6 weeks.

Full weight bearing is only advised once there is some continuity of callus across the fracture site. Fractures with severe comminution, should be supported before weight bearing with an external brace.

2: DXF Professional Femoral Nail Extraction Technique

Nail removal may normally be carried out after 18-24 months provided that there is radiological evidence of union. Union may be expected to occur after 6 months with nailing procedures in the femur. The situation may be different in open fractures, nonunions or corrective osteotomies. In such cases the nail should be left in situ for a minimum of 24 months.

Place the patient in the supine position on a radiolucent table. After prepping and draping, remove any distal screws and all but one proximal screw from the nail, leaving the screw closest to the driving end of the nail.

Under fluoroscopy, the proximal end of the nail is exposed through a small incision.

It may be necessary to clear some new bone from the end of the nail. The nail end cap is removed with the Screwdriver for Locking Screw, and the **Extractor (014042)** is screwed on to the nail, and tightened firmly. This should be accomplished prior to the removal of the proximal locking screws to prevent the nail from deflecting posteriorly.



The locking screw proximal is now removed. The nail is then removed, either by manual traction on the Extractor, or by reverse hammering using **Impactor (014020)**, after the Impactor screwing onto the proximal end of Extractor.



Appendixes

Appendix Table 1

DXF Professional Femoral Nails (Standard Femoral Mode)		
Process	Factors	Ø9, 10, 11, 12mm, Ø13 (CM)
Entry	Proximal Color	L & R: Dark Gray
	Proximal Dia.	13mm
	Entry Reamer-13.5mm	Entry Reamer (014002)
	Entry Sleeve	Entry Drill Sleeve (014051)
Proximal Locking	No.of Proximal Locking Holes	2
	Proximal Locking Screws	Ø4.8mm
	Proximal Color	Dark Gray
	Drill Bits for Proximal Locking	Drill Bit, Ø4.3mm (014037)
	Drill Sleeve for Proximal Locking	Outer Drill Sleeve, Long (014034)
		Drill Sleeve, Ø4.3mm (014036)
Distal Locking	Distal Color	L & R: Dark Gray
	No.of Distal Locking Holes	2
	Distal Locking Screws	Ø4.8mm
	Positioning Instruments	Outer Drill Sleeve, Short (014027)
		Drill Sleeve, Ø5.2mm (014029)
		Drill Bit, Ø5.2mm (014030)
		Positioning Rod Drill (014031)
		Positioning Rod (014032)
		E-Block (014033)
	Drill Bits for Distal Locking	Drill Bit, Ø4.3mm (014037)
	Drill Sleeve for Distal Locking	Outer Drill Sleeve, Long (014034)
		Drill Sleeve, Ø4.3mm (014036)

Appendix Table 2

DXF Professional Femoral Nails (Recon Mode)		
Process	Factors	Ø 9, 10, 11, 12mm, Ø 13 (CM)
Entry	Proximal Color	L & R: Dark Gray
	Proximal Dia.	13mm
	Entry Reamer-13.5mm	Entry Reamer (014002)
	Entry Sleeve	Entry Drill Sleeve (014051)
Proximal Locking	No.of Proximal Locking Holes	2
	Proximal Locking Screws	Ø 6.4mm
	Proximal Color	Dark Gray
	Drill Bits for Proximal Locking	Drill Bit, Ø 6.4mm (014048)
	Drill Sleeve for Proximal Locking	Outer Drill Sleeve, Long (014034)
		Drill Sleeve, Ø 2.5mm (014043)
Distal Locking	Distal Color	L & R: Dark Gray
	No.of Distal Locking Holes	2
	Distal Locking Screws	Ø 4.8mm
	Positioning Instruments	Outer Drill Sleeve, Short (014027)
		Drill Sleeve, Ø5.2mm (014029)
		Drill Bit, Ø5.2mm (014030)
		Positioning Rod Drill (014031)
		Positioning Rod (014032)
		E-Block (014033)
	Drill Bits for Distal Locking	Drill Bit, Ø 4.3mm (014037)
	Drill Sleeve for Distal Locking	Outer Drill Sleeve, Long (014034)
		Drill Sleeve, Ø 4.3mm (014036)

Product Information

Implants

Femoral Nail



Product No.	Specification (mm)	Direction	Material	Remark
21120932	Ø9 × 320	Left	TA	
21120934	Ø9 × 340	Left	TA	
21120936	Ø9 × 360	Left	TA	
21120938	Ø9 × 380	Left	TA	
21120940	Ø9 × 400	Left	TA	
21120942	Ø9 × 420	Left	TA	
21120944	Ø9 × 440	Left	TA	
21121032	Ø10 × 320	Left	TA	
21121034	Ø10 × 340	Left	TA	
21121036	Ø10 × 360	Left	TA	
21121038	Ø10 × 380	Left	TA	
21121040	Ø10 × 400	Left	TA	
21121042	Ø10 × 420	Left	TA	
21121044	Ø10 × 440	Left	TA	
21121132	Ø11 × 320	Left	TA	
21121134	Ø11 × 340	Left	TA	
21121136	Ø11 × 360	Left	TA	
21121138	Ø11 × 380	Left	TA	
21121140	Ø11 × 400	Left	TA	
21121142	Ø11 × 420	Left	TA	
21121144	Ø11 × 440	Left	TA	
21121232	Ø12 × 320	Left	TA	CM
21121234	Ø12 × 340	Left	TA	CM
21121236	Ø12 × 360	Left	TA	CM
21121238	Ø12 × 380	Left	TA	CM
21121240	Ø12 × 400	Left	TA	CM
21121242	Ø12 × 420	Left	TA	CM
21121244	Ø12 × 440	Left	TA	CM
21121332	Ø13 × 320	Left	TA	CM
21121334	Ø13 × 340	Left	TA	CM
21121336	Ø13 × 360	Left	TA	CM
21121338	Ø13 × 380	Left	TA	CM
21121340	Ø13 × 400	Left	TA	CM
21121342	Ø13 × 420	Left	TA	CM
21121344	Ø13 × 440	Left	TA	CM

Product No.	Specification (mm)	Direction	Material	Remark
21130932	Ø9 × 320	Right	TA	
21130934	Ø9 × 340	Right	TA	
21130936	Ø9 × 360	Right	TA	
21130938	Ø9 × 380	Right	TA	
21130940	Ø9 × 400	Right	TA	
21130942	Ø9 × 420	Right	TA	
21130944	Ø9 × 440	Right	TA	
21131032	Ø10 × 320	Right	TA	
21131034	Ø10 × 340	Right	TA	
21131036	Ø10 × 360	Right	TA	
21131038	Ø10 × 380	Right	TA	
21131040	Ø10 × 400	Right	TA	
21131042	Ø10 × 420	Right	TA	
21131044	Ø10 × 440	Right	TA	
21131132	Ø11 × 320	Right	TA	
21131134	Ø11 × 340	Right	TA	
21131136	Ø11 × 360	Right	TA	
21131138	Ø11 × 380	Right	TA	
21131140	Ø11 × 400	Right	TA	
21131142	Ø11 × 420	Right	TA	
21131144	Ø11 × 440	Right	TA	
21131232	Ø12 × 320	Right	TA	CM
21131234	Ø12 × 340	Right	TA	CM
21131236	Ø12 × 360	Right	TA	CM
21131238	Ø12 × 380	Right	TA	CM
21131240	Ø12 × 400	Right	TA	CM
21131242	Ø12 × 420	Right	TA	CM
21131244	Ø12 × 440	Right	TA	CM
21131332	Ø13 × 320	Right	TA	CM
21131334	Ø13 × 340	Right	TA	CM
21131336	Ø13 × 360	Right	TA	CM
21131338	Ø13 × 380	Right	TA	CM
21131340	Ø13 × 400	Right	TA	CM
21131342	Ø13 × 420	Right	TA	CM
21131344	Ø13 × 440	Right	TA	CM

Ø6.4mm Cannulated Recon Screw

Product No.	Length (mm)	Material	Remark
21764065	65	TA	
21764070	70	TA	
21764075	75	TA	
21764080	80	TA	
21764085	85	TA	
21764090	90	TA	
21764095	95	TA	
21764100	100	TA	
21764105	105	TA	
21764110	110	TA	
21764115	115	TA	
21764120	120	TA	CM



Ø4.8mm IM Nail Interlocking Screw

Note: Using for both Femoral and PFNA/Gamma Nails

Product No.	Length (mm)	Material	Remark
21748026	26	TA	
21748028	28	TA	
21748030	30	TA	
21748032	32	TA	
21748034	34	TA	
21748036	36	TA	
21748038	38	TA	
21748040	40	TA	
21748042	42	TA	
21748044	44	TA	
21748046	46	TA	
21748048	48	TA	
21748050	50	TA	
21748052	52	TA	
21748054	54	TA	
21748056	56	TA	
21748058	58	TA	
21748060	60	TA	
21748064	64	TA	
21748068	68	TA	
21748072	72	TA	
21748076	76	TA	
21748080	80	TA	
21748084	84	TA	



Femoral Nail End Cap

Product No.	Extension Length	Material	Remark
21970800		TA	
21970805	5	TA	
21970810	10	TA	
21970815	15	TA	



Instruments

014001 Cannulated Awl



014002 Entry Reamer



014003 T-handle with Quick Coupling



014004 Reducer



014005 Flexible Reamer Shaft



014006 Reamer Head, Ø8.5mm



014007 Reamer Head, Ø9mm



014008 Reamer Head, Ø9.5mm



014009 Reamer Head, Ø10mm



014010 Reamer Head, Ø10.5mm



014011 Reamer Head, Ø11mm



014012 Reamer Head, Ø11.5mm



014013 Reamer Head, Ø12mm



014014 Reamer Head, Ø12.5mm



014015 Reamer Head, Ø13mm



014016 Ball Tip Guide Wire



014017 Insertion Handle



014018 Guide Bolt



014019 Screwdriver for Locking Screw, SW3.5



014020 Impactor



014021 Proximal Aiming Bar (320-440mm)



014022 Proximal Bolt



014023 Bolt Wrench, SW5.0



014024 Distal Aiming Bar (320-440mm)



014025 Distal Bolt



014026 Distal Targeter



014027 Outer Drill Sleeve, Short



014028 Trochar, Short



014029 Drill Sleeve, Ø5.2mm



014030 Drill Bit, Ø5.2mm



014031 Positioning Rod Drill



014032 Positioning Rod



014033 E-Block



014034 Outer Drill Sleeve, Long



014035 Trochar, Long



014036 Drill Sleeve, Ø4.3mm



014037 Drill Bit, Ø4.3mm



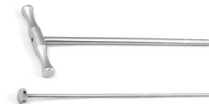
014038 Stopper, Ø4.3mm



014039 Screw Length Gauge



014040 Screwdriver for 6.4mm Recon Screw



014041 T-handle Wrench, SW6.5



014042 Extractor



014043 Drill Sleeve, 2.5mm



014044 Tip Threaded Pin, Ø2.5 x 320mm



014045 Guide Pin, Ø2.5 x 320mm



014046 Depth Gauge



014047 Drill Sleeve, Ø6.4mm



014048 Step Drill Bit, Ø6.4mm



014049 Stopper, Ø6.4



014050 Sleeve for Guide Wire



014051 Protection Sleeve



014052 L Wrench, SW3.0



Optional Instruments

014053 Radiographic Ruler





Furthermore, product availability is subject to the regulatory and/or medical practices in individual markets. Some or all products described in those documents may not be available in your region. Please contact your Dunitech representative for information regarding product availability in your area.

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