

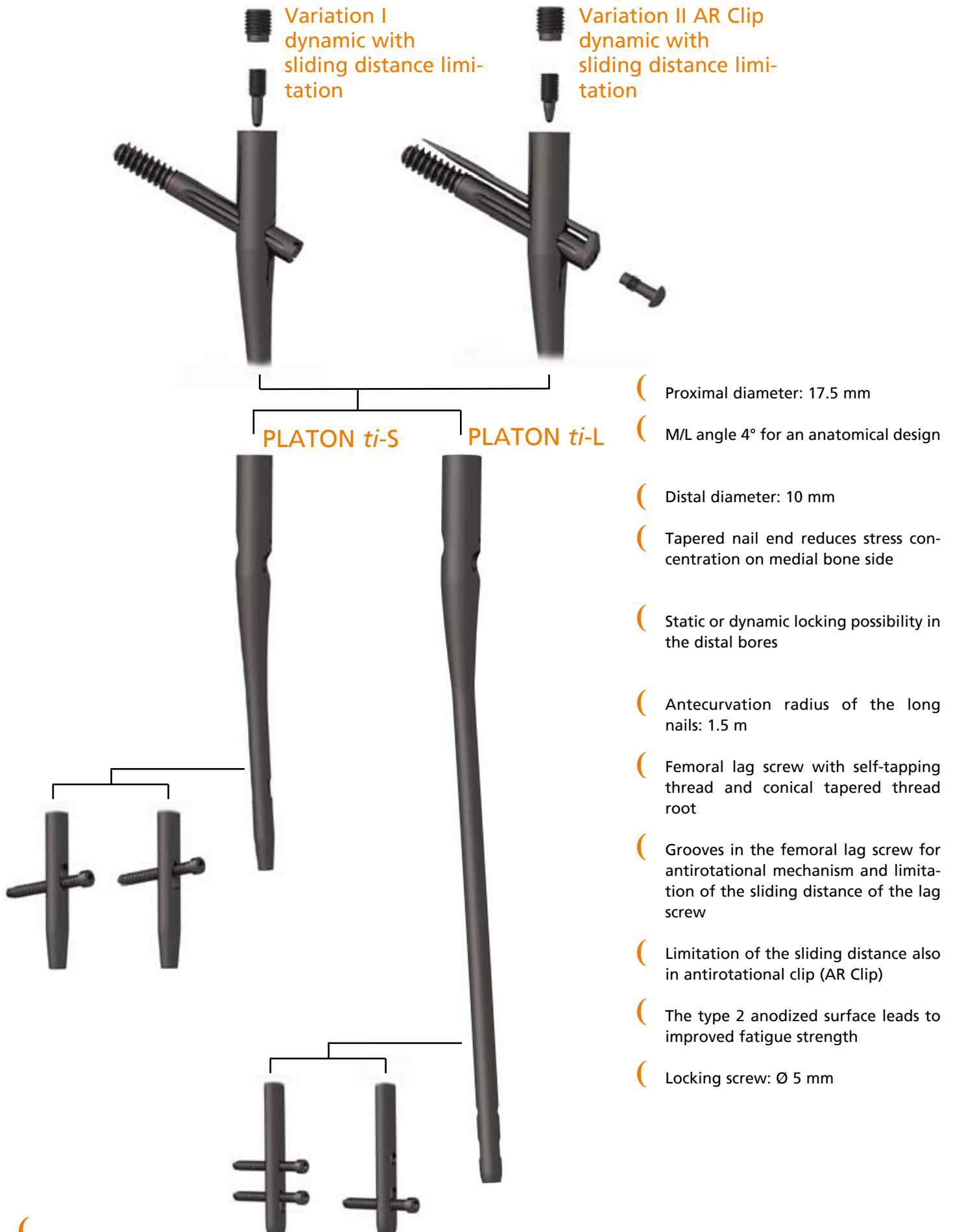
OR manual

PLATON *ti*)



(tantum))
the medical people

))) Characteristics of the PLATON *ti* system



))) PLATON *ti* System: Variation I



Characteristics: Variation I

Nail

- stable support for high mechanical resistive strength
- permits immediate post-operative loads
- implantation possible without diaphyseal drilling out

Proximal plug

- protects from tissue ingrowth
- simplifies later removal of implant

Set screw

- prevents rotation of the femoral lag screw
- prevents migration of the femoral lag screw to the medial
- limits the lateral sliding distance of the femoral lag screw
- permits the static locking of the femoral lag screw

Femoral lag screw

- supports the dynamic principle
- sliding grooves for antirotational mechanism and limitation of the sliding distance

Locking screw

- both static or dynamic locking
- ensures rotational stability of the nail

Indications: Variation I

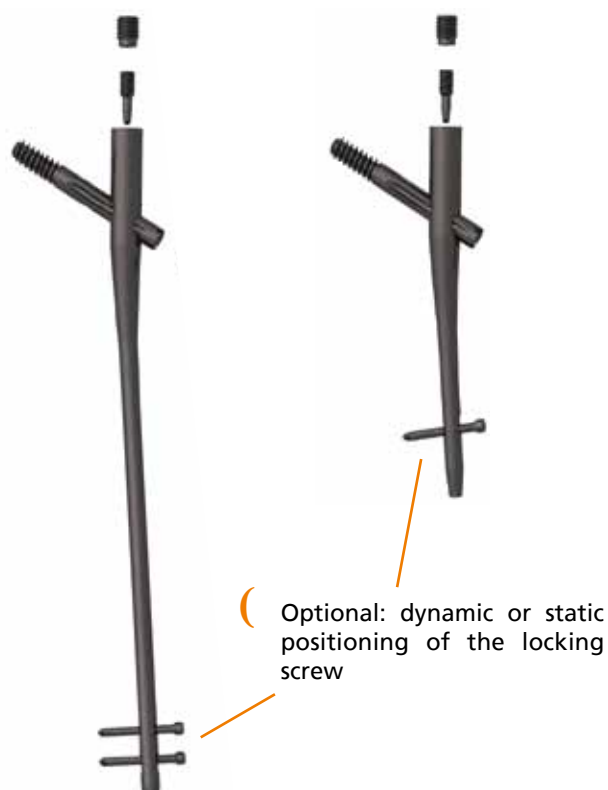
PLATON *ti* S nail

- stable per- and high sub-trochanteric fractures of the femur type A1, A2, (A3) with disrapture of the lesser trochanter (dynamic nail locking)
- stable per- and high sub-trochanteric fractures of the femur type A1, A2, (A3) without disrapture of the lesser trochanter (static nail locking)
- pathological fractures (static nail locking)

PLATON *ti* L nail

- unstable per- and sub-trochanteric femur fractures extending to the upper third of the trochanter of type A2, A3 (dynamic nail locking)
- unstable and pathological sub-trochanteric fractures (static nail locking)
- pathological femur fractures (static nail locking)
- stable trochanteric fractures in combination with a femur shaft fracture (static nail locking)
- pseudarthroses after delayed bone healing (dynamic nail locking)

PLATON *ti* L + S Nail



PLATON ti System Variation II



Characteristics: Variation II

Nail

- stable support for high mechanical resistive strength
- permits immediate post-operative load
- implantation possible without diaphyseal drilling out

Proximal plug

- prevents tissue ingrowth
- simplifies later removal of material

Set screw for AR Clip

- limits the sliding distance of femoral lag screw and AR clip
- permits static locking of the femoral lag screw and AR clip

Femoral lag screw

- supports the dynamic principle

Connection screw

- connects AR clip to the femoral lag screw

AR clip for antirotation

- prevents rotation of the head-neck fragments, especially for lateral fractures and fractures extending to the medial
- its flattened tip and short distance to the femoral lag screws minimize the cut-out risk
- its lateral angled design protects the soft tissue
- available in various lengths, adapted to the length of the femoral lag screw that is to be implanted

Locking screw

- both static or dynamic locking
- ensures the rotational stability of the nail

Indications: Variation II

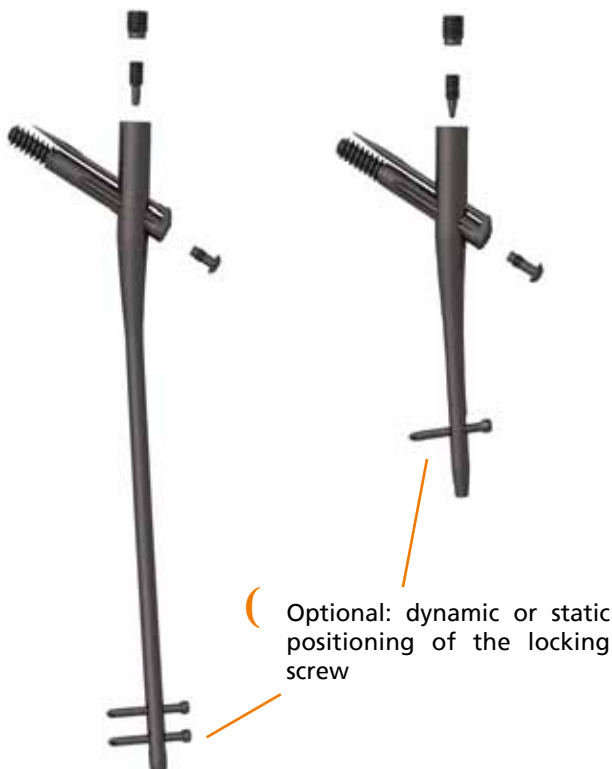
PLATON ti S-nail

- lateral to pertrochanteric unstable femur fractures of type A1, A2, (A3) with rotational instability (dynamic nail locking)
- lateral to pertrochanteric stable fractures (static nail locking)
- pathological sub-trochanteric fractures (static nail locking)

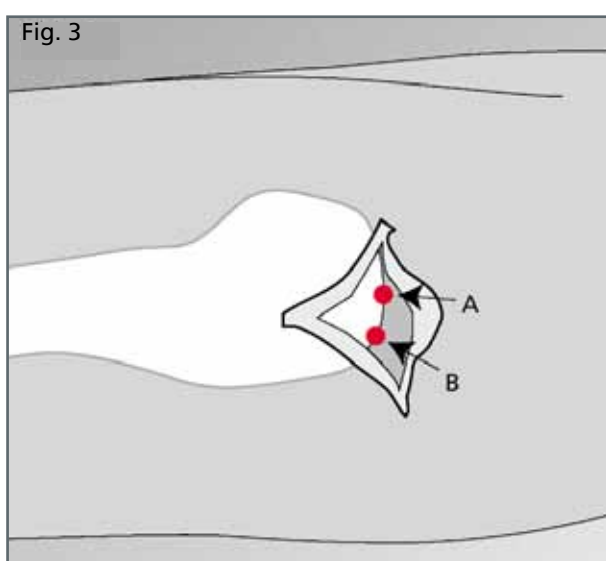
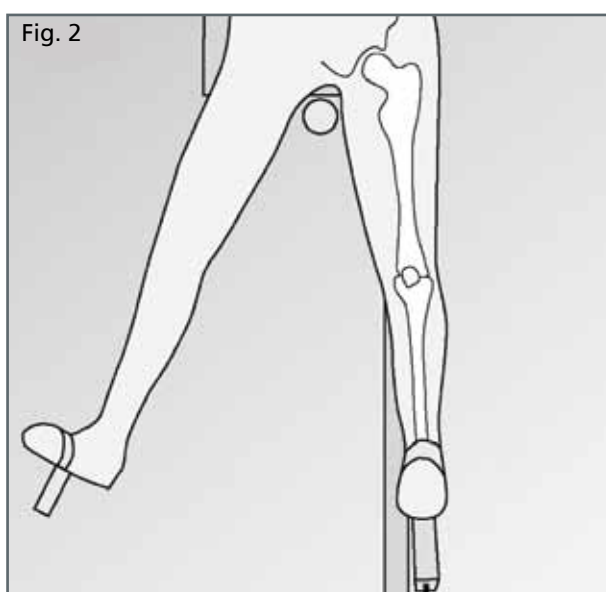
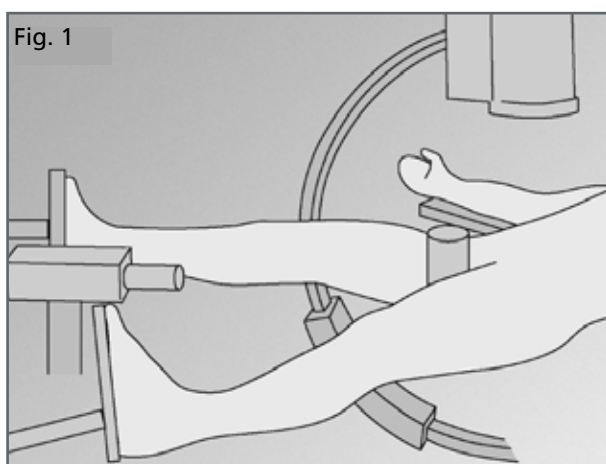
PLATON ti L-nail

- unstable femur shaft fractures in connection with medial or lateral femoral neck fractures or trochanteric fractures of type A1, B2 (dynamic nail locking)
- per- and sub-trochanteric fractures of type A2, A3 with rotational instability (dynamic nail locking)
- stable femur shaft fractures in connection with medial or lateral femoral neck fractures, proximal femur fractures in connection with supracondylar fractures
- pathological sub-trochanteric fractures (static nail locking)
- pseudarthroses and instability after delayed bone healing (dynamic nail locking)

PLATON ti L + S Nail



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1. Preoperative planning

In order to place the PLATON ti S Nail correctly, a preoperative determination of the neck-shaft angle is helpful. With major dislocation of the fragments, an x-ray of the unaffected extremity can be useful. The angle measured in the standard x-ray AP view is to be reduced by 5-10° due to the femur neck anteversion.

2. Patient position

The patient is positioned supine on the extension table. The injured extremity is positioned in a foot extension and held in 5° inward rotation. The patella should be horizontal or rotated slightly inward. Rotating the C-arm enables a medial-lateral as well as an anterior-posterior view of the trochanteric area. Therefore, the uninjured leg should be abducted as much as possible (Fig. 1 + 2).

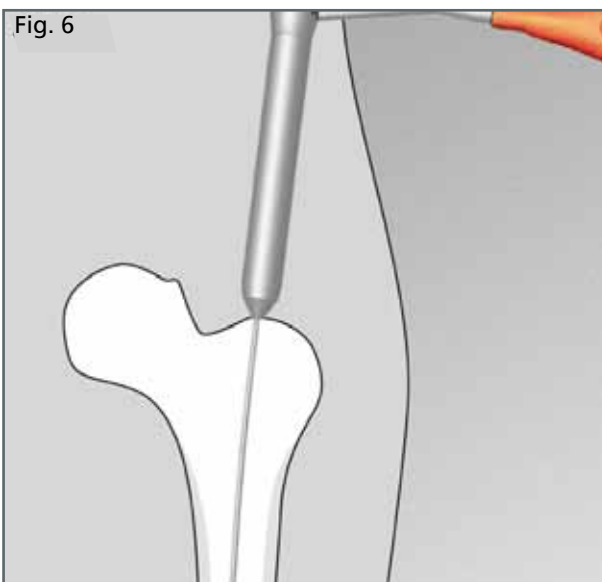
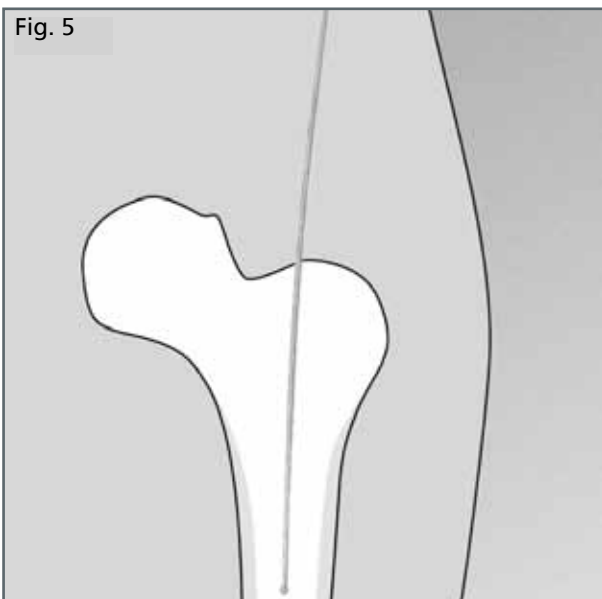
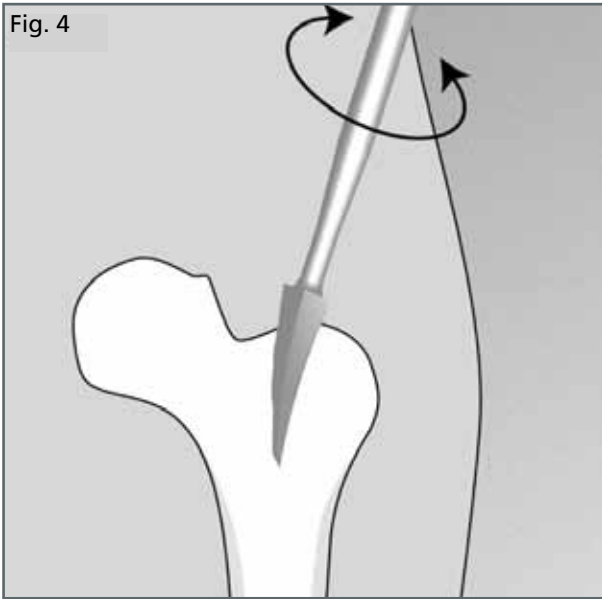
3. Reposition of the fracture

Prior to the operation, reduction of the fracture has to be conducted in an anatomical exact fashion. If this is not possible with unstable or extremely dislocated fractures, the fracture (with slight extension of the incision distally) has to be reduced openly and eventually fixated with forceps.

4. Entry point of the PLATON ti nail

The palpable proximal end of the greater trochanter is marked on the skin. Cranially, an approx. 5 cm long skin incision is made parallel to the axis of the gluteus medius muscle in direction of the iliac crest. After opening the iliotibial tractus, the tip of the greater trochanter (Fig. 3, A) is exposed by blunt preparation of the gluteus medius muscle. Absolute care must be taken when exposing the femur that it is in line with its long axis. Only in cases of very pronounced antecurvature of the femur in the proximal area should the incision be made slightly more dorsally (Fig. 3, B).

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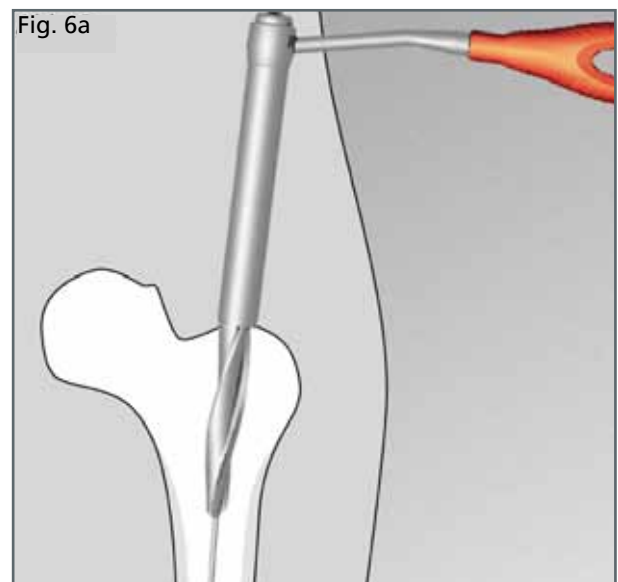
5. Opening the femur/introduction of the guide pin

The femoral canal is opened with the aid of a large curved awl by gently rotating the instrument at the described nail entry point. The tip of the awl must aim centrally into the medullary cavity (Fig. 4). For obese patients it is recommended to use an image intensifier to determine the correct entry point. The guide pin is then brought centrally into the medullary cavity under radiosopic control (Fig. 5).

Notice: *Curved awl and guide pin are not components of the provided instruments.*

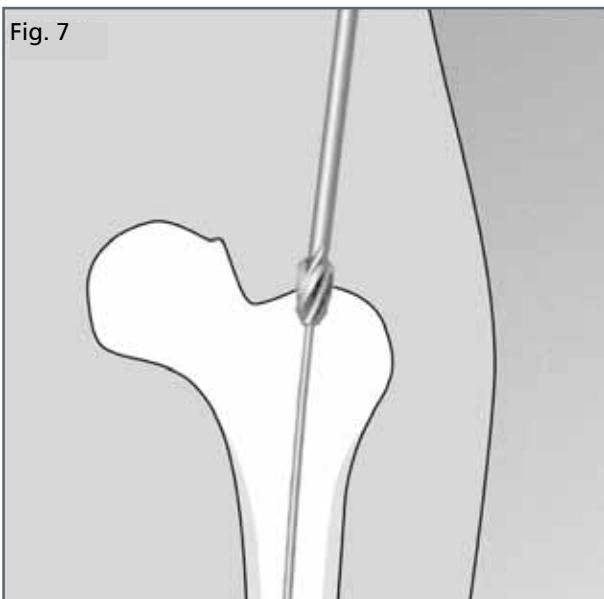
6. Preparation of the femoral canal

The proximal femur must be reamed to 18 mm in the trochanteric area. For this purpose, the tissue protective sleeve (art. no. 202-107) with inserted obturator (art. no. 203-104) is inserted with the guide pin (Fig. 6). After exchanging the obturator for the cannulated drill (art. no. 203-110), the trochanteric area is reamed to 18 mm (Fig. 6a).



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Fig. 7



PLATON ti S nail

Experience shows that this procedure permits an implantation of the nail without diaphyseal reaming. If the femoral canal appears to be too narrow for the 10 mm PLATON ti S nail, the femoral canal is reamed in 0.5 mm steps to max. 13 mm (Fig. 7) using a reamer with a guide pin.

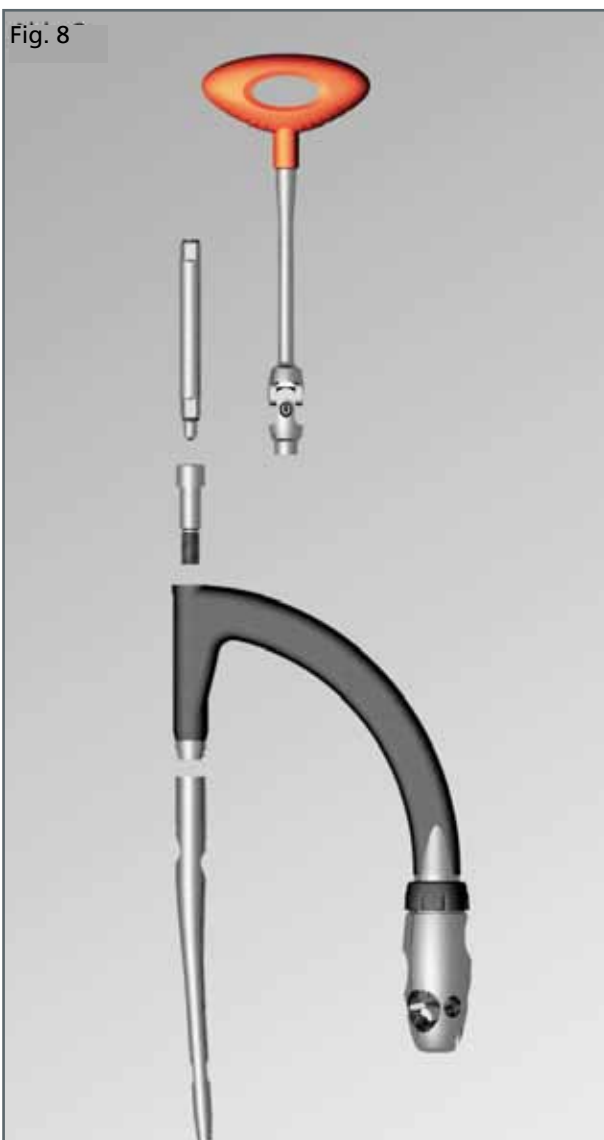
Notice: *Reamers are not components of the delivered instruments.*

PLATON ti L nail

The diaphyseal area is drilled out in 0.5 mm steps to maximally 13 mm using a reamer with a guide pin. In the event of existing bone debris, the reaming in the fracture area should be interrupted and penetration continued with switched-off drill until behind the debris area (Fig. 7).

Notice: *In order to avoid complications, the bone should be drilled out with all required caution.*

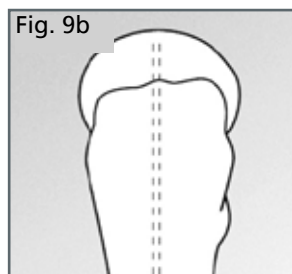
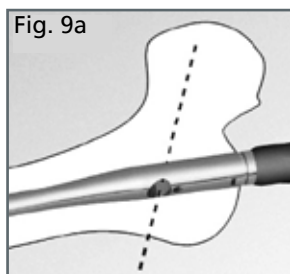
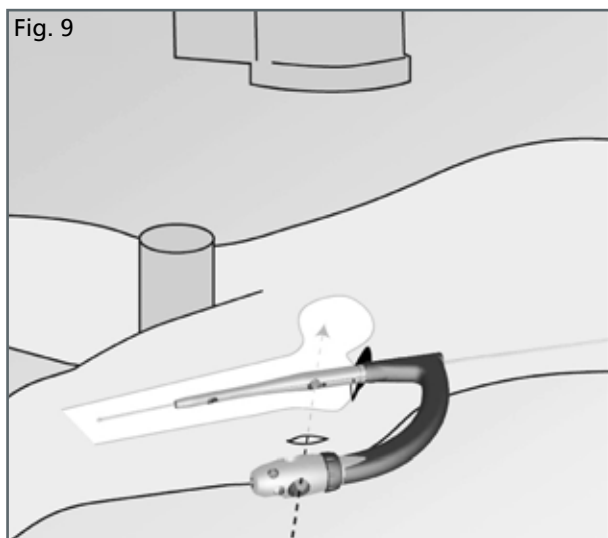
Fig. 8



7. Preparation of the PLATON ti nail and the targeting device

The PLATON ti nail is attached to the targeting device (art. no. 204-106) with the aid of the nail holding screw (art. no. 204-110) by using the universal joint screwdriver (art. no. 201-110) and the screwdriver bit (art. no. 201-115), (Fig. 8). Pay attention to a solid connection of the nail to the targeting device to avoid misdrills when the screws are inserted later on. The targeting arm of the targeting device is always positioned laterally. The markings of the desired neck-shaft angle on the targeting arm and the targeting head are aligned, the targeting head engages in the hexagonal connection. Tighten the locking ring. For later adjustment of the targeting head for distal locking, loosen the locking ring, pull the targeting head and rotate it into the desired position. After engagement of the targeting head and verification of the correct position according to the inscriptions on the targeting head and targeting arm, re-tighten the locking ring.

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8. Implantation of the PLATON ti Nail

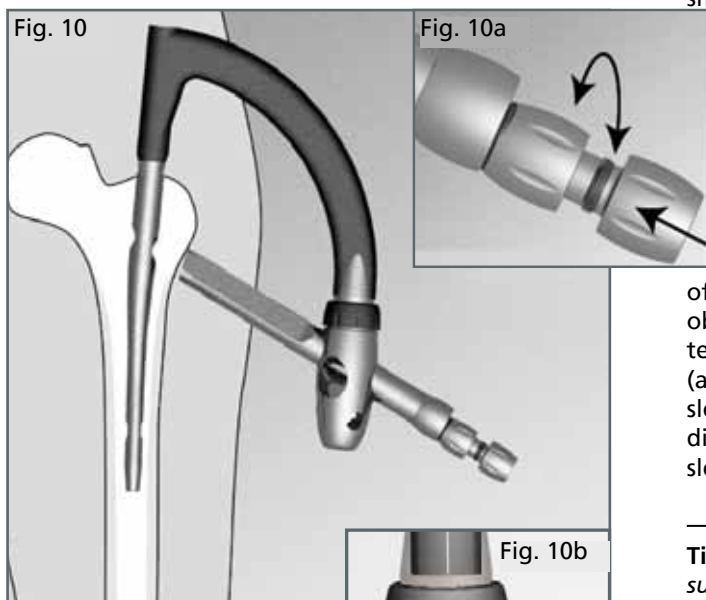
Under x-ray control, the PLATON ti nail is inserted with slight rotating movements over the guide pin into the femoral canal. The position of the nail can be identified by the tapering at the level of the bore of the femoral neck screw passage (Fig. 9a).

Attention: *If the nail can manually not be completely introduced, it must be removed and the femoral canal needs to be reamed further until the implantation by hand is possible. By no means proceed by force (e. g. hammering).*

With the PLATON ti L nail it must be considered that the greater length may make it necessary to impact the last few centimeters with the aid of the impactor (art. no. 205-100).

9. Exact positioning of the PLATON ti nail

After the introduction of the PLATON ti nail has been completed, the nail must be brought into the correct position. The ideal position of the femoral lag screw lies in the lower quadrant of the femoral head in the a/p plane (Fig. 9a) and centrally in the lateral plane (Fig. 9b). With the aid of a long K-wire which is placed over the femoral neck, the correct position of the guide wire (art. no. 206-100) must be ensured with an image intensifier in the a/p view (Fig. 9).



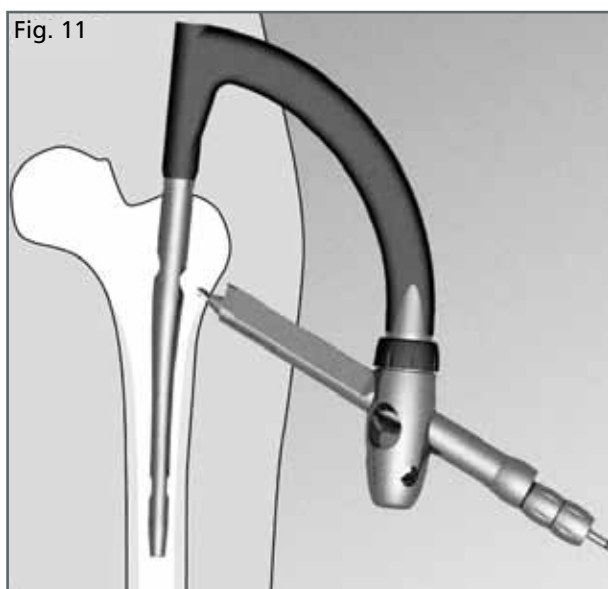
10. Introduction of the femoral lag screw

1. Removal of the guide pin.
2. Skin incision and splitting of the fascia. Insertion of the PLATON tissue protection sleeve (art. no. 202-108) with inserted obturator (art. no. 203-107) at the desired position through the targeting head of the targeting device (art. no. 204-106) (Fig. 10). The obturator is removed by slightly showing the tissue protection sleeve forwards, and the PLATON double sleeve (art. no. 202-106) is inserted. Subsequently, the guide sleeve $\varnothing 12 / \varnothing 4.3$ ti (Art. No. 202-134, green color coding) is inserted into the double sleeve. Lock the guide sleeve with a half twist (Fig. 10a).

Tip: *In order to avoid unintentional sliding of the tissue protection sleeve, it can be secured with the locking screw in the targeting head (Fig. 10b).*

The correct position is verified again by lengthening the axis to the future position of the femoral lag screw (Fig. 9a).

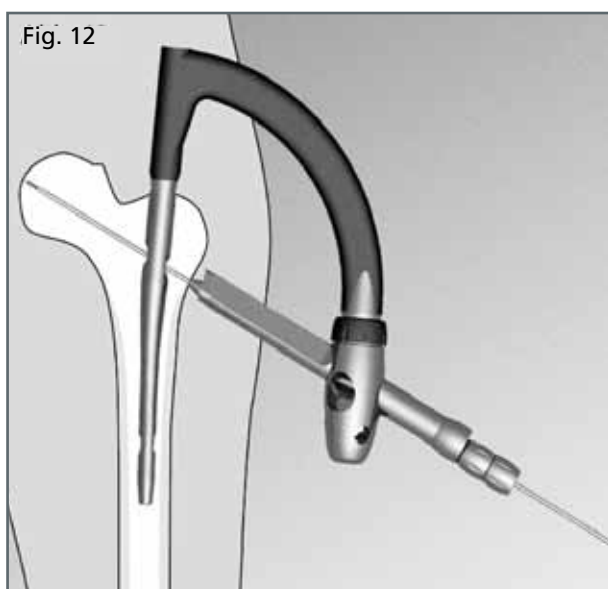
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Verify that the locking ring of the targeting arm of the targeting device is firmly tightened and that exact drilling is ensured. Use the scaled drill \varnothing 4.3 ti (art. no. 203-146) to open the lateral cortex for the guide wire (art. no. 206-100) (Fig. 11).

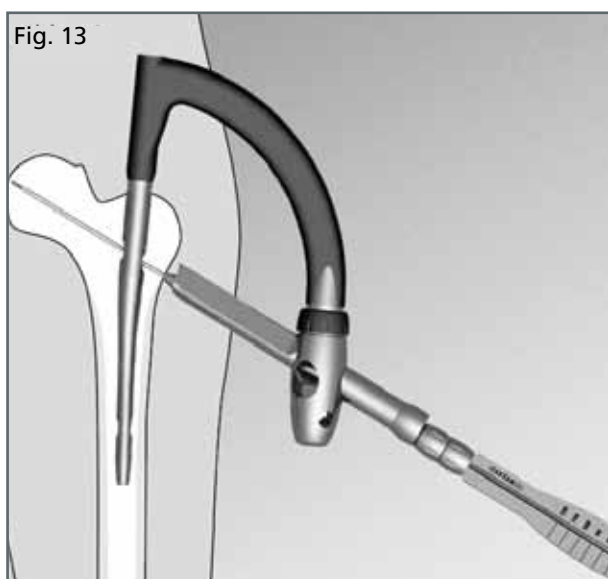
3. The guide sleeve (art. no. 202-134, green color coding) is exchanged with the guide sleeve (art. no. 202-111, white color coding). With image intensifier control in both planes, the guide wire (art. no. 206-100) is now placed exactly into the femoral neck with the aid of the chuck (art. no. 200-110) (Fig. 12). The tip of the guide wire should lie in the subchondral lamella.

Attention: Only up to this step, corrections to the position of the femoral lag screw can be carried out by withdrawing and repositioning the guide wire.



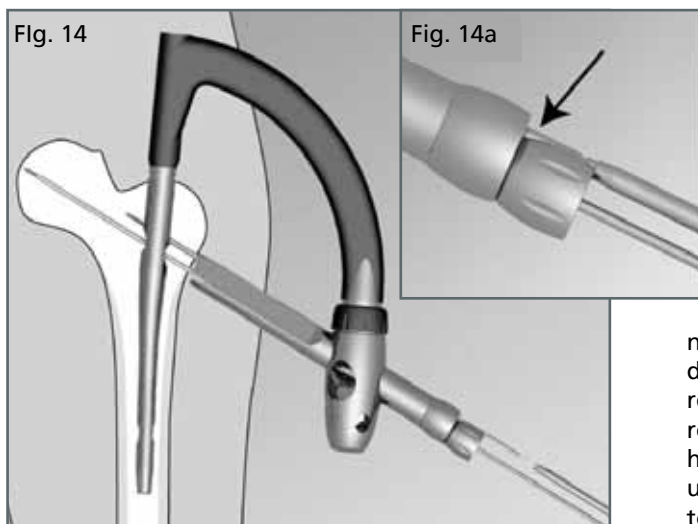
Tip: In order to avoid a false orientation of the guide wire to the ventral side, it is recommended to hold the targeting arm in position by slight counter-pressure from below during the drilling process.

4. The length of the femoral lag screw is determined by placing the length gauge (art. no. 208-100) onto the guide wire. To avoid measuring inaccuracies, precaution must be taken so that the guide sleeve is adjacent to the bone and the length gauge is slid against the guide sleeve. The end of the guide wire on the scale of the length gauge shows the length of the femoral lag screw (Fig. 13). If the value lies between two markings, then select the longer version of the femoral lag screw. Remove the guide sleeve (art. no. 202-111).



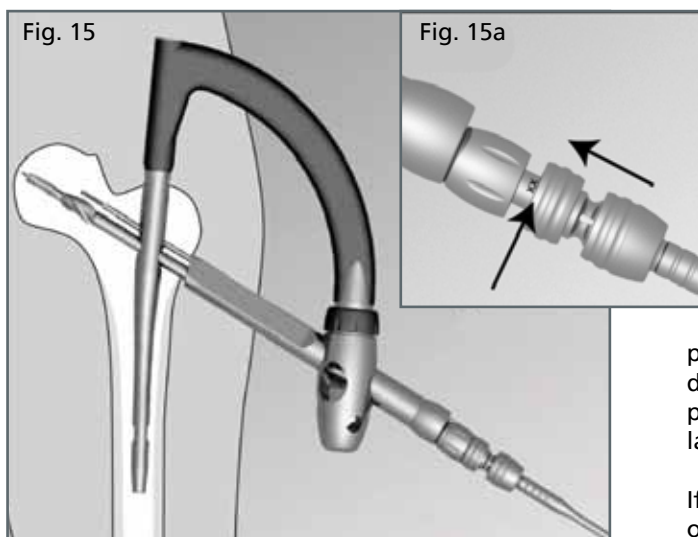
5. Alternatively, you can set a peroperative antirotational mechanism for the stabilization of the proximal fragment. In order to counteract the possible rotation of the proximal bone fragments while reaming the femoral lag screw passage and for screwing in the femoral lag screw, a fixation pin can temporarily be set. Insert the fixation pin (art. no. 206-101) by using the adapter for fixation pin (art. no. 206-102) in the upper guidance of the PLATON double sleeve (art. no. 202-106) (Fig. 14) and open the lateral cortex. Screw in the fixation pin through the locking nail into the femoral neck cancellous bone to the ring marking.

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The placement is correct if the fixation pin is flush with the PLATON tissue protection sleeve (Fig. 14a). The ring marking serves as a means of orientation. Subsequently remove the adapter for the fixation pin.

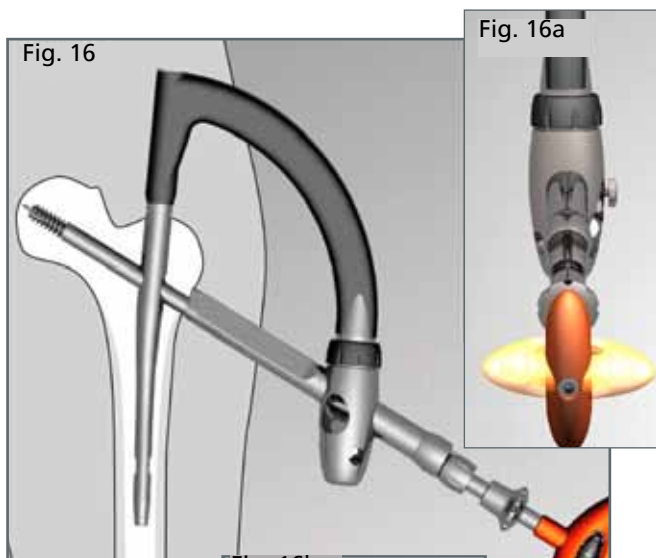
6. The previously measured length of the femoral lag screw is applied to and fixated at the step drill (art. no. 203-102). The setting has been correctly carried out if the desired number is still legible on the side pointing towards the drill tip. Ream the femoral neck manually until the step drill touches the PLATON double sleeve (Fig. 15 /15a). Due to the self-tapping thread of the femoral lag screw, further reaming and thread cutting is usually not necessary. If the bone is very hard, the Platon lag screw tap (art. no. 203-103) can be used on the Platon lag screw inserter (art. no. 201-131) to pre-cut the bone manually for an easier insertion of the femoral lag screw.



Notice: When using the nail variation I, remove the fixation pin (art. no. 206-102) with the aid of the adapter for the fixation pin (art. no. 206-102) before inserting the femoral lag screw.

7. Set the femoral lag screw of the previously defined length on the Platon lag screw inserter (art. no. 201-131). Insert the femoral lag screw over the guide wire under x-ray control (Fig. 16). The handle of the Platon lag screw inserter must be either parallel or at right angles to the arm of the targeting device (Fig. 16a) in order to ensure that the set screw is placed in one of the four sliding grooves of the femoral lag screw.

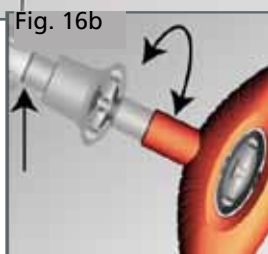
If the handle is not parallel or at right angles to the arm of the targeting device, then continue to screw in the lag screw clockwise until this position is achieved. The femoral lag screw must not be unscrewed as it could otherwise lose its support in the cancellous bone.



For closure of a reduction gap, if existing, the femoral lag screw anchored in the proximal fragment may be retracted laterally with the adjustment wheel of the Platon lag screw inserter (art. no. 201-131) (Fig. 16a).

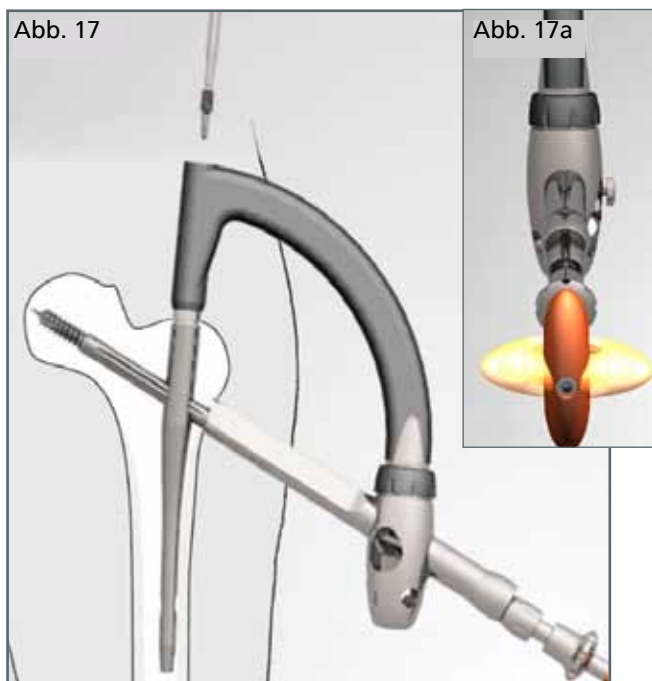
Notice: For closing a possible fracture gap, the adjustment wheel should be screwed in cross-handle direction so that the ring marking can be seen medial to the thumb wheel.

Tip: The adapter for fixation pin (art. no. 206-102) may be used as a lever. For this purpose, the cylindrical recess on the triangular connection side is put into one of the lateral bores of the thumb wheel.



When using the nail variation II with AR clip, the femoral lag screw should protrude for approximately 1-2 mm on the bone's lateral caudal side, so that the AR-clip can be fixated. For orientation serves the ring marking medial to the thumb wheel, which is on the same level with the front side of the double sleeve (art. no. 202-106) (Fig. 16b).

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Verify the exact position with the image intensifier. Correct the femoral lag screw position if necessary.

Tip: Turn the femoral lag screw in its final position only after relief of the extension. This avoids dislocation.

8. Afterwards, secure the femoral lag screw by (a) inserting the set screw (variation I) or (b) inserting the AR clip when using the nail variation II with AR clip.

11a. Insertion of the set screw (when using nail variation I dynamic or static)

1. Insert the set screw (art. no. 110-308) into the nail with screwdriver SW 4 (art. no. 201-120) and universal joint screwdriver (art. no. 201-110) through the targeting device (Fig. 17). A perceivable resistance upon screwing the setting screw is normal and should be ignored. The set screw features a self-arrester which should prevent the screw from independently unscrewing.

Notice: Before the set screw is inserted make sure that the handle of the Platon lag screw inserter is at right angles or in axial direction of the targeting arm (Fig. 17a). This ensures that the set screw is located in one of the four sliding grooves of the femoral lag screw.

Try to rotate the Platon lag screw inserter to test whether the set screw is seated in one of the sliding grooves in the femoral lag screw. If it cannot be turned, the set screw is seated correctly. If the Platon lag screw inserter can still be turned, the set screw is not seated in one of the sliding grooves and the procedure must be repeated. Hand-tighten the set screw and then turn it back 1/4 turn. This permits free gliding of the femoral lag screw. If gliding is not indicated, back-turning the set screw does not apply.

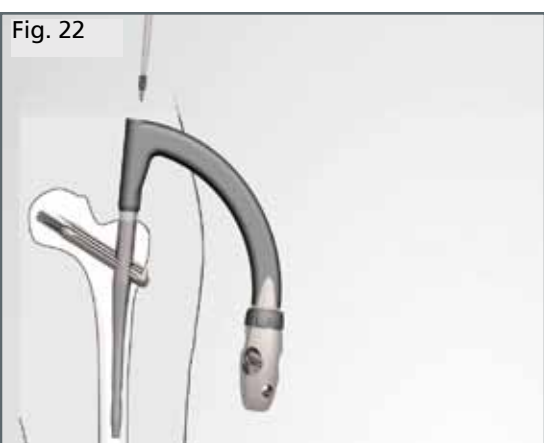
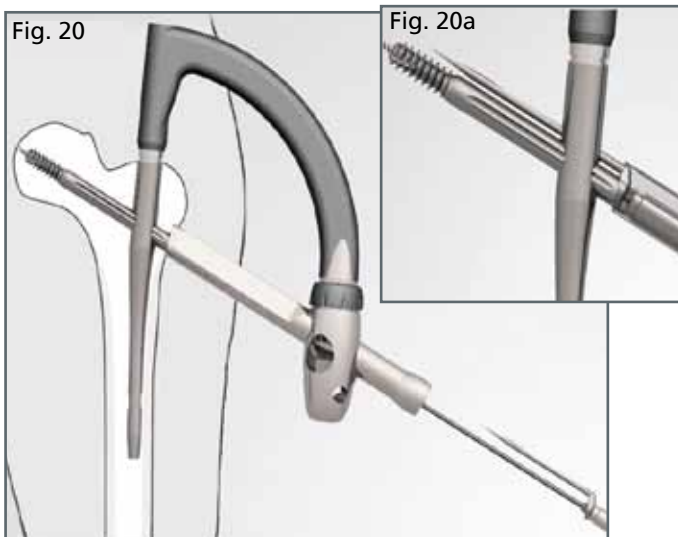
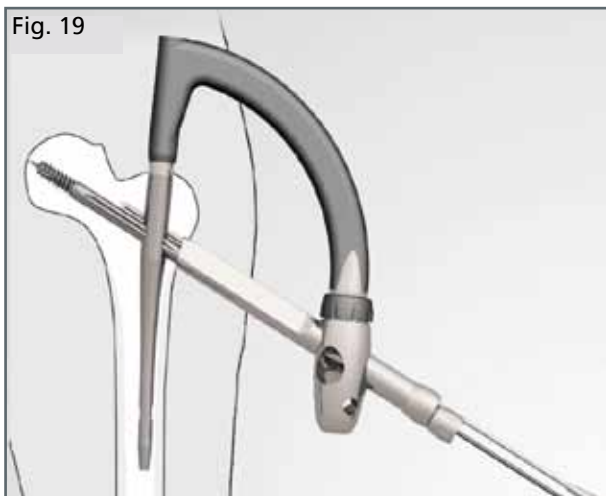
Notice: Do not turn back the set screw by more than 1/4 turn.

2. Alternatively set the connection screw (art. no. 110-304) for the lateral closing of the femoral lag screw and to avoid tissue ingrowth. The connection screw is screwed in with the screwdriver SW 5 (art. no. 201-100) over the guide wire (art. no. 206-100) through the double sleeve (art. no. 202-106) into the lateral thread of the femoral neck to the stop. In doing so, you must overcome the self-arrester in the screw (Fig. 18, 18a).

3. Remove the Platon lag screw inserter and the double sleeve.



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11b. Insertion of the AR clip (when using nail variation II)

1. If the fixation pin has not been positioned beforehand and the lateral cortex thereby has not already been opened, introduce the awl (art. no. 203-116) into the upper guidance of the PLATON double sleeve (art. no. 202-106) and open the lateral cortex. With slight back-and-forth movements, depending on the bone quality, push the awl in through the locking nail to the maximum insertion length (max. to shortly before the end of the femoral lag screw) into the cancellous bone of the femoral neck (Fig. 19). Then remove the awl and the PLATON double sleeve. The guide wire remains in the femoral lag screw.

2. Screw the AR clip onto the Platon lag screw inserter (art. no. 201-131) until the four cones of the Platon lag screw inserter engage in the recess of the AR clip. The Platon lag screw inserter, led over the guide wire (Fig. 20) is for the incorporation of the AR clip. The AR clip is conducted through the tissue protection sleeve, through the prepared proximal opening in the corticalis, and inserted through the locking nail, until the head of the AR clip noticeably impacts on the lateral end of the femoral lag screw (Fig. 20a).

3. Remove the lag screw inserter and fixate the AR clip with the connection screw (art. no. 110-304) by using the screwdriver SW 5 (art. no. 201-100) (Fig. 22). Screw the connection screw tightly to the stop. A perceivable resistance upon screwing the connection screw is normal and should be overcome. The connection screw is furnished with a self-arrester which helps prevent autonomous loosening of the screw.

Insert the set screw for AR clip (art. no. 110-309) with screwdriver bit SW 4 (art. no. 201-120) and universal joint screwdriver (art. no. 201-110) with the targeting device into the nail (Fig. 22).

You must overcome a perceivable resistance upon screwing the set screw. The connection screw is furnished with a self-arrester which helps prevent the autonomous loosening of the screw.

Fasten the set screw finger-tight and subsequently turn it back 1/4 revolution. This permits free sliding of the assemblage of AR clip and femoral lag screw. If sliding is not indicated, back-turning the set screw does not apply.

Notice: Do not turn back the set screw by more than 1/4 revolution.

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Now the head-neck fragments are secured against rotation. Subsequently remove the tissue protection sleeve (art. no. 202-108). Distal locking of the nail is accomplished with a PLATON ti S nail using the targeting device (art. no. 204-106), so that the targeting device initially remains on the implant (Fig. 23).

PLATON ti L nails are distally locked by means of a free-hand technique (Chapter 12b).

12a. Distal locking PLATON ti S nail

1. Position the targeting head for the desired distal locking (dynamic or static locking of the nail). Loosen the locking ring to adjust the targeting head and rotate the targeting head by pulling into the desired position. After the engagement of the targeting head and verification of the correct position on the basis of the relevant labeling on targeting head and targeting arm, re-tighten the locking ring.

2. Insertion of the distal tissue protection sleeve \varnothing 11 / \varnothing 7 ti (art. no. 202-133) with obturator \varnothing 7 / ti (art. no. 203-144) to the desired pre-set position through the targeting head of the targeting device. Lock the tissue protection sleeve and obturator with half a rotation. After stab incision and splitting the fascia, continue conducting the instrument directly onto the cortical bone (Fig. 24). Remove the obturator.

3. Insert the guide sleeve \varnothing 7 / 4.3 ti (art. no. 202-134, green color coding) into the tissue protection sleeve, fixate it with half a rotation and advance to the cortical bone. Examine whether the locking ring on the targeting arm of the targeting device is firmly tightened and thus exact drilling is ensured. Subsequently insert the spot facer \varnothing 4.3 / ti (Fig. 25). After opening the cortical bone, insert the drill \varnothing 4.3 / ti (art. no. 203-146) with green color coding and drill out the lateral and medial corticalis (Fig. 26). In order to avoid soft tissue irritation, it is important that the tissue protection sleeve and guide sleeve have firm contact to the bone during the drilling procedure. Remove the guide sleeve after the drilling procedure.

4. The lengths of the distal locking screws are determined with the aid of the scale which you find on the shaft of the drill (art. no. 203-120) and the guide sleeve (art. no. 202-104) (Fig. 26a). When drilling through the medial cortex, the value shown at the end of the guide sleeve corresponds to the length of the required locking screw.



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Fig. 27

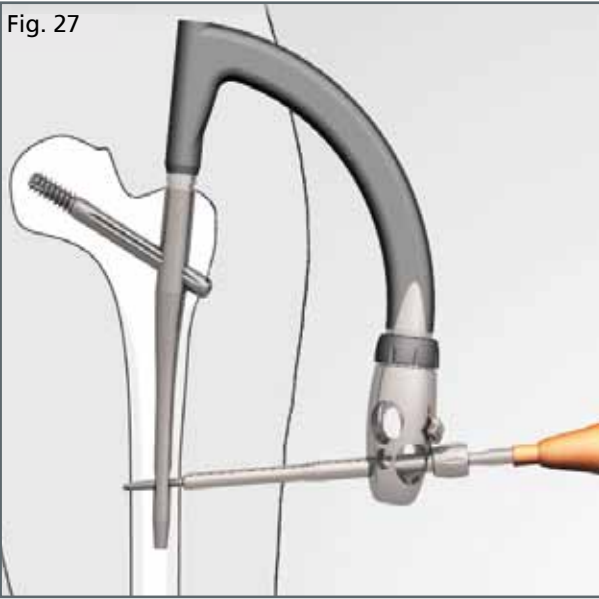


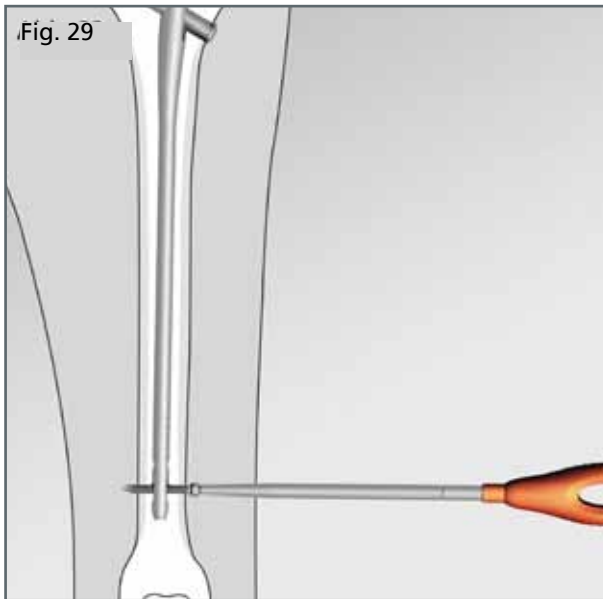
Fig. 28



Tip: If the drill noticeably contacts the opposite cortical bone, then the length of the distal locking screw corresponds to the determined value + 5 mm (which is about the thickness of the medial cortical bone). Avoid measuring inaccuracy by positioning the guide sleeve close to the bone, and have the guide sleeve correctly connected to the tissue protection sleeve. Determine the exact screw length and remove the drill and the guide sleeve. If the value lies between the two markings, then the longer version of the locking screw should be selected.

5. Place the locking screw of the defined length onto the screwdriver SW 3.5/ti (art. no. 201-105 or art. no. 201-106). Insert it into the tissue protection sleeve and make sure that the sleeve lies firmly on the bone (Fig. 27). The screw should not be fastened too tightly to the cortical bone. The marking on the shaft of the screwdriver serves as an orientation: If it is aligned with the sleeve's rim, then the screw head lies strain-free at the lateral cortical bone. Verification of the correct placement by x-ray in two planes and documentation (Fig. 28). Remove the tissue protection sleeve and remove the targeting device from the PLATON ti nail by loosening the nail holding screw (art. no. 204-110) using the universal joint screwdriver (art. no. 201-110) and the screwdriver bit (art. no. 201-115).

))) PLATON ti OR manual



12b. Distal locking of PLATON ti L nail (freehand technique)

Notice: The system does not contain instruments for setting the distal locking bore for PLATON ti L nails. The diameter for pre-drilling of the cortical bone is 4.3 mm.

The locking screw is placed with the screwdriver SW 3.5/ ti (art. no. 201-105 or art. no. 201-106) (Fig. 29).

13a. Positioning of the proximal plug using the PLATON ti nail variation I (Fig. 30) and variation II with AR clip (Fig. 30a)

After removing the targeting device, use the proximal plug (art. no. 110-301) with the screwdriver bit SW 4 (art. no. 201-120) for the universal joint screwdriver SW 10 (art. no. 201-110). In order to avoid tilting during the insertion, level the proximal plug exactly to the proximal axis of the locking nail (Fig. 30). The proximal plug is placed correctly if it is aligned with the PLATON ti nail after screwing.



Notice: The proximal plug prevents the ingrowth of tissue in the nail end. This ensures that there will be free access to the set screw lying below it if the nail needs to be removed. We therefore urgently recommend to use the proximal plug.

))) PLATON ti OR manual

14. Removal of the implant

Notice: The system does not contain extraction instruments. These can be requested separately if required.

1. Removal of the distal locking screw, excision of the old scar, detection of the screw head. After palpation of the precise position, carry out the incision and exposure. Remove the distal locking screw with the screwdriver SW 3.5 (art. no. 201-105 or art. no. 201-106) (Fig. 31).

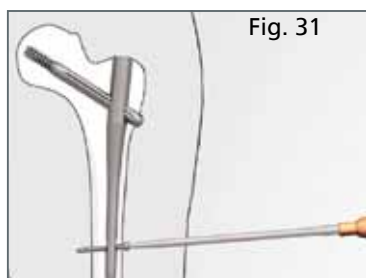


Fig. 31

2. Removal of proximal plug and locking screw

Excision of the upper scar. Splitting of the aponeurosis and blunt preparation to tip of the greater trochanter. Exposure of the proximal nail end. Removal of the proximal plug with the aid of the universal joint screwdriver (art. no. 201-110) and screwdriver bit SW 4 (art. no. 201-120) (Fig. 32). Subsequently, removal of the set screw with the aid of the universal joint screwdriver (art. no. 201-110) and screwdriver bit SW 4 (art. no. 201-120).

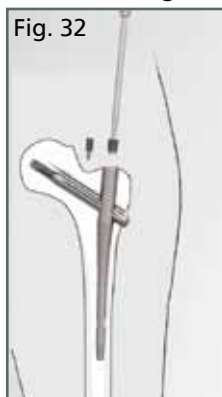


Fig. 32

3. Removal of connection screw and AR Clip

Excision of the middle scar, splitting of the fascia and exposure of the lateral end of the femoral lag screw (possibly with the help of an image intensifier). It may be helpful to introduce a guide wire (art. no. 206-100) into the femoral lag screw. The connection screw is screwed out with the screwdriver (art. no. 201-100) (Fig. 33). If an AR Clip is implanted, then it must be removed before taking out the femoral lag screw. For easier location of the screw head, the guide wire (art. no. 206-100) or a Kirschner's wire should be inserted through the connection screw (art. no. 110-304). The connection screw is then screwed out with the screwdriver (art. no. 201-100) (Fig. 34) and the clip with the screwed-on lag screw inserter (art. no. 201-131) is withdrawn subsequently (Fig. 35).

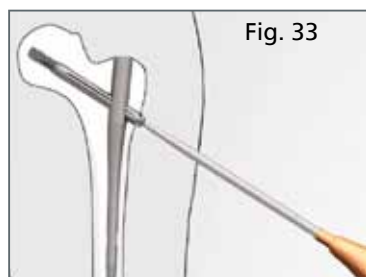


Fig. 33

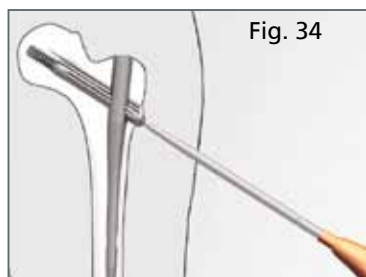


Fig. 34

Alternatively, a Kocher's clamp or similar can be used to remove the clip. If the femoral lag screw does not take hold when loosening the connection screw, the femoral lag screw can be locked by means of a 2 mm Kirschner's wire through the small drill hole in the clip.

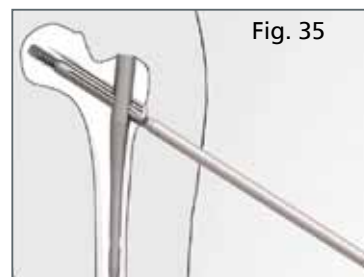


Fig. 35

4. Removal of the femoral lag screw

Connect the lag screw inserter to the femoral lag screw (Fig. 36). The femoral lag screw can then be removed.

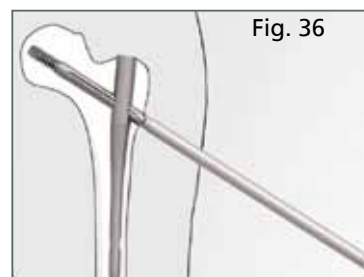


Fig. 36

5. Removal of the PLATON ti nail




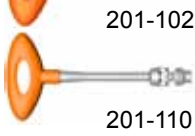





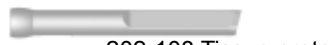
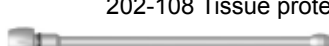

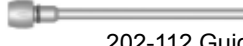
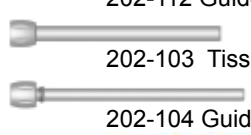

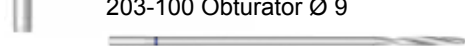
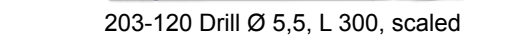
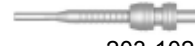
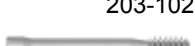
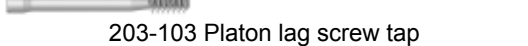

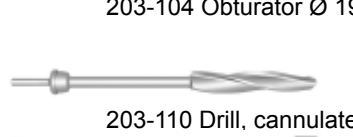
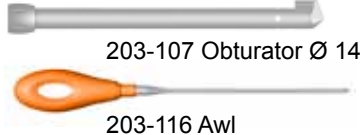
To remove the nail, screw the extraction rod connector (art. no. 205-105) into the nail. Connect the extraction rod (art. no. 205-115) to the extraction rod handle (art. no. 205-125) and the impaction weight (art. no. 250-120), screw it onto the extraction rod connector and tighten it firmly with the wrench (art. no. 201-140). Then carefully extract the nail (Fig. 37).

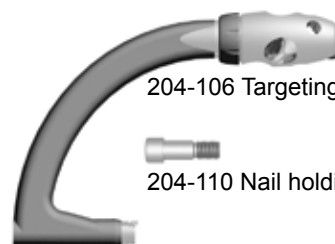


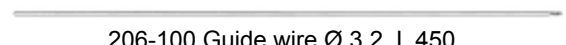

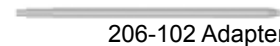






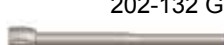


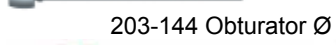
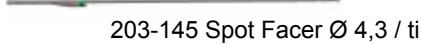
Fig. 37

Tip: If problems occur with the exact insertion of the extraction rod connector, the nail can alternatively be removed with the femoral lag screw, which has previously been removed, and the screwed-on lag screw inserter. The screw is then driven into the proximal nail end until it is locked in the thread. Then the nail can be withdrawn easily.



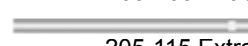


))) Instruments

-  200-110 Chuck
-  201-100 Screwdriver SW 5
-  201-102 Screwdriver with T handle SW 5
-  201-110 Universal joint screwdriver SW 10
-  201-115 Screwdriver bit SW 10
-  201-120 Screwdriver bit SW 4
-  201-131 Lag screw Inserter
-  202-106 Double sleeve
-  202-108 Tissue protection sleeve
-  202-111 Guide sleeve Ø 12 / Ø 3.2
-  202-112 Guide sleeve Ø 12 / Ø 5,5
-  202-103 Tissue protection sleeve Ø 11 / Ø 9
-  202-104 Guide sleeve Ø 9 / Ø 5,5
-  202-107 Tissue protection sleeve Ø 21 / Ø 19
-  203-100 Obturator Ø 9
-  203-120 Drill Ø 5,5, L 300, scaled
-  203-102 Step Drill
-  203-103 Platon lag screw tap
-  203-104 Obturator Ø 19
-  203-110 Drill, cannulated Ø 17,5 / Ø 3,5
-  203-107 Obturator Ø 14
-  203-116 Awl
-  203-138 Spot Facer Ø 5,5, L 240

-  204-106 Targeting device
-  204-110 Nail holding screw M12
-  205-100 Impactor
-  206-100 Guide wire Ø 3.2, L 450
-  206-101 Fixation Pin
-  206-102 Adapter for Fixation Pin
-  208-100 Length gauge

- ti Instruments**
-  201-105 Screwdriver with T handle SW 3,5 / ti
 -  201-106 Screwdriver SW 3,5 / ti
 -  202-132 Guide sleeve Ø 12 / Ø 4,3 / ti
 -  202-133 Tissue protection sleeve Ø 11 / Ø 7 ti
 -  202-134 Guide sleeve Ø 7 / Ø 4,3 / ti
 -  203-144 Obturator Ø 7 / ti
 -  203-145 Spot Facer Ø 4,3 / ti
 -  203-146 Drill Ø 4,3 / ti



-  201-140 Wrench SW 10
-  205-105 Extraction Rod Connector M 12
-  205-115 Extraction Rod
-  205-120 Impaction weight
-  205-125 Extraction Rod Handle

PLATON *ti* components



PLATON *ti* femoral lag screw

	art. no. non-sterile	art. no. sterile
Dimensions		
Ø12, L 85	110-200	110-800
Ø12, L 90	110-201	110-801
Ø12, L 95	110-202	110-802
Ø12, L 100	110-203	110-803
Ø12, L 105	110-204	110-804
Ø12, L 110	110-205	110-805



PLATON *ti* locking screw

	art. no. non-sterile	art. no. sterile
Dimensions		
Ø 5, L 25	101-140	101-160
Ø 5, L 30	101-141	101-161
Ø 5, L 35	101-142	101-162
Ø 5, L 40	101-143	101-163
Ø 5, L 45	101-144	101-164
Ø 5, L 50	101-145	101-165
Ø 5, L 55	101-146	101-166
Ø 5, L 60	101-147	101-167
Ø 5, L 65	101-148	101-168
Ø 5, L 70	101-149	101-169

PLATON *ti* AR-Clip

	art. no. non-sterile	art. no. sterile
Dimensions		
S	110-303	110-903
M	110-305	110-905
L	110-307	110-907

PLATON *ti* connection screw

	art. no. non-sterile	art. no. sterile
Dimensions		
M7	110-304	110-504



PLATON *ti* S-nail

	art. no. non-sterile	art. no. sterile
Dimensions		
Ø 10, L 190, 125°	110-400	110-600
Ø 10, L 190, 130°	110-401	110-601



PLATON *ti* L-nail

Dimensions	side	art. no. non-sterile	art. no. sterile
Ø 10, L 320, 125°	right	110-409	110-609
Ø 10, L 340, 125°	right	110-410	110-610
Ø 10, L 360, 125°	right	110-411	110-611
Ø 10, L 380, 125°	right	110-412	110-612
Ø 10, L 400, 125°	right	110-413	110-613
Ø 10, L 320, 130°	right	110-419	110-619
Ø 10, L 340, 130°	right	110-420	110-620
Ø 10, L 360, 130°	right	110-421	110-621
Ø 10, L 380, 130°	right	110-422	110-622
Ø 10, L 400, 130°	right	110-423	110-623
Ø 10, L 320, 125°	left	110-429	110-629
Ø 10, L 340, 125°	left	110-430	110-630
Ø 10, L 360, 125°	left	110-431	110-631
Ø 10, L 380, 125°	left	110-432	110-632
Ø 10, L 400, 125°	left	110-433	110-633
Ø 10, L 320, 130°	left	110-439	110-639
Ø 10, L 340, 130°	left	110-440	110-640
Ø 10, L 360, 130°	left	110-441	110-641
Ø 10, L 380, 130°	left	110-442	110-642
Ø 10, L 400, 130°	left	110-443	110-643

PLATON *ti* proximal plug

	art. no. non-sterile	art. no. sterile
Dimensions		
M 12, L 14	110-301	110-901



PLATON *ti* set screw

	art. no. non-sterile	art. no. sterile
Dimensions		
M 7, L 27	110-308	110-908

PLATON *ti* set screw for AR Clip

	art. no. non-sterile	art. no. sterile
Dimensions		
M 7, L 22	110-309	110-909

