

Surgical Technique



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 Image intensifier control

Warning

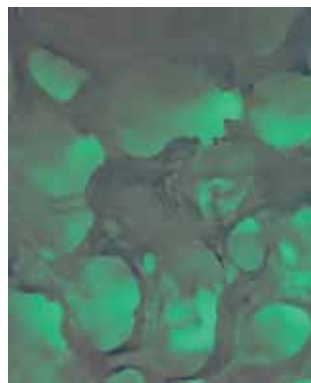
This description is not sufficient for immediate application of the instrumentation. Instruction by a surgeon experienced in handling this instrumentation is highly recommended.

PFNA blade

Rational and angular stability achieved with one single element

Compaction of cancellous bone

Inserting the PFNA blade compacts the cancellous bone. This provides additional anchoring to the PFNA blade, which is especially important in osteoporotic bone.

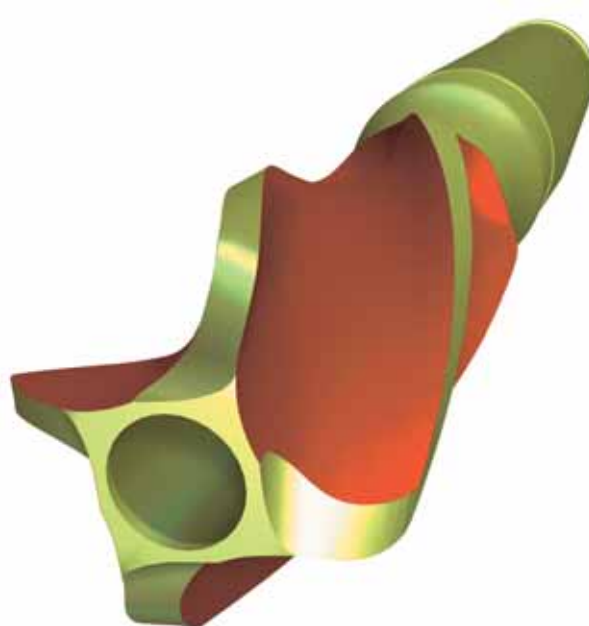


Bone structure before insertion of the PFNA blade.



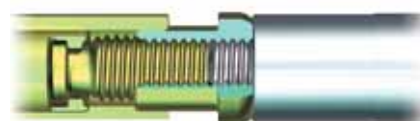
Bone structure after PFNA blade insertion – cancellous bone is compacted providing additional anchoring to the PFNA blade.

The increased stability caused by bone compaction around the PFNA blade has been biomechanically proven to retard rotation and varus collapse. Such biomechanical tests demonstrated that the PFNA blade had a significantly higher cut-out resistance compared to commonly-used screw systems.

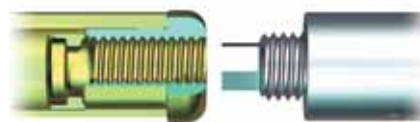


Lateral locking-fast and reliable insertion of the PFNA blade

- all surgical steps required to insert the PFNA blade are done through the lateral incision
- the PFNA blade is automatically locked to prevent rotation of the PFNA blade and the femoral head



PFNA blade unlocked



PFNA blade locked

x-rays



27 years, male, AO 31 A3



11 days post-op



11 weeks post-op



85 years, male, AO 31 A2



7 days post-op

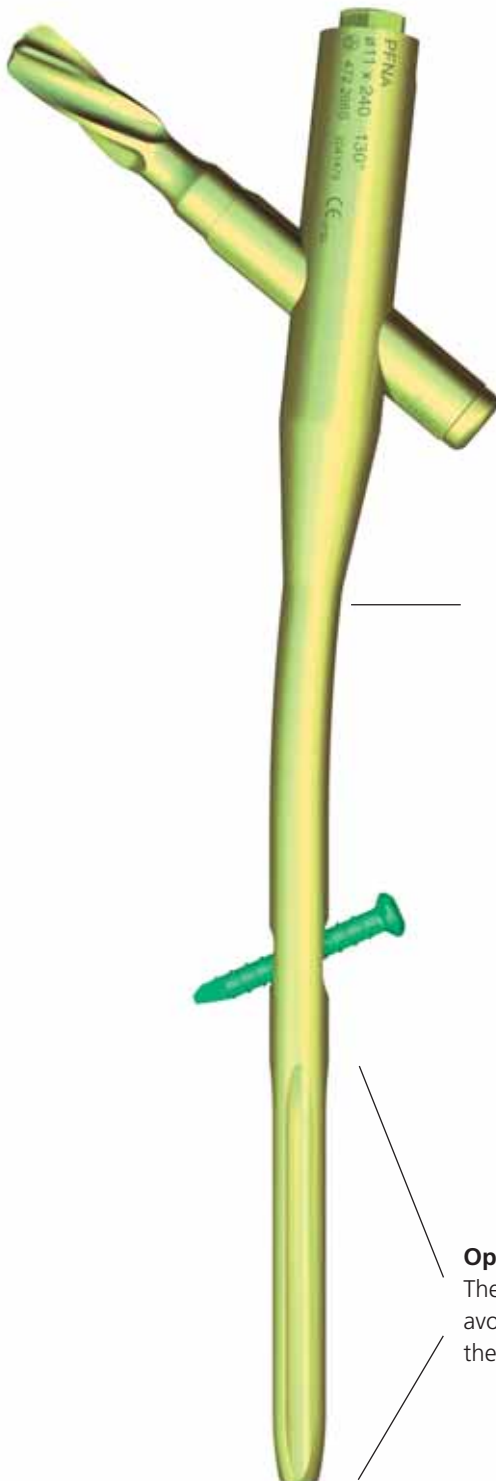


17½ weeks post-op

PFNA nail

Excellent fit

The anatomical design guarantees an optimal fit in the femur. The nail design has been well proven in over 200 000 cases performed with the PFN.



PFNA long
R = 1500mm

Indications

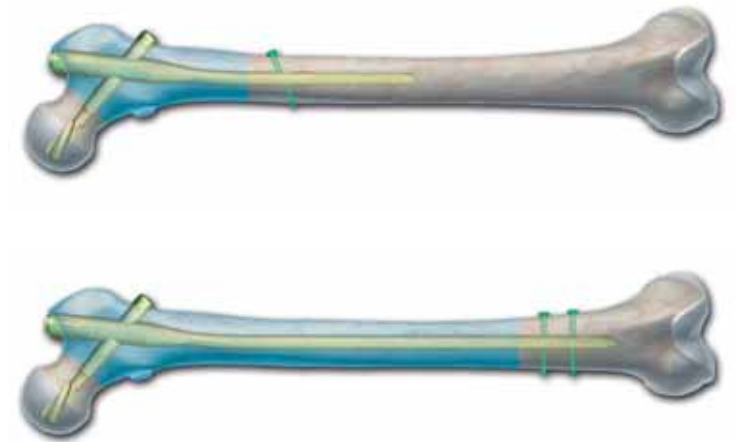
Indications

PFNA

- Petrochanteric fractures (31-A1 und 31-A2)
- Intertrochanteric fractures (31-A3)
- High subtrochanteric fractures

PFNA long

- Low and extended subtrochanteric fractures
- Ipsilateral trochanteric fractures
- Combination fractures (in the proximal femoral)
- Pathological fractures



Product range

The PFNA is available in 4 sizes:

- PFNA, length 240 mm
- PFNA small, length 200 mm
- PFNA xs, length 170 mm
- PFNA long, length 300, 340, 380, 420 mm with bending radius 1500 mm

Several distal locking options

Static dynamic locking can be performed via the aiming arm with PFNA standard, small and xs. The PFNA long allows in addition secondary dynamisation.

PFNA

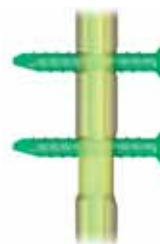


static



dynamic

PFNA long



static



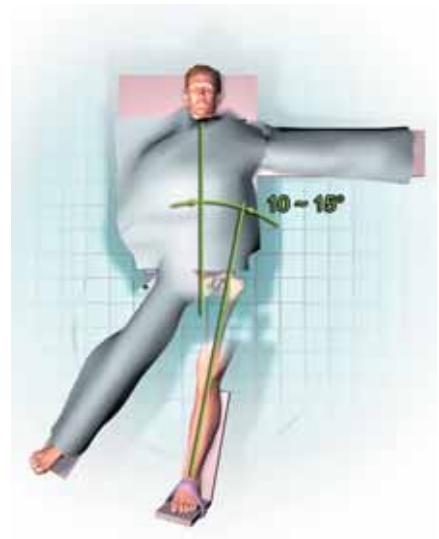
dynamic

Quick Steps

1a

Preparation

Position the patient



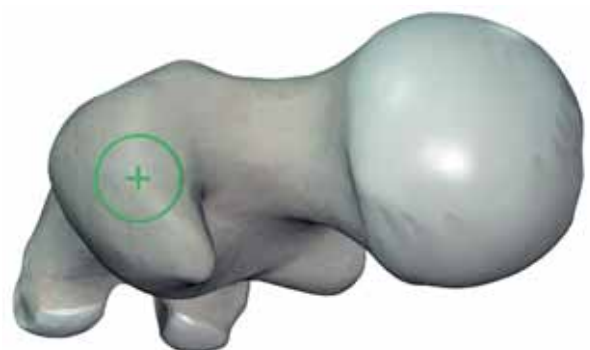
1b

Preoperative planning



1c

Entry point



2a

Insertion of the guide wire

- Insertion the guide wire to open the femur
- AP and ML control



2b

Open the femur



2c

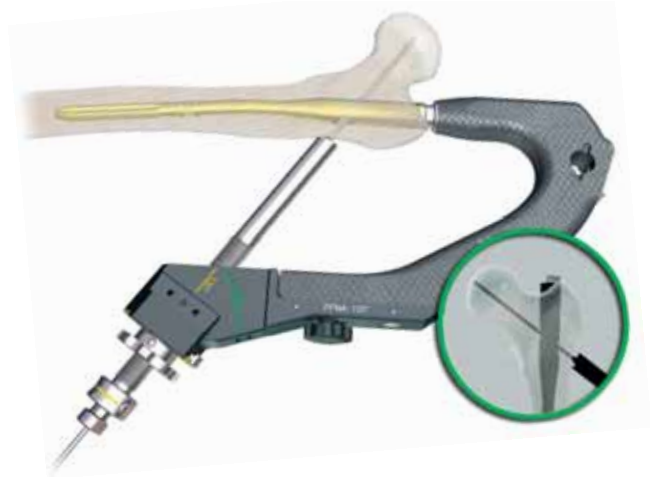
Insert the PFNA



3

Positioning of guide wire for the PFNA blade

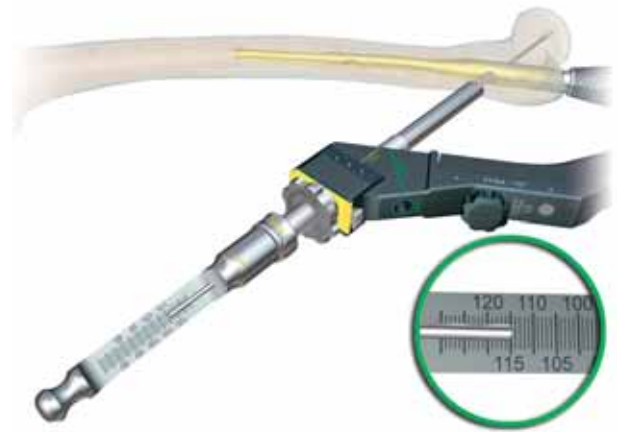
- Mount the aiming arm for the PFNA blade
- Insert the guide wire for the PFNA blade
- Image intensifier control (AP)
- Image intensifier control (ML)



4a

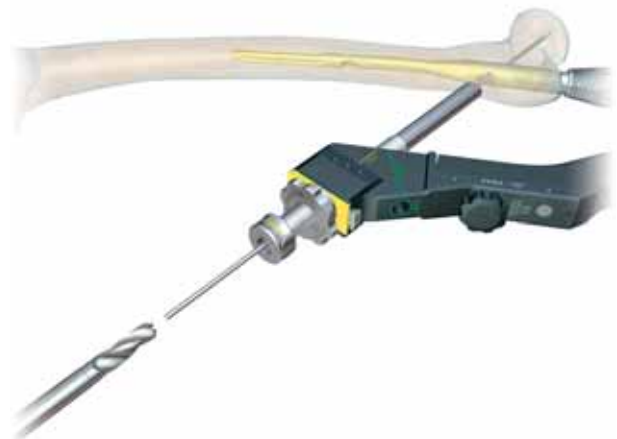
Insertion of PFNA blade

Measure the length for the PFNA blade



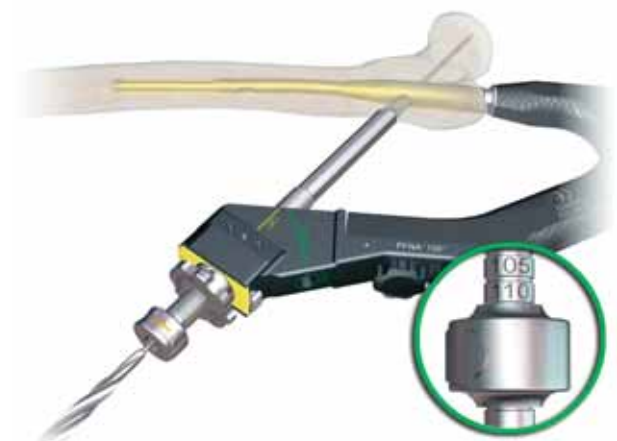
4b

Open the lateral cortex for PFNA blade insertion



4c

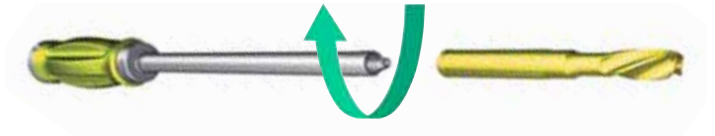
Drill hole for the PFNA blade



5a

Attach the PFNA blade

Attach the PFNA blade to the inserter (turn the inserter anticlockwise to the «attach» marking)



5b

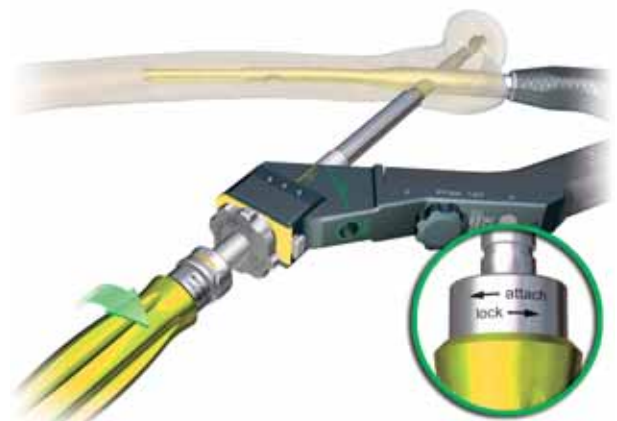
Insert the PFNA blade



5c

Lock the PFNA blade

(turn the inserter clockwise to the «lock» marking)



6a

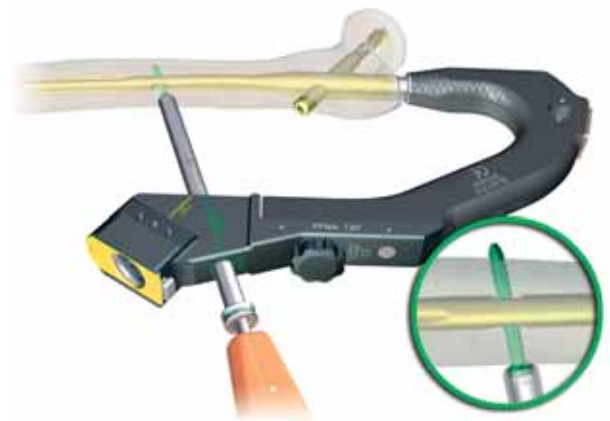
Insertion of locking bolt and end cap

Drill hole and measure for distal locking



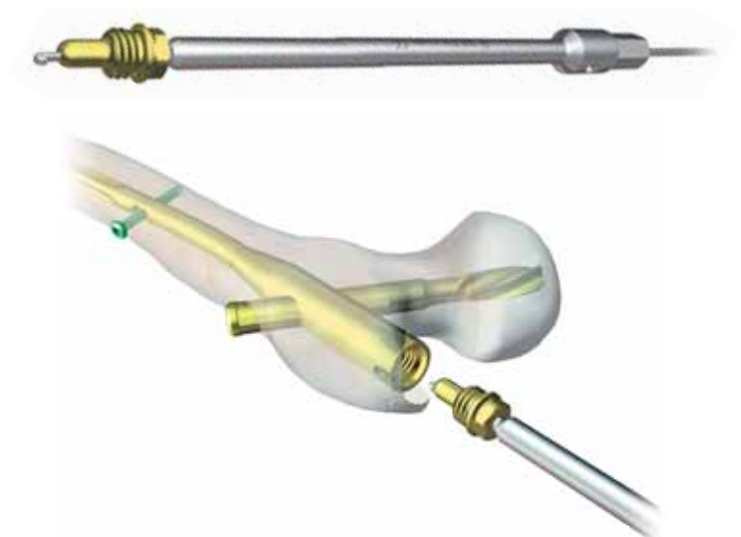
6b

Insert the locking bolt



6c

Insert the end cap



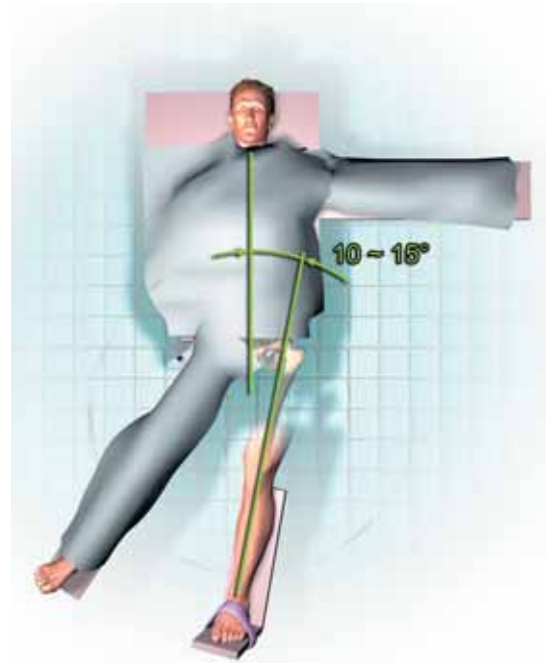
Preparation

1

Patient positioning

Position the patient supine on an extension table or a radiolucent operating table. Abduct the unaffected leg as far as possible and place it on a leg support, so that it does allow free fluoroscopic examinations. This should be tested preoperatively.

For an unimpeded access to the medullary cavity, abduct the upper body by about 10–15° to the unaffected side (or adduct the affected leg by 10–15°).



2

Determination of CCD angle

Take a preoperative AP radiography of the unaffected leg. Determine the CCD angle using a goniometer or the preoperative planning template.



3

Fracture reduction

- 1 Perform closed reduction of the fracture under image intensifier control. Carry out open reduction, if the result is not satisfactory.

Note: Exact anatomical reduction and secure fixation of the patient to the operating table are essential for easy handling and a good surgical result.

4

Determination of PFNA diameter

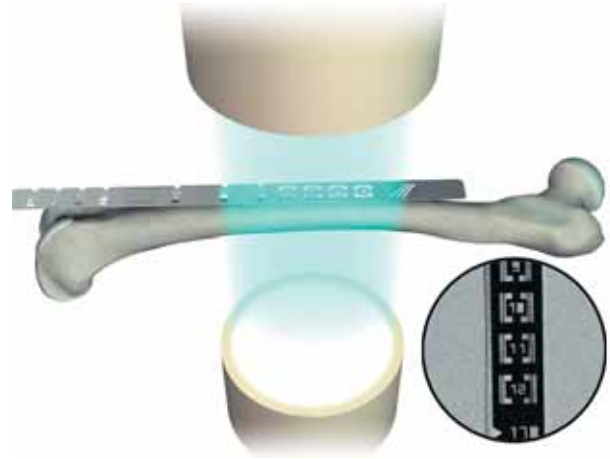
- 1 Determine the distal PFNA diameter by placing the preoperative planning template over the isthmus on an AP radiography.

Alternative:

- 1 Use image intensifier control to place the Radiographic Ruler (309.602) on the femur and position the square marking over the isthmus. If the transition of medullary space/cortex is still visible on both sides of the marking, the corresponding PFNA diameter may be used.

If the intramedullary canal is too narrow, select a smaller size PFNA diameter or ream to a diameter that is at least 1 mm larger than that of the planned PFNA.

Note: The use of a too large PFNA can provoke loss of reduction or an iatrogenic fracture.



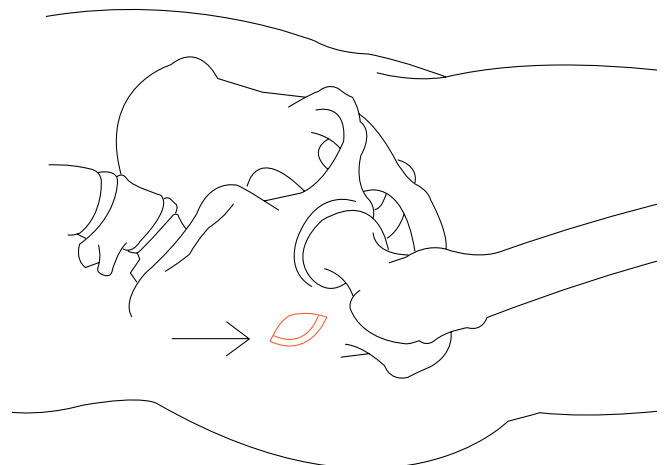
5

Surgical approach

Palpate the trochanter major.

Make a 5 cm incision approximately 5 to 10 cm proximal from the tip of the greater trochanter. Make a parallel incision of the fasciae of the gluteus medius and split the gluteus medius in line with the fibres.

When using the Insertion Handle for PFN (357.020), extend the incision distally.



1

Determination of PFNA entry point and guide wire insertion

- In AP view, the PFNA entry point is usually **on** the tip or **slightly lateral** to the tip of the greater trochanter in the 6° curved extension of the medullary cavity, as the ML angle of the PFNA is 6°. This means that the 3.2 mm Guide Wire (356.830) must be inserted on the tip or slightly laterally of the greater trochanter at an angle of 6° to the intended extension of the medullary. Insert the guide wire into the medullary cavity to a depth of 15 cm.



- In lateral view, verify whether the position of the guide wire is straight **and** in the centre of the medullary cavity. It should not appear bent in lateral view, as this would subsequently position the PFNA too ventrally or too dorsally and impede correct positioning of PFNA blade in the femoral neck. Use the Universal Chuck with T-handle (393.100) or the COMPACTM AIR DRIVE (511.701) and the Quick Coupling for Kirschner wires (511.790) for the manual insertion of the guide wire.

Percutaneous technique:

Position both 20.0/17.0 mm Protection Sleeve (357.001) and 17.0/3.2 mm Drill Sleeve (309.603) at the insertion point. Insert the guide wire through the protection sleeve and the drill sleeve. Then remove the drill sleeve.

Note: The correct entry point and angle are essential for a successful result. To ensure the correct position of the guide wire, position a guide wire ventrally on the femur and check radiographically.

- radiographically.



2

Opening of the femur

Guide the cannulated 17.0 mm Drill Bit (309.600) through the 20.0/17.0 mm Protection Sleeve (357.001) over the 3.2 mm Guide Wire (356.830) and drill with the Universal Chuck with T-handle (393.100) as far as the stop on the protection sleeve. Remove the protection sleeve and the guide wire.

Note: It is recommended to open the femur by power tool at high speed or carefully by hand. To prevent dislocating the fracture fragments, avoid lateral movements or excessive compression forces.



3

Assembly of PFNA instruments

Guide the Connecting Screw (357.021) through the Insertion Handle (357.012) and secure the PFNA to the insertion handle using the Hexagonal Wrench with T-handle (357.023). The diameter of the PFNA has already been determined during surgical preparation.

Note: Ensure that the connection between PFNA and insertion handle is tight (retighten, if necessary) to avoid deviations when inserting the PFNA blade through the insertion handle. Do not attach the aiming arm yet.



4

Insertion of the PFNA

- 1 Use image intensifier control to insert the PFNA.

Carefully insert the PFNA manually as far as possible into the femoral opening. Slight twisting hand movements help insertion. If the PFNA cannot be inserted, select a smaller size PFNA diameter or ream the medullary cavity to a diameter that is at least 1mm larger than that of the selected nail.

If necessary, light blows with the Hammer (399.420) on the protection shield of the insertion handle can support the insertion of the PFNA.

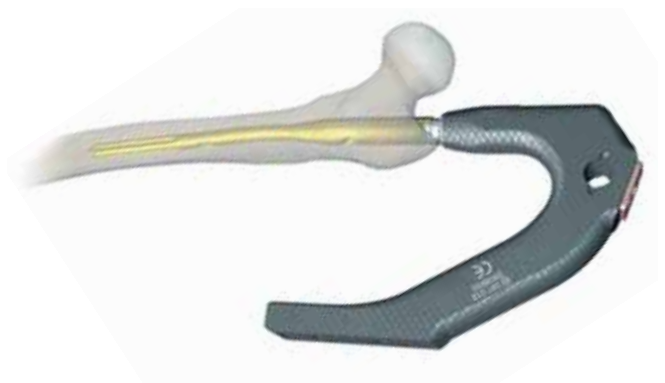
- 2 The correct PFNA insertion depth is reached, as soon as the projected PFNA blade is positioned in the lower half of the femoral neck. Placing a ruler on the AP view allows checking the position of the PFNA blade. A too cranial or too caudal PFNA position should be avoided as it can lead to malposition of the PFNA blade.

The anteversion can be determined by inserting a guide wire ventral to the femoral neck in the femoral head. In the medio-lateral view, place the insertion guide parallel to the guide wire to align the correct rotation of the PFNA.

Remove all guide wires. Do not reuse, but dispose of the guide wires.

Note:

- Always ensure that the PFNA is firmly attached to the insertion handle.
- **Use only light blows** on the protection shield of the insertion handle.
Avoid unnecessary use of force to prevent loss of reduction or an iatrogenic fracture.



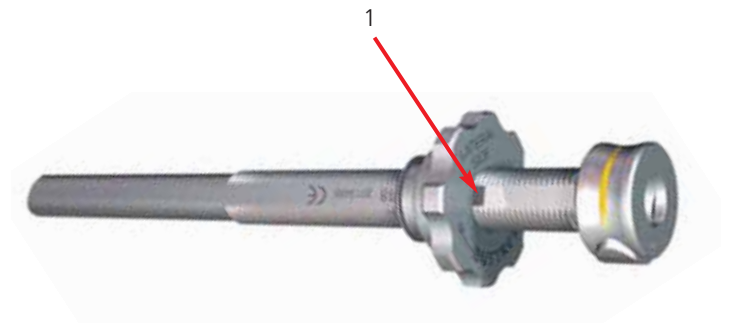
5

Preparation of guide wire insertion

Mount the appropriate 130° Aiming Arm (356.811) and fix it firmly to the insertion handle.

Firmly secure the golden 16.0/11.0 mm Buttress Nut (356.817) to the Protection Sleeve for PFNA Blade (356.818). Make sure the «Lateral side» marking points towards the head of the sleeve. For the insertion, insert the buttress nut through the aiming arm as far as the marking 1.

Insert the golden 11.0/3.2 mm Drill Sleeve (356.819) and the golden 3.2 mm Trocar (356.820) through the protection sleeve.

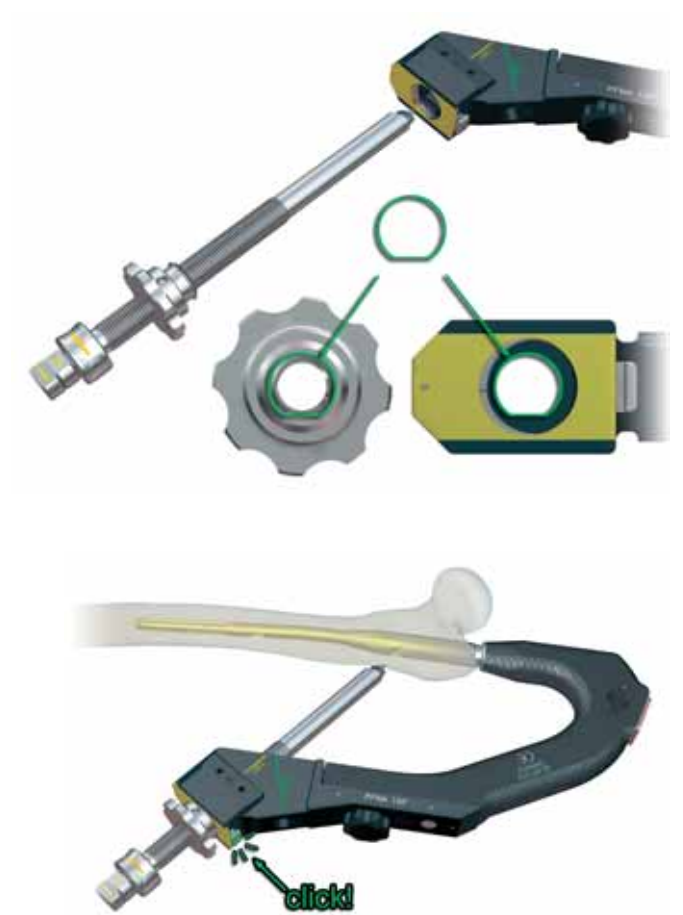


6

Guide wire insertion

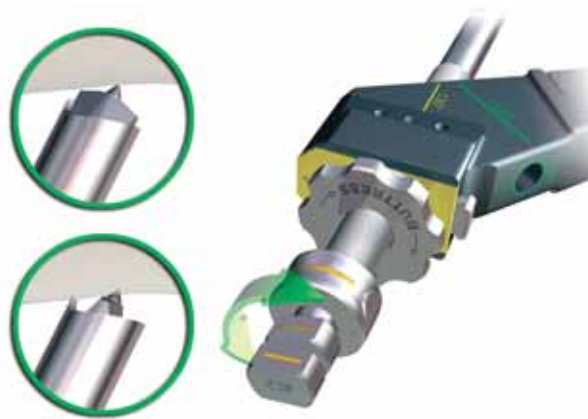
Advance the entire sleeve assembly for PFNA blade through the aiming arm to the skin. See marking on the 130° Aiming Arm (356.811). Make a stab incision in the area of the trocar tip. Advance the sleeve assembly through the soft tissues in direction of the lateral cortex until it clicks into the aiming arm.

Note: Ensure that the sleeve assembly clicks into the aiming arm. Otherwise it does not guarantee the exact position of the PFNA blade.



Insert the sleeve assembly as far as the lateral cortex. Advance the Protection Sleeve (356.818) to the lateral cortex using slight clockwise turns of the Buttress Nut (356.817). Prepare the passage of the protection sleeve by turning the internal golden 11.0/3.2 mm Drill Sleeve (356.819).

Note: The sleeve assembly must be in contact with the bone during the entire blade implantation. Do not tighten the buttress nut too firmly as this could impair the precision of the insertion handle and sleeve assembly.



Remove the trocar. Insert a **new** 3.2 mm Guide Wire (356.830) through the golden 11.0/3.2 mm Drill Sleeve (356.819) into the bone. Verify both direction and position under image intensifier in AP and lateral view. In the AP view, the position of the guide wire should be in the lower half of the femoral neck. In lateral view, the wire should be positioned in the in the centre of the femoral neck. Insert the guide wire subchondrally into the femoral head, but at a distance of least 5mm from the joint.

①

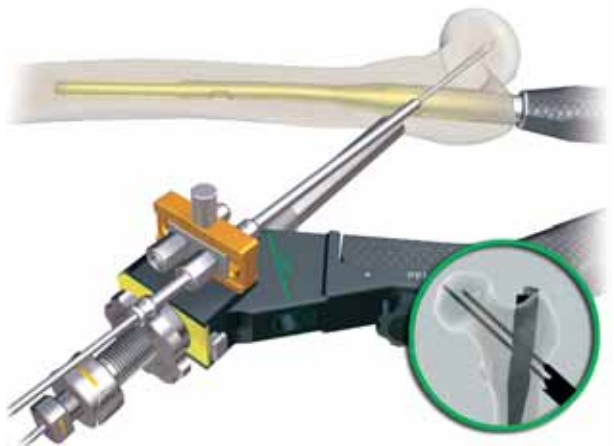
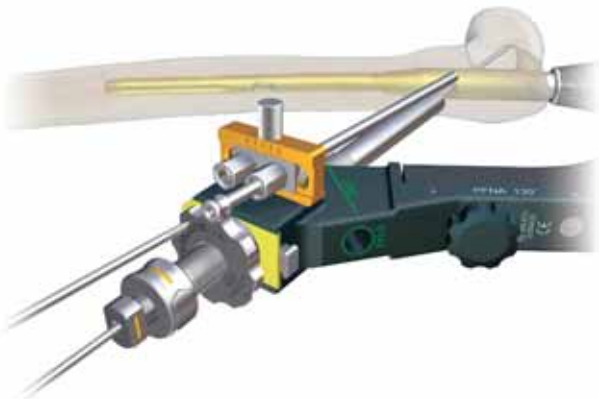
Note: If the PFNA or the guide wire has to be repositioned, remove the guide wire, release the sleeve assembly with buttress nut from the aiming arm by pressing the button on the clamp device and remove it. The PFNA can be repositioned only by rotation, deeper insertion or partial retraction. Reinsert the sleeve assembly and turn the buttress nut clockwise to position the assembly on the bone. Reinsert the guide wire.



Optional technique for antirotation wires:

In very unstable fractures, insert an additional guide wire to prevent rotation. Leave the golden 11.0/3.2 mm Drill Sleeve (356.819) in place in the golden 16.0/11.0 mm Protection Sleeve (356.818) when applying this technique.

After having inserted the guide wire into the femoral head, secure the Aiming Jig for antirotation wire (356.826) either anterior or posterior to the aiming arm. Secure the position of the antirotation wire by tightening the hexagonal nut. Insert the 5.6/3.2 mm Drill Sleeve (356.827) into the Aiming Jig for antirotation wire (356.826). Make a stab incision and insert the drill sleeve to the bone.



- Use image intensifier control to insert a 3.2 mm Guide Wire (356.830) into the femoral head. If a second antirotation wire is necessary, use the same procedure to insert it into the femoral head.

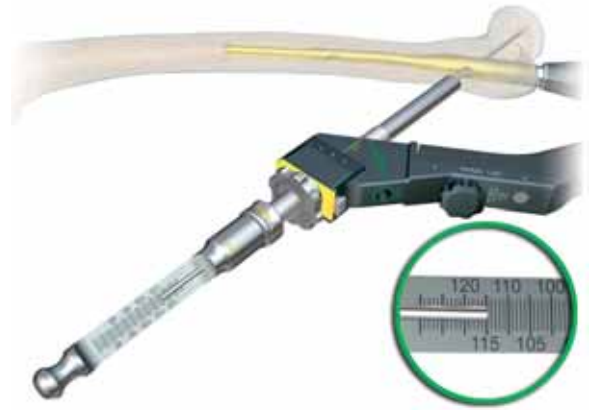
Note: In axial view, the antirotation wire will approach, but not touch the blade tip. This antirotation wire fixes the femoral head only temporarily and will be removed after the insertion of the blade.

7

Measuring of PFNA blade length

- 1 Verify the position of the guide wire in AP and lateral view before measuring the length.

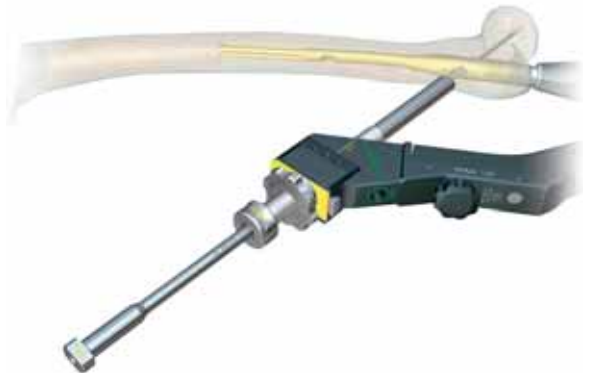
Guide the Measuring Device for 3.2 mm Guide Wire (356.829) over the guide wire, advance it to the protection sleeve and determine the length of the required blade. The measuring device indicates the exact length of the guide wire in the bone ensuring that the position of the PFNA blade will be flush with the tip of the guide wire. The correct position of the PFNA blade is approximately 5–10 mm below the joint level. If the guide wire's position is subchondral, subtract 5–10 mm, as in the DHS system, to position the PFNA blade correctly.



8

Removal of drill sleeve

Carefully remove the golden 11.0/3.2 mm Drill Sleeve (356.819) without changing the position of the guide wire.



9

Opening of lateral cortex for PFNA blade insertion

Push the cannulated 11.0 mm Drill Bit (356.822) over the 3.2 mm Guide Wire (356.830). Drill to the stop. This opens the lateral cortex.

Note: if the guide wire has been bent slightly during insertion, guide the drill bit over it using carefully forward and backward movements. However, if the wire has been bent to a greater extent, reinsert it or replace it by a new guide wire. Otherwise, the tip of the drill bit risks to break off.

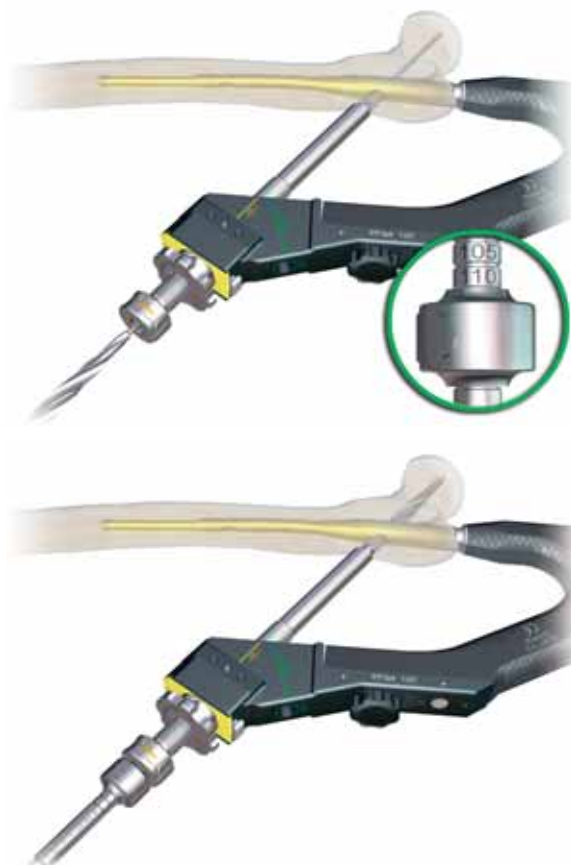


10

Drill hole for PFNA blade

Set the measured length of the blade on the cannulated 11.0 mm Reamer (356.821) by fixing the Fixation Sleeve (357.046) in the corresponding position. Read off the correct length on the side of the fixation sleeve pointing towards the tip of the drill bit.

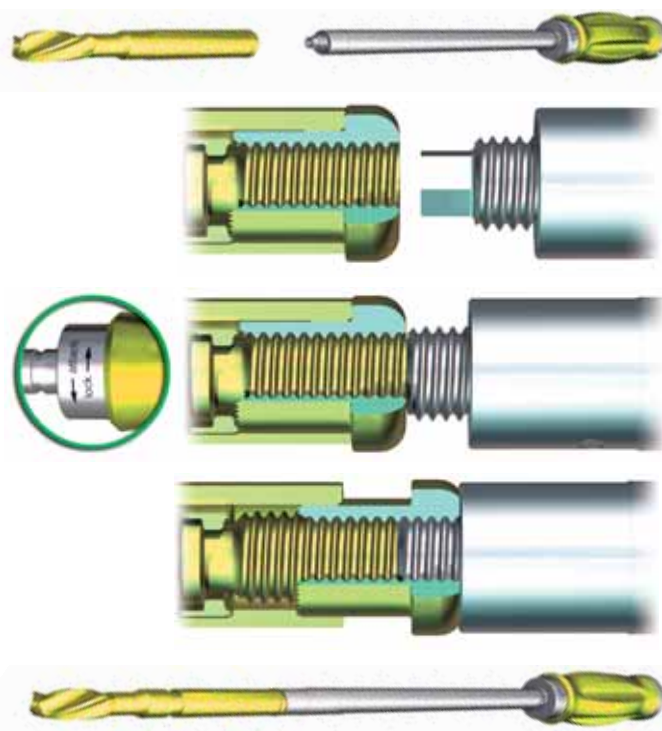
Push the reamer over the 3.2 mm Guide Wire (356.830). Drill to the stop. The fixed fixation sleeve prevents further drilling. Use the reamer only after drilling the lateral cortex with the drill bit.



11

Assembly of PFNA blade and PFNA inserter

The PFNA blade is supplied in a locked state. Use slight anti-clockwise pressure («attach» marking on the handle) to insert the Inserter (356.823) into the selected PFNA blade to the stop. Ensure its firm fit. This procedure unlocks the PFNA blade. Now the blade rotates freely. This is essential for the implantation of the PFNA blade.



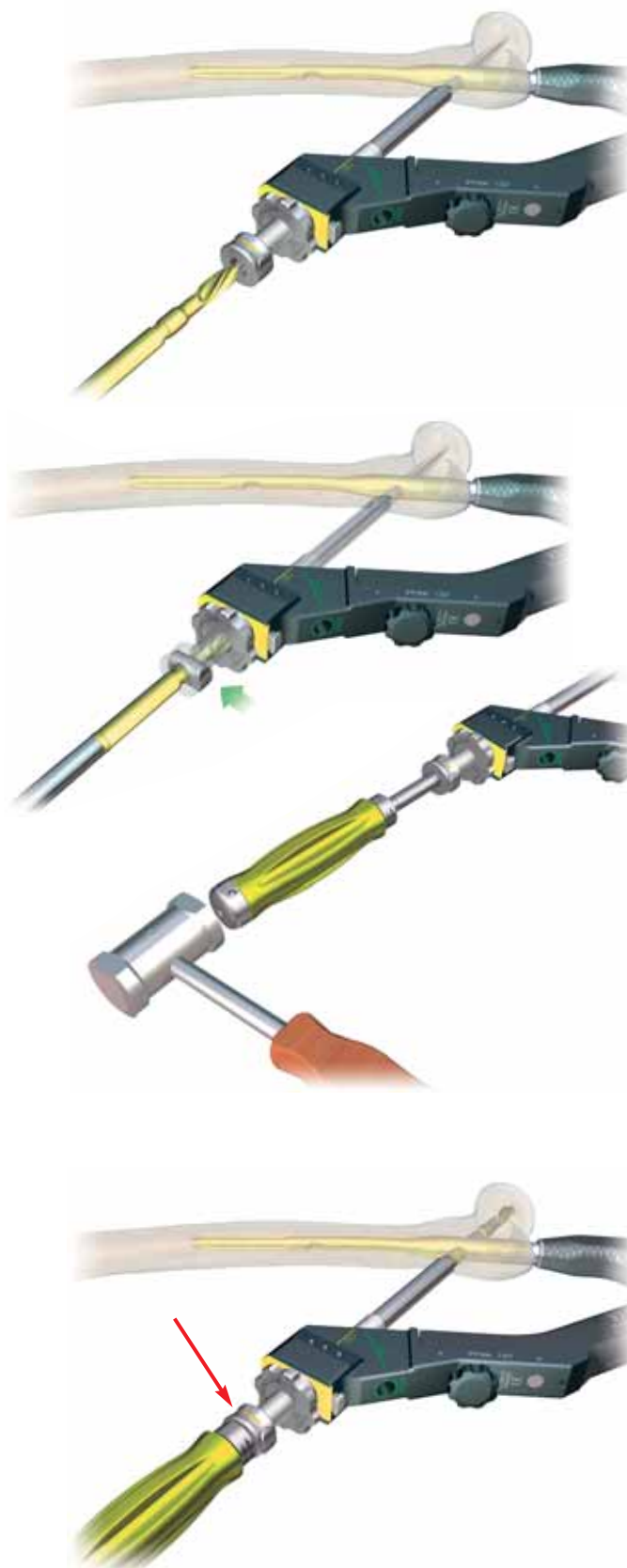
12

Insertion of PFNA blade

Insert both blade and Inserter (356.823) over the 3.2 mm Guide Wire (356.830) through the protection sleeve. In view of the particular shape of the PFNA blade, align it with the protection sleeve for insertion (see marking on the protection sleeve), pressing at the same time the button on the protection sleeve.

Hold the golden handle of the inserter and manually insert the blade over the guide wire as far as possible into the femoral head. Insert the PFNA blade to the stop by hammering lightly with the Hammer (399.420).

- ① Use image intensification to check the position of the PFNA blade.



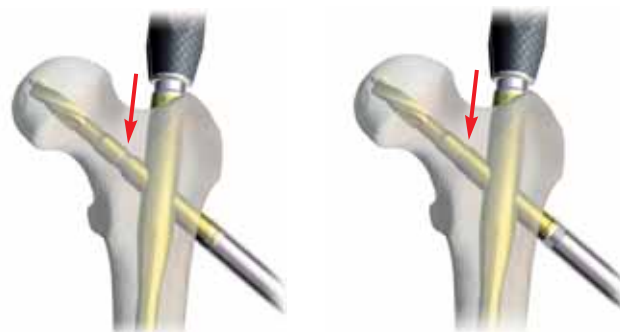
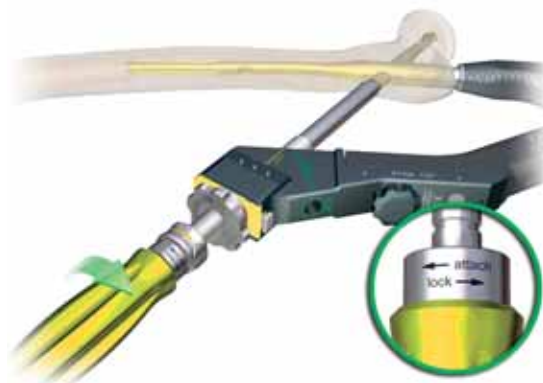
Note: Inserting the blade to the stop is important, as the inserter has to click into the protection sleeve. Do not use unnecessary force when inserting the PFNA blade.

13

Locking of PFNA blade

Turn the inserter clockwise to the stop (see «lock» marking on the handle). The PFNA blade is now locked. Verify PFNA blade locking intraoperatively. The PFNA blade is locked if all gaps are closed. If the PFNA blade cannot be locked, remove it and replace it by a new PFNA blade (see implant removal, point 1, p. 28).

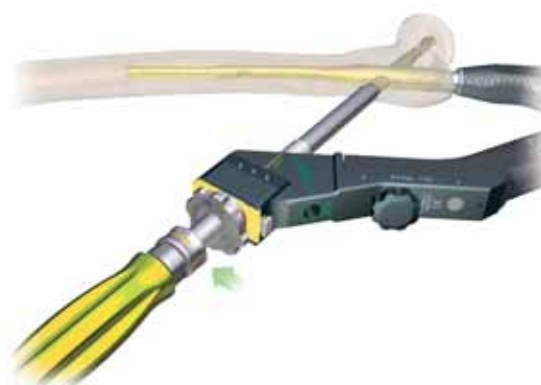
Note: Gliding of the PFNA blade is guaranteed.



Unlocked PFNA blade

Locked PFNA blade

Press the button on the protection sleeve to remove the inserter. Remove and dispose of the guide wire.



14

Removal of protection sleeve

Release and remove the protection sleeve and the buttress nut by pressing the button on the clamp device of the aiming arm.



15

Static distal locking

Perform a stab incision and insert the drill sleeve assembly for distal locking, consisting of the green 11.0/8.0 mm Protection Sleeve (356.831), the green 8.0/4.0 mm Drill Sleeve (356.828) and the green 8.0 mm Trocar (356.833), through the «static» locking hole on the aiming arm to the bone.

Remove the green Trocar (356.833) and use the 4.0 mm Drill Bit (356.834) to drill through both cortices. The tip of the drill bit should protrude by 2 to 4 mm, and the protection sleeve should be in direct contact with the bone.

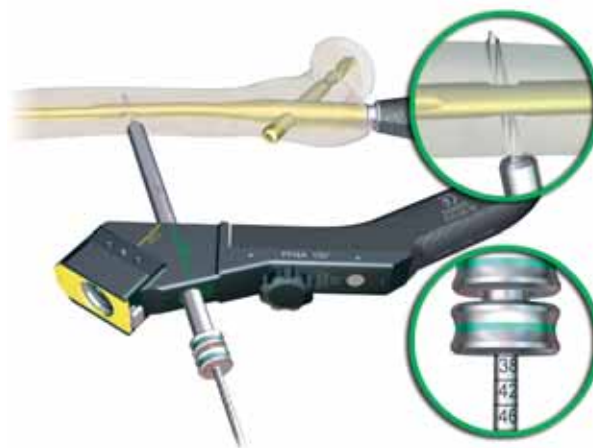
Read the length of the required locking bolt directly off the marking on the drill bit.

Note:

- Always make sure that no diastasis has occurred intraoperatively before beginning distal locking. Diastasis can cause delayed healing.
- Always ensure that the connection between PFNA, insertion handle and aiming arm is good, otherwise reaming for the distal locking bolt can damage the PFNA.

Alternative length measuring:

Determine the length of the bolt with the Depth Gauge for Locking Bolts (356.835). Advance the depth gauge to the cortex. Then draw back the hook until it engages in the opposite cortex. Add 2 to 4 mm to the measured length to ensure good engagement of the locking bolt in the opposite cortex.



16

Dynamic distal locking

Mount the PFNA Aiming Arm for dynamic locking (356.824). Proceed as described in point 15.



17

Insertion of locking bolt

Insert the locking bolt through the protection sleeve using the large Hexagonal Screwdriver (314.260).



18

Removal of instruments

Remove the protection sleeve and the aiming arm. Use the hexagonal socket to loosen the connecting screw and remove the insertion handle.

19

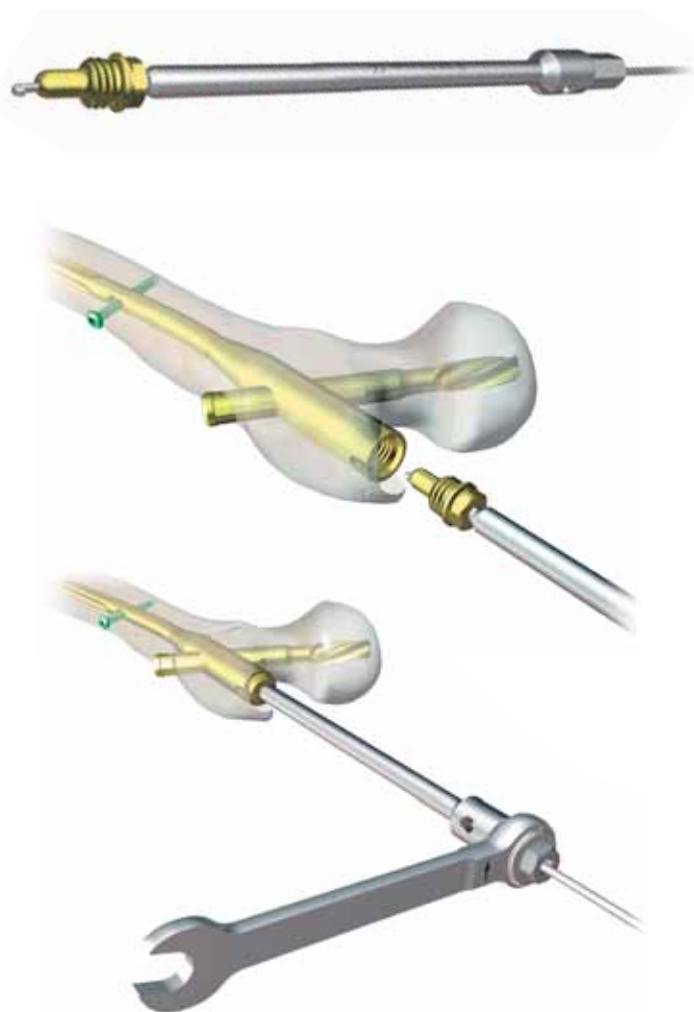
Insertion of end cap

Use the end cap with 0 mm extension if the nail end is flush with the upper edge of the trochanter major.

Insert the hook of the Guide Wire with Hook (356.717) through the selected end cap. Then guide the 4/11 mm Hexagonal Screwdriver Shaft (356.714) over the guide wire to the end cap. The end cap is retained automatically as soon as this connection is established.

Guide the cannulated end cap to the proximal end of the nail. Use the 11 mm Ratchet Wrench (321.200) to secure the end cap. Fully insert the end cap into the nail.

The last turns of the end cap in the nail will offer increased resistance. Continue to turn until the stop of the end cap touches the proximal nail end. This prevents the end cap from slipping out. Remove the hexagonal screwdriver shaft, the ratchet wrench and the guide wire.



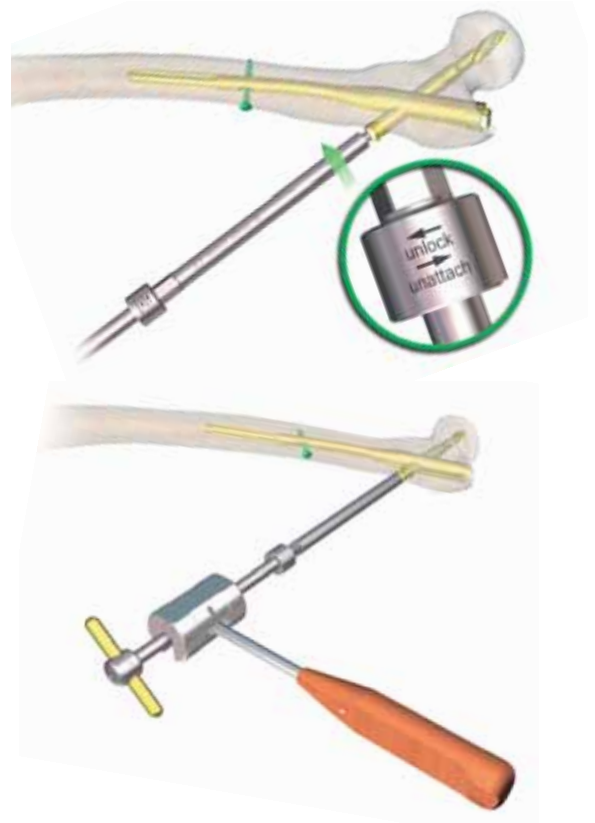
Implant removal

1

Removal of PFNA blade

- After an incision through the old scars, locate the PFNA blade by palpation or under image intensification. Insert the 3.2 mm Guide Wire (356.830). Push the Extraction Screw (356.825) over the guide wire and use gentle pressure to turn it anti-clockwise into the PFNA blade (see «unlock» marking).

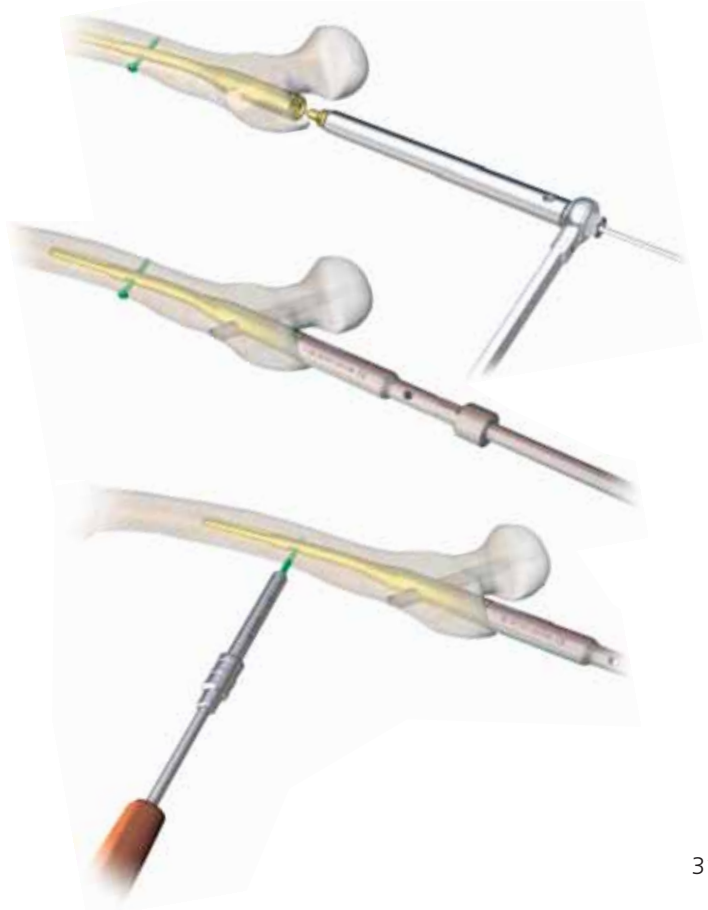
Use light hammer blows with the Slotted Hammer (357.026) to remove and dispose of the PFNA blade.



2

Removal of PFNA end cap, PFNA, and locking bolt

First remove the PFNA End Cap (473.155S). Insert the hook of the Guide Wire with Hook (356.717) through the end cap. Then guide the 4/11 mm Hexagonal Screwdriver Shaft (356.714) over the guide wire to the end cap. As soon as this connection is established, remove the end cap using the 11 mm Ratchet Wrench (321.200). Remove the PFNA. Attach the Guide Rod for PFN* (357.071) to the PFNA, and only then use the Hexagonal Screwdriver (314.260) to remove the distal locking bolt. Mount the large Holding Sleeve (314.280) onto the hexagonal screwdriver to facilitate removal of the locking bolt.



Note: Remove the locking bolt only after attaching the guide rod to the PFNA. This prevents the PFNA from rotating in the bone.

Attach the Slotted Hammer (357.026) to the guide rod to remove the PFNA. Ensure that the guide rod fits firmly into the PFNA. Tighten with the 4.5 mm Pin Wrench (321.170). Use gentle hammer blows to extract the PFNA from the femur.



Insertion depth of the PFNA blade

Correct the insertion depth of the PFNA blade

Remove the inserter, the sleeve assembly and the aiming arm. Use gentle anticlockwise pressure to insert the Extraction Screw (356.825) over the guide wire into the PFNA blade (see «unlock» marking). Advance the now unlocked PFNA blade to the desired insertion depth by applying gentle blows with the Slotted Hammer (357.026). Turning it clockwise to the stop allows relocking of the PFNA blade.



Cleaning

Intra- and postoperative cleaning

Use the 2.8 mm Stylet (319.460) or the long 2.8 mm Cleaning Stylet (357.009, length 450 mm) for intraoperative cleaning of the instrument cannulations.

Clean the instruments postoperatively with the 2.8 mm Stylet (319.460) and the 2.9 mm Cleaning Brush for cannulated instruments (319.240).

Subject to modifications.

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Instruments

309.600 Drill Bit 17.0 mm dia., cannulated



309.602 Radiographic Ruler for PFNA



309.603 Drill Sleeve 17.0/3.2 mm, for no. 357.001



314.260 Screwdriver, hexagonal, large



319.240 Cleaning Brush 2.9 mm dia.



319.970 Screw Forceps, self-retaining, length 85 mm



321.160 Combination Wrench 11 mm, length 140 mm



321.170 Pin Wrench












351.050 Tissue Protector







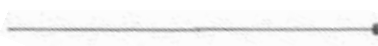




356.714	Screwdriver Shaft, hexagonal, 4.0/11.0 mm	
356.715	Screwdriver Shaft, hexagonal 11.0/11.0 mm	
356.717	Guide Wire 2.8 mm dia., with Hook, length 460 mm	
356.810*	Aiming Arm for PFNA Blade, 125°	
356.811*	Aiming Arm for PFNA Blade, 130°	
356.812*	Aiming Arm for PFNA Blade, 135°	
356.813**	Aiming Arm for PFNA Blade, 125°	
356.814**	Aiming Arm for PFNA Blade, 130°	
356.817	Buttress Nut for PFNA Blade	
356.818	Protection Sleeve 16.0 /11.0 mm for PFNA Blade (golden)	
356.819	Drill Sleeve 11.0 /3.2 mm for PFNA Blade (golden)	
356.820	Trocar 3.2 mm dia., for PFNA Blade (golden)	
356.821	Reamer 11.0 mm dia., cannulated, for PFNA Blade	








*for PFNA standard and PFNA long

**for PFNA small, XS and long

356.822	Drill Bit 11.0 mm dia., cannulated, for PFNA Blade	
356.823	Inserter for PFNA Blade	
356.824	PFNA Aiming Arm for dynamic locking	
356.825	Extraction Screw for PFNA Blade	
356.826	Aiming Jig for antirotation wire	
356.827	Drill Sleeve 5.6/3.2 mm for no. 356.826	
356.828	Drill Sleeve 8.0/4.0 mm (green)	
356.829	Measuring Device for 3.2 mm Guide Wire	
356.830	Guide Wire 3.2 mm dia., for PFNA Blade	

356.831	Protection Sleeve 11.0/8.0 mm (green)	
356.832	Wrench for PFNA Blade	
356.833	Trocar 4.0 mm dia. (green)	
356.834	Drill Bit 4.0 mm dia.	
356.835	Depth Gauge for Locking Bolts	
357.001	Protection Sleeve 20.0/17.0 mm	
357.009	Cleaning Stylet 2.8 mm dia.	
357.012	Insertion Handle for PFN* and PFN* long	
357.013	Threaded Plug for Guide Rod for PFN, for no. 357.012	

* Fits also PFNA

357.023	Socket, hexagonal, with T-handle	
357.021	Connecting Screw for PFN*, for no. 357.012	
357.026	Slotted Hammer 400g, detachable	
357.046	Fixation Sleeve for no. 357.045	
357.071	Guide Rod for PFN*	
393.100	Universal Chuck with T-handle	
399.420	Hammer	
185.280	PFNA Instrument Set in VARIO Case	
385.222	Screw Rack for 4.9 mm locking bolts	

* Fits also PFNA

685.280 Vario Case PFNA Instruments 1

685.282 Vario Case PFNA Instruments 2

689.530 Lid for Vario Case

Alternative: aiming device

357.020 Insertion Handle for PFN*, stainless steel



357.029 Connecting Screw for PFN*, for no. 357.020



357.028 Driving Cap to no. 357.020



* Fits also PFNA

Implants

PFNA standard, sterile

TAN	Diameter	Length	CCD angle
472.260S	10 mm	240 mm	125°
472.261S	11 mm	240 mm	125°
472.262S	12 mm	240 mm	125°
472.265S	10 mm	240 mm	130°
472.266S	11 mm	240 mm	130°
472.267S	12 mm	240 mm	130°
472.270S	10 mm	240 mm	135°
472.271S	11 mm	240 mm	135°
472.272S	12 mm	240 mm	135°
472.400S	9 mm	240 mm	125°
472.401S	9 mm	240 mm	130°



PFNA small, sterile

TAN	Diameter	Length	CCD angle
472.370S	10 mm	200 mm	125°
472.371S	11 mm	200 mm	125°
472.372S	12 mm	200 mm	125°
472.375S	10 mm	200 mm	130°
472.376S	11 mm	200 mm	130°
472.377S	12 mm	200 mm	130°
472.430S	9 mm	200 mm	125°
472.431S	9 mm	200 mm	130°



PFNA XS, sterile

TAN	Diameter	Length	CCD angle
472.385S	10 mm	170 mm	125°
472.386S	11 mm	170 mm	125°
472.387S	12 mm	170 mm	125°
472.390S	10 mm	170 mm	130°
472.391S	11 mm	170 mm	130°
472.392S	12 mm	170 mm	130°
472.436S	9 mm	170 mm	125°
472.437S	9 mm	170 mm	130°



PFNA long, sterile

TAN	Diameter	Length	CCD angle	
472.275S	10 mm	340 mm	125°	right
472.280S	10 mm	340 mm	130°	right
472.290S	10 mm	380 mm	125°	right
472.295S	10 mm	380 mm	130°	right
472.305S	10 mm	420 mm	125°	right
472.310S	10 mm	420 mm	130°	right
472.320S	10 mm	340 mm	125°	left
472.325S	10 mm	340 mm	130°	left
472.335S	10 mm	380 mm	125°	left
472.340S	10 mm	380 mm	130°	left
472.350S	10 mm	420 mm	125°	left
472.355S	10 mm	420 mm	130°	left
472.410S	9 mm	340 mm	125°	right
472.411S	9 mm	340 mm	130°	left
472.412S	9 mm	340 mm	125°	right
472.413S	9 mm	340 mm	130°	left



PFNA End Cap, titanium alloy, sterile

TAN	Extension
473.155S	0 mm
473.156S	5 mm
473.157S	10 mm
473.158S	15 mm



PFNA Blade, titanium alloy, sterile

TAN	Length
456.712S	80 mm
456.713S	85 mm
456.714S	90 mm
456.715S	95 mm
456.716S	100 mm
456.717S	105 mm
456.718S	110 mm
456.719S	115 mm
456.720S	120 mm



4.9 mm Locking Bolt, self-tapping

TAN Unsterile	TAN Sterile	Length
459.260	459.260S	26 mm
459.280	459.280S	28 mm
459.300	459.300S	30 mm
459.320	459.320S	32 mm
459.340	459.340S	34 mm
459.360	459.360S	36 mm
459.380	459.380S	38 mm
459.400	459.400S	40 mm
459.420	459.420S	42 mm
459.440	459.440S	44 mm
459.460	459.460S	46 mm
459.480	459.480S	48 mm
459.500	459.500S	50 mm
459.520	459.520S	52 mm
459.540	459.540S	54 mm
459.560	459.560S	56 mm
459.580	459.580S	58 mm
459.600	459.600S	60 mm
459.640	459.640S	64 mm
459.680	459.680S	68 mm
459.720	459.720S	72 mm
459.740	459.740S	74 mm
459.760	459.760S	76 mm
459.800	459.800S	80 mm
459.850	459.850S	85 mm
459.900	459.900S	90 mm
459.950	459.950S	95 mm
459.960	459.960S	100 mm





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