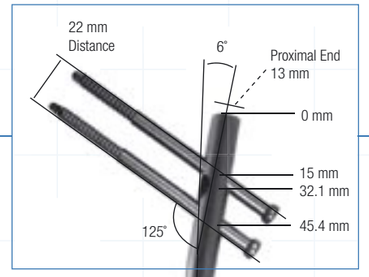
FEMORAL TROCH ENTRY NAILING SYSTEM

Proximal locking options allow for two screws into the femoral head or one screw from the greater to lesser trochanter

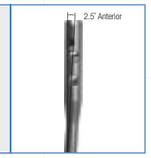
Unique proximal crosslocking option allows for one recon screw and one antegrade screw at the same time

Large core diameter of the proximal 6.5 mm screws decreases risk for screw breakage



125° neck shaft angle facilitates screw placement into the femoral head

Proximal 2.5° anterior bend and 6° lateral bend provide optimal anatomic fit in the proximal femur



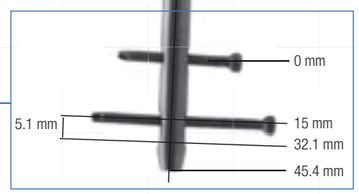
8° of anteversion for anatomic proximal screw placement

Enlarged nail cannulation accepts the ball nose guide wire, eliminating the need for an exchange tube

2.2 meter radius of curvature accommodates the anterior bow of the femur

Distal 5° bend (for 9 mm nails) and 3° bend (for 11 mm and 13 mm nails) facilitate ease of insertion through the proximal intertrochanteric/ subtrochanteric region

Chamfer on the front of the distal tip facilitates insertion, and decreases the risk of anterior cortex penetration in the distal femur



Cat No: 0612-75-502 version 1

References
1. Annual Book of ASTM Standards, Section 13-Medical Devices and Services.

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Issued: 02/06

TRAUMA & EXTREMITIES GROUP

VERSANAIL™
Femoral Troch Entry

SURGICAL TECHNIQUE

FEMORAL TROCH ENTRY NAILING SYSTEM OPTIONS MADE EASY

- **EXCELLENT** insert design
- **ANATOMIC** fit by design
- **UNIQUE** locking abilities
- **PERCUTANEOUS** instrumentation

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Note: This brochure presents a surgical technique available for use with the DePuy International, VersaNail™ Platform instruments and implants. Surgeons may need to make modifications as appropriate in their own surgical technique with these devices depending on individual patient requirements.

OPTIONS MADE EASY

The DePuy VersaNail™ Troch Entry Femoral Nail is part of a long bone nailing system that offers a complete portfolio of implants and instruments based on a standardised technology platform.

DESIGN SUMMARY

The VersaNail™ Troch Entry Nail from the VersaNail™ Platform offers an implant design to treat femoral fractures with unique and versatile locking options. This femoral nail incorporates an excellent anatomic design for insertion through the greater trochanter. The VersaNail™ Platform instrumentation is designed to provide options and flexibility for many intraoperative approaches (including percutaneous methods) while maintaining ease-of-use and commonality.

Implant Material

All implants are manufactured from Ti-6Al-4V grade, type II anodised titanium alloy (TiMAX™) due to this material's superior properties. TiMAX™ offers a lower modulus of elasticity and increased fatigue strength over stainless steel[1].

Implant Overview

The VersaNail™ Troch Entry Nail is designed to treat:

- Subtrochanteric fractures associated with shaft fractures
- Femoral shaft fractures
- Long subtrochanteric fractures
- Ipsilateral femoral neck and shaft fractures
- Proximal or mid-shaft femoral non-unions and malunions
- Pathologic fractures in osteoporotic bone of the trochanteric and diaphyseal areas
- Revision procedures
- Pertrochanteric fractures

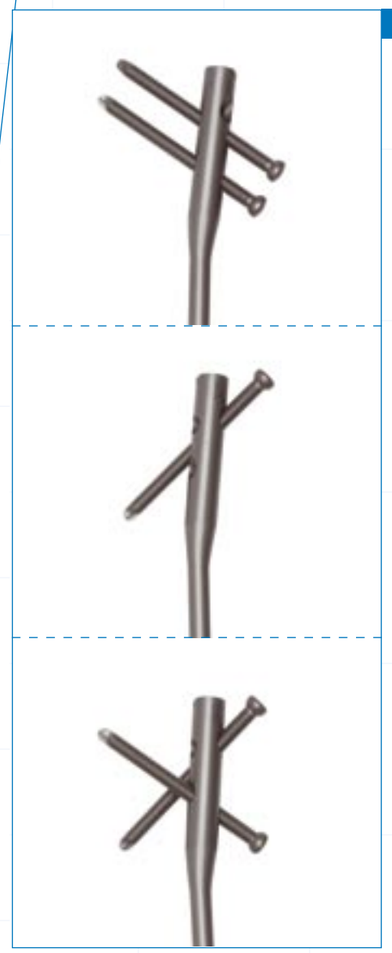


Fig. 1 The VersaNail™ Troch Entry Nail screw portal configurations provide a number of proximal locking possibilities (Fig. 1). The VersaNail™ Troch Entry Nail is locked with 6.5 mm screws proximally and 4.5 mm screws distally. The locking instrumentation is colour-coded for ease of use.

Colour Guide	Screw Size	Drill Bit Size
Black	6.5 mm Cortical	5.3 mm
Gold	6.5 mm Cancellous	6.5 mm/4.8 mm Step Drill
Silver	3.2 mm Guide Pin Sleeve	
Green	4.5 mm Cortical	3.8 mm

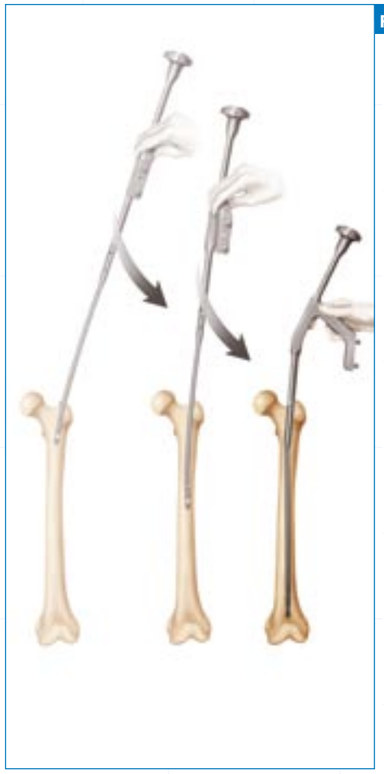


Fig. 2A The VersaNail™ Troch Entry Femoral Nail incorporates multiple bends for an excellent anatomic fit. It is designed to facilitate ease of insertion through the greater trochanter (Fig. 2A).

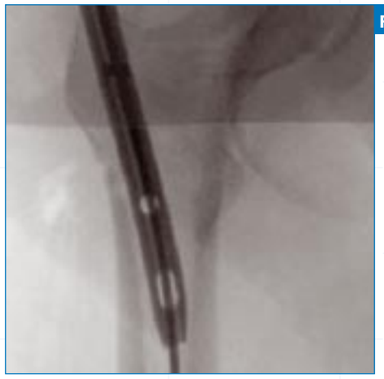


Fig. 2B The distal bend, in line with the anterior bow of the nail, is designed to negotiate the anatomic curve of the greater trochanteric and subtrochanteric entry into the femoral canal (Fig. 2B).

Fig. 3 Once fully seated in the femoral canal, the distal bend angles posteriorly, reducing potential stress on the anterior cortex (Fig. 3).

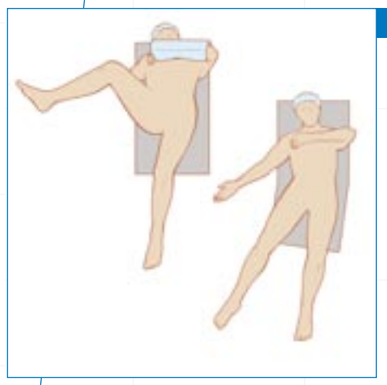


Fig. 4 **Patient Positioning**

Place the patient in the supine or lateral position on either a fracture or radiolucent imaging table, depending on surgeon preference. Lateral access to the proximal femur is required. The affected leg must be abducted and the trunk secured. The contralateral leg may be flexed at the hip or scissored below the affected leg (Fig. 4).

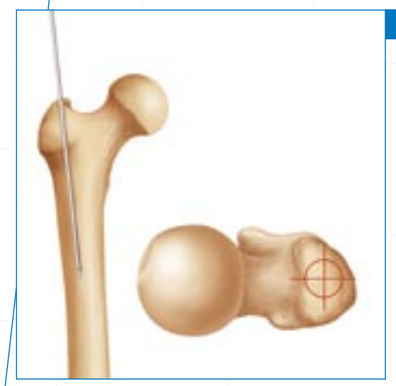


Fig. 5 **Surgical Approach and Entry Point**

Reference the greater trochanter. Identify the entry site, which is at the tip of the greater trochanter. Initiate the entry site with a 3.2 mm guide pin through a stab incision proximal to the trochanteric region, in line with the femoral axis (Fig. 5).

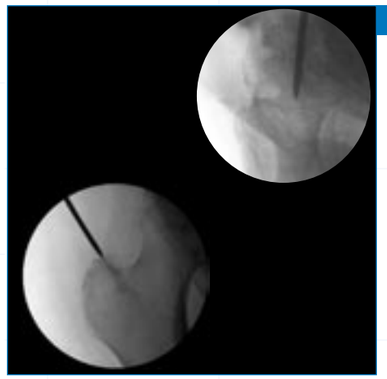


Fig. 6 Confirm correct entry location and guide pin placement radiographically with AP and lateral views. The guide pin should be in line with the femoral canal in the lateral view and angled approximately 6 degrees in the AP view. Care should be taken to ensure that the guide pin and channel reamer do not migrate laterally, causing varus malalignment (Fig. 6).

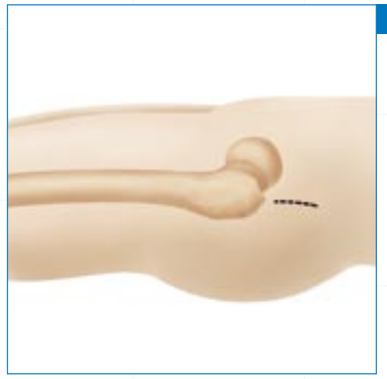


Fig. 7 Once the ideal entry point has been achieved, extend the entry incision to 1-2 cm. The fascia lata is divided along its fibers (Fig. 7).

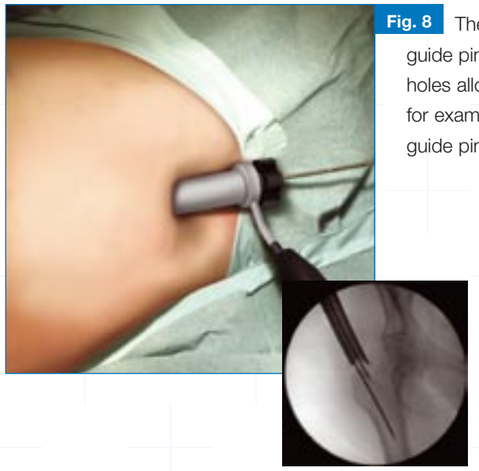


Fig. 8 The entry portal sleeve and trocar can be advanced over the guide pin down to the tip of the greater trochanter. Parallel guide holes allow for accurate adjustment of pin positioning. (See image for example.) Remove the trocar from the entry portal, keeping the guide pin in place (Fig. 8).

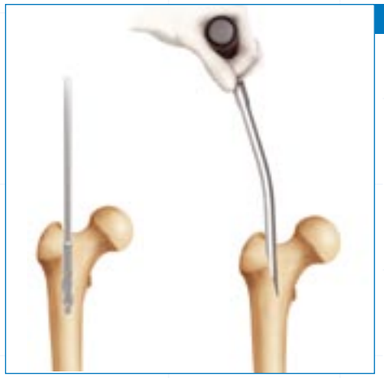


Fig. 9 **Canal Entry**

The entry site can be made using either an entry reamer or cannulated awl. Troch Entry Nails have a proximal diameter of 13 mm which extends 6 cm. The entry reamers have an enlarged section that matches the proximal section of the nail. This allows the final depth of the entry reamer to be visualised fluoroscopically. Both 13 mm and 14 mm entry reamers are available depending on surgeon preference (Cat. No. 2810-13-028 or 2810-13-029). An excellent starting hole is especially important when nailing proximal fracture patterns, those with short segments and/or medial comminution. Use AP and lateral fluoroscopic views to confirm accurate placement. Use the awl (Cat. No. 2810-01-005) or entry reamer to open the proximal femur at the greater trochanter.

If required, the entry portal sleeve (Cat. No. 2810-13-005) is available for soft tissue protection (Fig. 9).

Fig. 10 Once access to the femoral canal has been gained, place the ball nose guide wire into the entry site utilising the guide wire gripper. Two guide wire gripper styles are available depending on surgeon preference: the pistol grip (Cat. No. 2810-01-001) or the T-Handle grip (Cat. No. 2810-01-002) (Fig. 10).

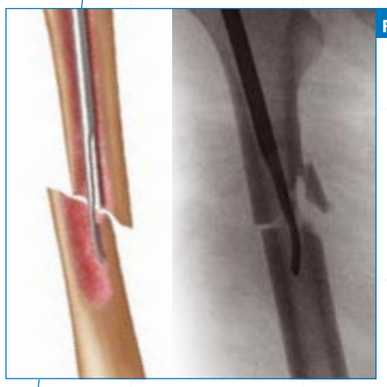


Fig. 11 **Fracture Reduction**

Obtain appropriate anatomic reduction in order to restore length, anatomic axis alignment and rotation of the injured limb. Reduction can be achieved through the surgeon's preferred method such as traction, external fixator, external aids or joysticks. To aid in manipulating the fracture fragments and passing the ball nose guide wire, large (7.5 mm diameter, Cat. No. 2810-01-007) and small (6.5 mm diameter, Cat. No. 2810-01-008) reduction tools are available.

Insert the reduction tool into the medullary canal, past the fracture site. Once the fracture is in alignment, pass the ball nose guide wire, available in both 80 cm (Cat. No. 2810-01-080) and 100 cm (Cat. No. 2810-01-100) lengths, across the fracture site. Remove the reduction tool (Fig. 11).

Fig. 12 **Canal Preparation**

Achieve proper alignment of the injured limb prior to reaming and maintain it throughout the reaming process to avoid eccentric reaming. Commence reaming by placing the VersaNail™ flexible reamer over the DePuy ball nose guide wire. Ream the medullary canal in millimeter increments until cortical bone is reached and in half-millimeter increments thereafter. Surgeon preference should dictate the actual extent of intramedullary reaming. Monitor the reaming procedure using image intensification to avoid eccentric or excessive cortical reaming (Fig. 12).

Fig. 13 An X-ray template is available to determine nail size preoperatively (Cat. No. 2810-13-033, right, and Cat. No. 2810-13-034, left) (Fig. 13).

Nail Diameter Selection

In general, a nail diameter 1 to 1.5 mm less than the final reamer diameter is chosen. Troch Entry Nails are available in 9, 11 and 13 mm diameters.

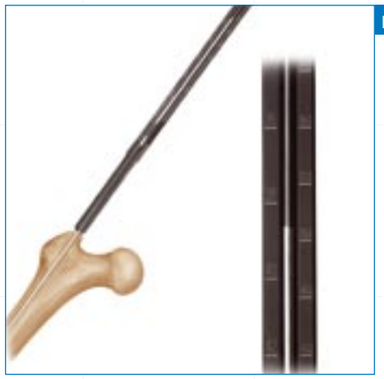


Fig. 14 **Nail Length Selection**

With the tip of the ball nose guide wire at the level of the desired depth of nail insertion, slide or snap the nail length gauge (Cat. No. 2810-01-031) onto the ball nose guide wire until it contacts the bone, ensuring that the tip does not fall into the existing trochanteric entry canal, thus providing an inaccurate measurement. To obtain the appropriate nail length, read the measurement mark on the nail length gauge that is closest to the beginning of the black transition area on the guide wire. If a nail of the exact measured length is not available, choose a shorter nail of the next closest available length. A direct measurement can also be taken of the uninjured extremity using either radiographs with magnification markers, or directly on the uninjured limb (Fig. 14).

Fig. 15 **Nail Insertion**

The VersaNail™ Troch Entry Nail is available in side specific (right or left) sizes. Ensure that the appropriate nail is chosen depending on the side of the injury.

Place the nail on the femoral jig in the correct orientation (the proximal lateral bend should angle toward the jig such that the anterior bow of the nail corresponds with the anterior bow of the femur). Secure the nail to the jig by inserting the jig bolt through the cannulation of the jig nose and tightening with the jig bolt (Cat. No. 2810-13-006) and T-Handle (Cat. No. 2810-01-004). Check jig alignment with sleeves and drill bit prior to implanting (Fig. 15).

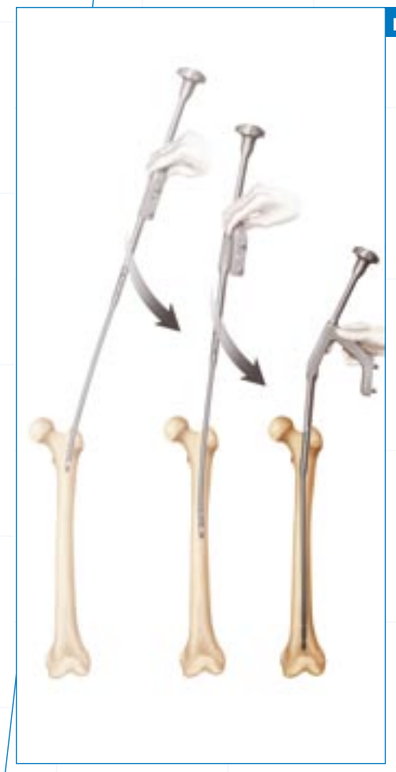


Fig. 16 Insert the nail over the 3 mm ball nose guide wire into the medullary canal. Take care not to strike the jig or targeting arm with the mallet. Instead use the hammer pad (Cat. No. 2810-13-011) with the impaction rod and slotted mallet. It may be helpful to preliminarily insert the trochanteric nail utilising its bow to facilitate clearance of the medial femoral cortex of the proximal fragment. To do this, rotate the insertion jig anteriorly (towards the ceiling). In this position the distal bend in the nail will be angled laterally to aid in passing the nail through the greater trochanteric entry site, and avoid medial cortical penetration. As the nail passes the medial cortex of the proximal fragment, slowly derotate the jig handle into the usual lateral position, so that the anterior bow of the nail now corresponds with the anterior bow of the femur. If the nail requires substantial force to advance, remove it and ream an additional millimeter. Avoid excessive force when inserting the nail (Fig. 16). Confirm fracture reduction and ensure appropriate nail insertion depth proximally and distally with biplanar fluoroscopy. Remove ball nose guide wire.

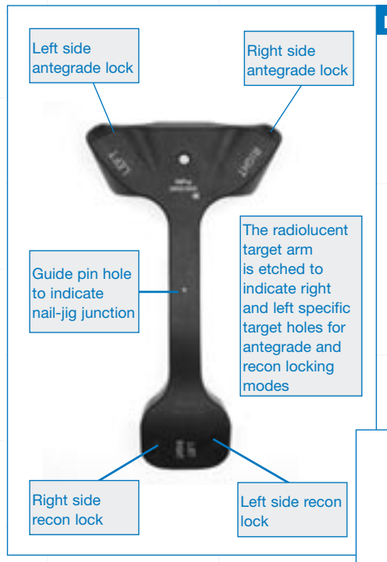


Fig. 17 **Locking**

Prior to locking both proximally and distally, adjust traction, and check femoral length and rotational alignment.

Proximal Locking

Attach the radiolucent targeting arm to the femoral jig and tighten using the knob on the targeting arm. Ensure that targeting arm is properly secured to the jig for accurate targeting. Prior to drilling, check jig position to ensure that the jig has not externally rotated. The same targeting arm can be used for both left and right nails and is marked to identify which locking option is being targeted (Fig. 17).

Fig. 18 It is important to recheck the AP and lateral views of the hip prior to inserting locking screws directed into the femoral head. A 3.2 mm x 17.5 in guide pin (Cat. No. 9030-03-004) and guide pin sleeve (Cat. No. 2810-13-018) are available to check screw positioning prior to drilling (Fig. 18).

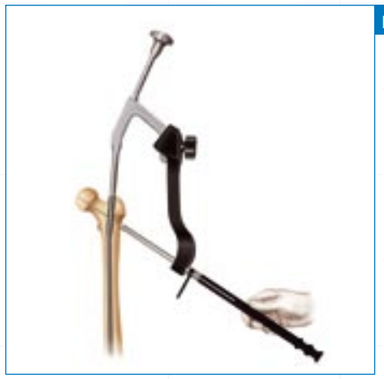


Fig. 19 A measurement can be taken from the guide pin using the 6.5 mm Screw Depth Gauge (Cat. No. 2810-13-035) (Fig. 19).

Fig. 20 Place the 6.5 mm proximal locking screws with the locking instrumentation. The 6.5 mm solid cortical screws are drilled with a 5.3 mm drill bit. The 5.3 mm drill bit and corresponding drill sleeve are colour-coded black. The 6.5 mm/4.8 mm step drill bit and corresponding drill sleeve are colour-coded gold (Fig. 20).

Caution: Utilise fluoroscopy when drilling into the femoral head so as to not penetrate the subchondral bone. As noted above, a 3.2 mm x 17.5 in guide pin (Cat. No. 9030-03-004) and guide pin sleeve (Cat. No. 2810-13-018) are available to check screw positioning prior to drilling.

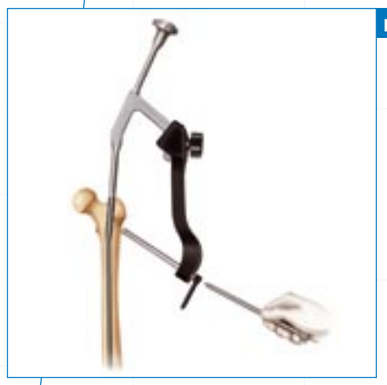


Fig. 21 Place the 6.5 mm screw sheath (Cat. No. 2810-13-020) and trocar (Cat. No. 2810-13-021) through the appropriate hole in the targeting jig to locate the incision site. Make a stab incision and advance the sheath and trocar to the bone (Fig. 21).

Fig. 22 Remove the trocar and replace it with the 5.3 mm drill sleeve (Cat. No. 2810-13-022). Using the 5.3 mm drill bit through the drill sleeve, drill to, but not through, the far cortex (Fig. 22).

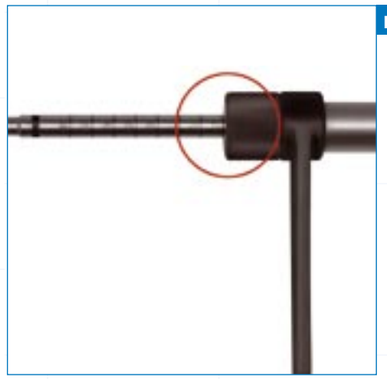


Fig. 23 Ensure that the drill sleeve is on bone and read the calibration on the drill bit at the end of the drill sleeve to determine the appropriate screw length (Fig. 23).

Fig. 24 After selecting the appropriate screw, insert the screw through the sheath using the screwdriver. The etch mark on the screwdriver corresponds with the screw sheath to indicate when the screw is fully seated (Fig. 24).

Repeat above steps for additional screw placement.

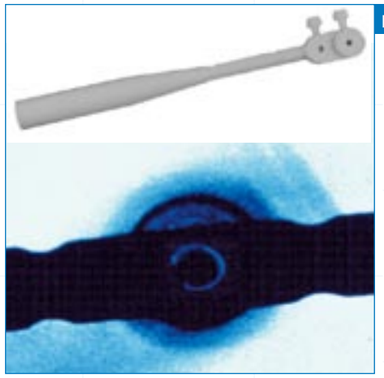


Fig. 25 **Distal Locking**

Prior to locking distal screws check femoral length and rotation under fluoroscopy. Distal locking should be conducted using the standard image intensification freehand technique. A white radiolucent targeting wand (Cat. No. 1201) is available if desired (Fig. 25).

Fig. 26 The distal screw holes should be drilled with a 3.8 mm drill bit (Cat. No. 6 in: 2810-13-138, 8 in: 2810-12-138). Read the calibration marks on the drill bit to determine screw length using the screw length gauge (Cat. No. 2810-01-032). Alternatively the screw depth gauge (Cat. No. 2810-01-017) can be used (Fig. 26).

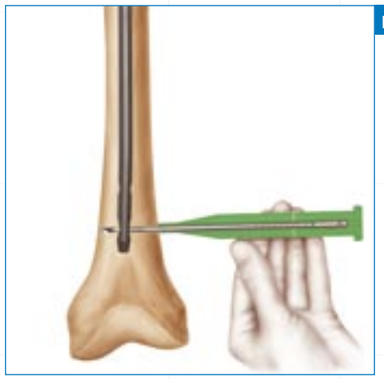


Fig. 27 Remove the drill bit and advance the 4.5 mm screw. Repeat above steps to place an additional 4.5 mm screw (Fig. 27).

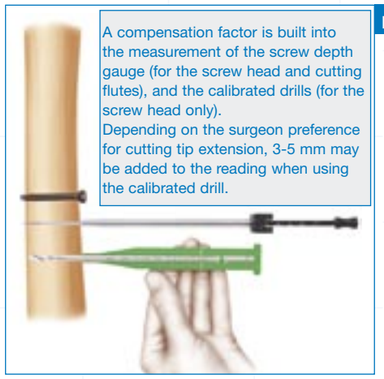


Fig. 28 **Determining Screw Length**

The screw size indicates the total measurement from the tip to the screw head. The calibrated drills and the screw depth gauges have a compensation factor built into the measurement such that the reading should indicate the exact size screw to achieve bi-cortical purchase. To ensure a proper reading, the screw depth gauge sheath and drill sleeves must be touching bone. Fluoroscopy is recommended to verify the correct screw length (Fig. 28).

Fig. 29 **End Cap Placement**

Cannulated end caps are provided in the system to both prevent bony ingrowth and add length when needed (Fig. 29).

Fig. 30 End caps have a double hex of 5 mm and 3.5 mm and are cannulated to accept a 3.2 mm guide pin. Place the end cap into the end of the nail with the 4.5 mm screwdriver. If the end cap will be placed using a 3.2 mm guide pin (Cat. No. 14012-14), place the end cap with the 5 mm jig bolt driver (Cat. No. 2810-01-011). A non-cannulated locking screwdriver is also available to aid in end cap placement (Fig. 30). Irrigate the wound and perform a layered closure in the usual fashion.

Fig. 31 **Nail Removal**

If the surgeon deems it appropriate to remove the nail, a cannulated extractor bolt (Cat. No. 2810-01-023), used with a 3/4 in hex driver (Cat. No. 2810-01-027) and a T-Handle Hudson (Cat. No. 2810-01-004), is provided to aid in nail extraction (Fig. 31).

Fig. 32 Locate the top of the nail through an appropriate incision. Remove the end cap. End caps have a double hex of 5 mm and 3.5 mm and are cannulated to accept a 3.2 mm guide pin. Insert the 3.2 mm guide pin and remove the end cap using the cannulated jig bolt driver (Cat. No. 2810-01-011).

The SolidLok™ locking screwdriver (Cat. No. 2810-01-020 and Cat. No. 2810-01-021) is also available to aid in removing the end cap. Insert the SolidLok™ screwdriver into the hex tip (Cat. No. 2810-01-019) and tighten the handle to lock the end cap's hex tip into the inner end cap's 3.5 mm hex. The end cap can also be removed with a standard 3.5 mm hex screwdriver (Fig. 32).

Fig. 33 Make the appropriate incisions and remove all locking screws. Remove all overgrown bone around the nail's proximal aspect to avoid iatrogenic fracture during nail extraction. Once the locking screws have been removed, drive a 3.2 mm guide pin into the cannulation in the nail's proximal section. Insert the extractor bolt over the 3.2 mm guide pin and thread it into the nail. Ensure that the extractor is fully threaded into the nail prior to extraction. Then thread the impactor rod into the extractor bolt and use either the slotted mallet or sliding hammer to remove the nail (Fig. 33). During nail removal it may be helpful to gently counter-rotate the nail as it is being extracted such that the distal and anterior nail contours rotate laterally to aid in removing the nail through the proximal portion of the femur and trochanteric entry portal.

Fig. 34 A conical nail extractor bolt (Cat. No. 2810-01-022) is also available for removal in cases where the nail threads are difficult to engage (Fig. 34). This instrument is designed to work with various nail thread/cannulation designs.

Note: Nail thread/cannulation condition may limit the purchase amount that can be gained using the conical extractor bolt.

IMPORTANT

This Essential Product Information does not include all of the information necessary for selection and use of a device. Please see full labeling for all necessary information.

INDICATIONS

The use of metallic surgical appliances (orthopaedic screws, intramedullary nails, plates, compression hip screws) provides the orthopaedic surgeon a means of bone fixation and helps generally in the management of fractures and reconstructive surgeries. These implants are intended as a guide to normal healing, and are NOT intended to replace normal body structure or bear the weight of the body in the presence of incomplete bone healing. Delayed unions or nonunions in the presence of load bearing or weight bearing might eventually cause the implant to break due to metal fatigue. All metal surgical implants are subjected to repeated stress in use, which can result in metal fatigue.

CONTRAINDICATIONS

Orthopaedic screws, intramedullary nails, plates, and compression hip screws are contraindicated in: active infection, conditions which tend to retard healing such as blood supply limitations, previous infections, insufficient quantity or quality of bone to permit stabilisation of the facture complex, conditions that restrict the patient's ability or willingness to follow postoperative instructions during the healing process, and foreign body sensitivity.

ADDITIONAL CONTRAINDICATIONS FOR INTRAMEDULLARY NAILS ONLY

Cases where the nail would cross open epiphyseal plates in skeletally immature patients and obliterated medullary canal or other conditions which tend to retard healing such as blood supply limitations, or previous infections.

ADDITIONAL CONTRAINDICATION FOR RETROGRADE FEMORAL NAILING

A history of septic arthritis of the knee and knee extension contracture with inability to attain at least 45° of flexion.

WARNINGS AND PRECAUTIONS

Bone screws and pins are intended for partial weight bearing and non-weight bearing applications. These components cannot be expected to withstand the unsupported stresses of full weight bearing.

ADVERSE EVENTS

The following are the most frequent adverse events after fixation with orthopaedic screws, intramedullary nails, plates and compression hip screws: loosening, bending, cracking or fracture of the components or loss of fixation in bone attributable to nonunion, osteoporosis, markedly unstable comminuted fractures; loss of anatomic position with nonunion or malunion with rotation or angulation; infection and adverse reactions to the device material.

VERSANAIL™ FEMORAL

Femoral Troch Entry Nail 9 mm 28-50 cm

Cat. No. Rights	Cat. No. Lefts	Description
1814-09-280	1815-09-280	9 mm x 28 cm
1814-09-300	1815-09-300§	9 mm x 30 cm
1814-09-320	1815-09-320	9 mm x 32 cm
1814-09-340	1815-09-340	9 mm x 34 cm
1814-09-360	1815-09-360	9 mm x 36 cm
1814-09-380	1815-09-380	9 mm x 38 cm
1814-09-400	1815-09-400	9 mm x 40 cm
1814-09-420	1815-09-420	9 mm x 42 cm
1814-09-440	1815-09-440	9 mm x 44 cm
1814-09-460	1815-09-460	9 mm x 46 cm
1814-09-480	1815-09-480	9 mm x 48 cm
1814-09-500	1815-09-500	9 mm x 50 cm

Femoral Troch Entry Nail 11 mm 28-50 cm

Cat. No. Rights	Cat. No. Lefts	Description
1814-11-280	1815-11-280	11 mm x 28 cm
1814-11-300	1815-11-320	11 mm x 30 cm
1814-11-340	1815-11-360	11 mm x 32 cm
1814-11-380	1815-11-400	11 mm x 34 cm
1814-11-420	1815-11-440	11 mm x 36 cm
1814-11-460	1815-11-480	11 mm x 38 cm
1814-11-500	1815-11-300	11 mm x 40 cm
1814-11-320	1815-11-340	11 mm x 42 cm
1814-11-360	1815-11-380	11 mm x 44 cm
1814-11-400	1815-11-420	11 mm x 46 cm
1814-11-440	1815-11-460	11 mm x 48 cm
1814-11-480	1815-11-500	11 mm x 50 cm

Femoral Troch Entry Nail 13 mm 28-50 cm

Cat. No. Rights	Cat. No. Lefts	Description
1814-13-280	1815-13-280	13 mm x 28 cm
1814-13-300	1815-13-320	13 mm x 30 cm
1814-13-340	1815-13-360	13 mm x 32 cm
1814-13-380	1815-13-400	13 mm x 34 cm
1814-13-420	1815-13-440	13 mm x 36 cm
1814-13-460	1815-13-480	13 mm x 38 cm
1814-13-500	1815-13-300	13 mm x 40 cm
1814-13-320	1815-13-340	13 mm x 42 cm
1814-13-360	1815-13-380	13 mm x 44 cm
1814-13-400	1815-13-420	13 mm x 46 cm
1814-13-440	1815-13-460	13 mm x 48 cm
1814-13-480	1815-13-500	13 mm x 50 cm

End Caps

Cat. No.	Description
1813-00-001	End Cap Universal Flush
1813-00-005	End Cap Universal 5 mm
1813-00-010	End Cap Universal 10 mm
1813-00-015	End Cap Universal 15 mm

6.5 mm Self Tapping Cortical Screws Full Thread (Proximal)

Cat. No.	Description
(Non Sterile)	
1020-40	40 mm Length
1020-45	45 mm Length
1020-50	50 mm Length
1020-55	55 mm Length
1020-60	60 mm Length
1020-65	65 mm Length
1020-70	70 mm Length
1020-75	75 mm Length
1020-80	80 mm Length
1020-85	85 mm Length
1020-90	90 mm Length
1020-95	95 mm Length
1020-100	100 mm Length
(**Sterile - all sizes available**)	
8050-65-XXX	

6.5 mm Solid Cancellous Lag Screws (Proximal)

Cat. No.	Description
(Non Sterile)	
1030-60	60 mm Length
1030-65	65 mm Length
1030-70	70 mm Length
1030-75	75 mm Length
1030-80	80 mm Length
1030-85	85 mm Length
1030-90	90 mm Length
1030-95	95 mm Length
1030-100	100 mm Length
1030-105	105 mm Length
1030-110	110 mm Length
1030-115	115 mm Length
1030-120	120 mm Length
(**Sterile - all sizes available**)	
8055-65-XXX	

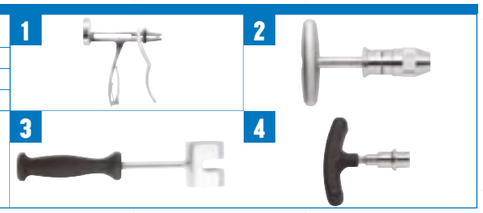
4.5 mm Self Tapping Cortical Screws Full Thread (Proximal)

Cat. No.	Description
(Non Sterile)	
14022-24	24 mm Length
14022-28	28 mm Length
14022-32	32 mm Length
14022-36	36 mm Length
14022-40	40 mm Length
14022-44	44 mm Length
14022-48	48 mm Length
14022-52	52 mm Length
14022-56	56 mm Length
14022-60	60 mm Length
14022-65	65 mm Length
14022-70	70 mm Length
14022-75	75 mm Length
14022-80	80 mm Length
(**Sterile - all sizes available**)	
8050-45-XXX	

INSTRUMENT CATALOGUE NUMBERS AND DESCRIPTIONS

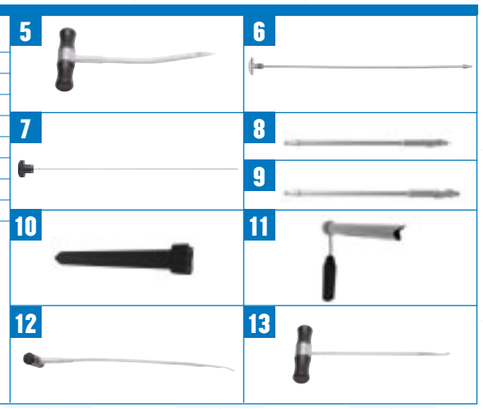
GENERAL

2810-01-001	Pistol Guidewire Gripper	1
2810-01-002	T-Handle Guidewire Gripper (optional)	2
2810-01-003	Slotted Mallet	3
2810-01-004	T-Handle Hudson	4



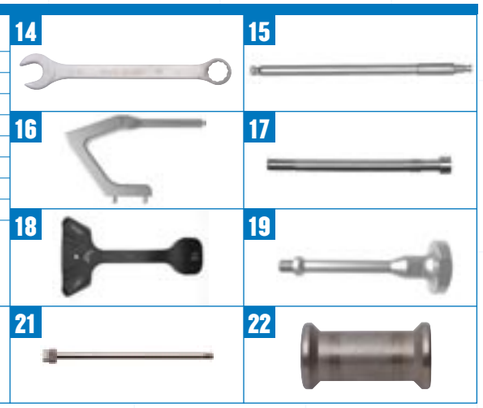
CANAL PREP

2810-01-005	Curved Cannulated Awl	5
2810-01-025	Awl Stylus	6
2810-01-026	Guidewire Pusher	7
2810-13-028	13 mm Entry Reamer, Femur	8
2810-13-029	14 mm Entry Reamer, Femur	9
2810-13-004	Entry Portal Trocar	10
2810-13-005	Long Entry Portal	11
2810-01-007	Long Reduction Tool	12
2810-01-008	Short Reduction Tool	13



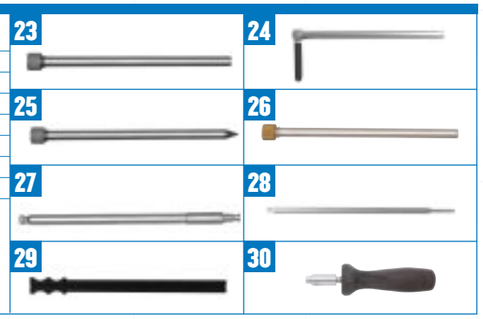
NAIL INSERTION

1186	3/4 in Combination Wrench	14
2810-13-006	Jig Bolt Driver, 8 mm	15
2810-13-007	Femoral Insertion Handle	16
2810-13-008	Femoral Jig Bolt	17
2810-13-009	Universal Target Arm	18
2810-13-011	Hammer Pad Femur	19
2810-13-026	Target Arm Attachment Bolt	20
1095	Impactor Rod/Extraction	21
1096	Sliding Hammer	22



PROXIMAL LOCKING

2810-13-018	3.2 mm Guide Pin Sleeve - Silver	23
2810-13-020	6.5 mm Screw Sheath	24
2810-13-021	6.5 mm Screw Trocar	25
2810-13-022	5.3 mm Drill Sleeve - Black	26
2810-13-023	6.5/4.8 mm Step Drill Sleeve - Gold	27
2810-13-024	6.5 mm Screwdriver Shaft	28
2810-13-035	6.5 mm Screw Depth Gauge	29
2141-49-000	AO Quick Couple Screwdriver	30



DISTAL LOCKING

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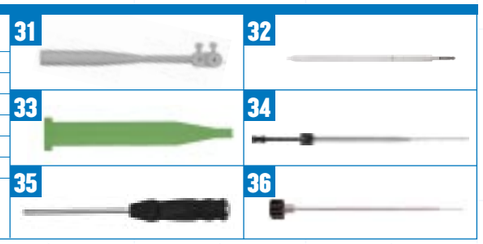
2810-01-015	4.5/5.5 mm Screwdriver Shaft	32
2810-01-032	4.5 mm Screw Length Gauge	33
2810-01-017	Screw Depth Gauge	34
2810-01-020	SolidLok™ Screwdriver Handle	35
2810-01-021	SolidLok™ Driver Inner Shaft	36



NAIL REMOVAL

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2810-01-022	Conical Extractor Tool	38
2810-01-027	3/4 in Hex Driver	39

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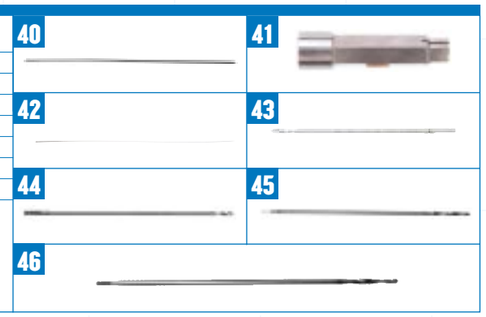
9030-03-004	3.2 mm x 17 1/2 in Threaded Guide Pin	40
2810-01-019	SolidLok™ Hex Tip, 3.5 mm	41
2810-01-100	Ball Nose Guide Wire 100 cm	42
2810-12-138	3.8 mm Drill Bit 6 in, Non-sterile	43
2810-13-138	3.8 mm Drill Bit 8 in, Non-sterile	44
2810-13-153	5.3 mm Drill Bit, Non-sterile	45
2810-13-165	6.5/4.8 mm Step Drill Bit, Non-sterile	46



CASES & TRAYS

2810-13-030	Femoral Tray Entry & Jigs	47
2810-13-031	Femoral Tray Locking & Extraction	48
8299-10-500	Modular Screw System Outer Case	49
8299-10-045	4.5 mm Cort Screw Module	50
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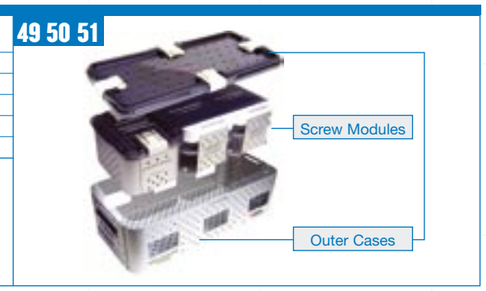

NAIL MEASUREMENTS

1245	Radiographic Ruler	52
2810-01-031	Nail Length Gauge, 14 mm	53
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