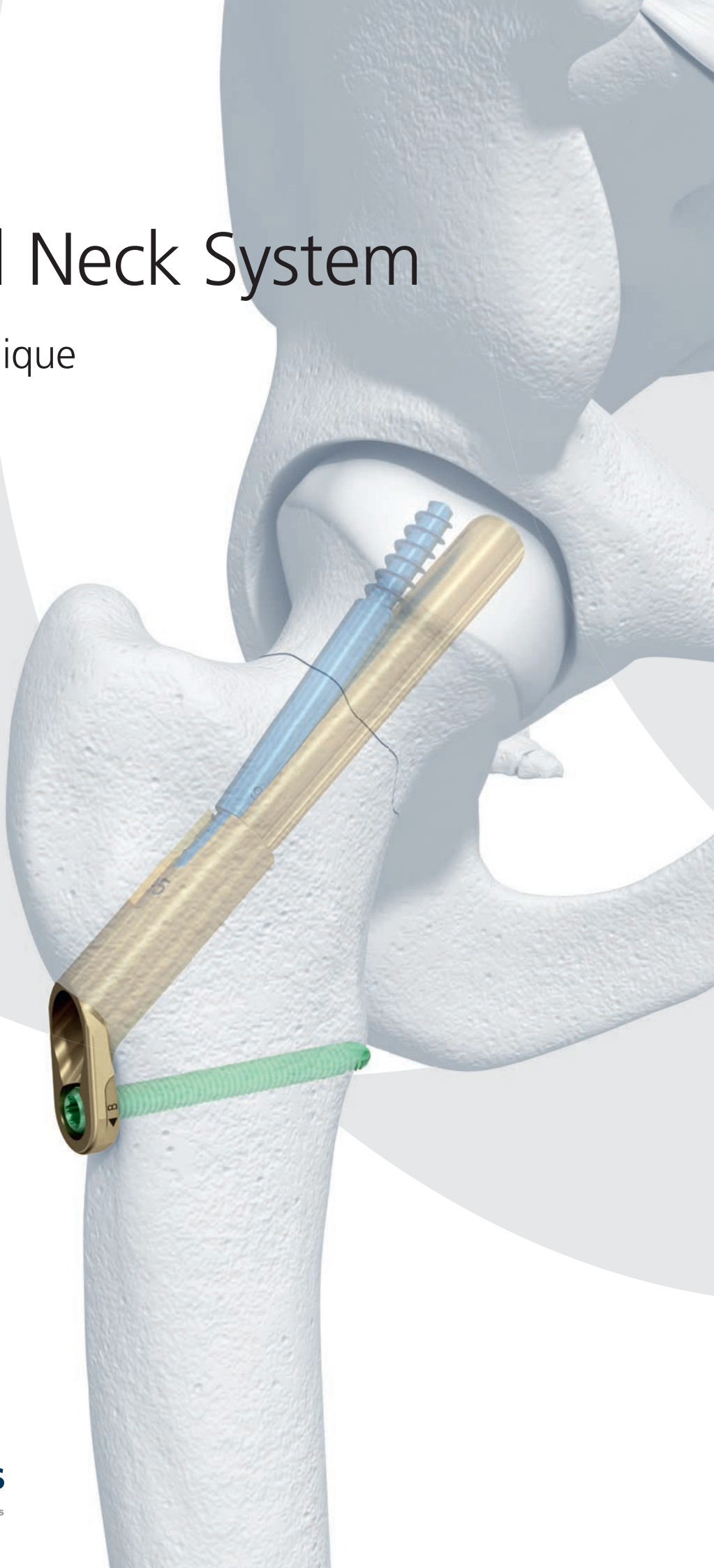
Femoral Neck System

Surgical Technique



DePuy Synthes

PART OF THE Johnson&Johnson FAMILY OF COMPANIES

Image intensifier control

This description alone does not provide sufficient background for direct use of DePuy Synthes products. Instruction by a surgeon experienced in handling these products is highly recommended.

Processing, Reprocessing, Care and Maintenance
For general guidelines, function control and dismantling of multi-part instruments, as well as processing guidelines for implants, please contact your local sales representative or refer to:
http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance
For general information about reprocessing, care and maintenance of Synthes reusable devices, instrument trays and cases, as well as processing of Synthes non-sterile implants, please consult the Important Information leaflet (SE_023827) or refer to:
http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance

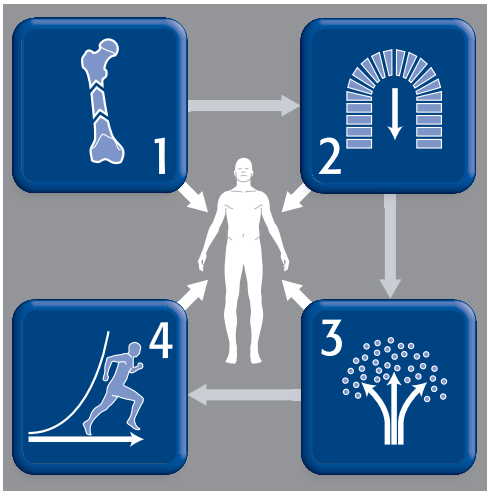
Table of Contents

AO Principles

In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation[1,2].

Anatomic reduction
Fracture reduction and fixation to restore anatomical relationships.

Early, active mobilization
Early and safe mobilization and rehabilitation of the injured part and the patient as a whole.



Stable fixation
Fracture fixation providing absolute or relative stability, as required by the patient, the injury, and the personality of the fracture.

Preservation of blood supply
Preservation of the blood supply to soft tissues and bone by gentle reduction techniques and careful handling.

[1] Müller ME, Allgöwer M, Schneider R, Willenegger H. Manual of Internal Fixation. 3rd ed. Berlin, Heidelberg, New York: Springer. 1991.
[2] Rüedi TP, Buckley RE, Moran CG. AO Principles of Fracture Management. 2nd ed. Stuttgart, New York: Thieme. 2007.

Intended Use, Indications and Contraindications, Adverse Events

Intended Use
The Femoral Neck System (FNS) is intended for temporary fixation, correction or stabilization of bones in the femoral neck.

Indications
- Femoral neck fractures (AO type 31-B)

Contraindications
- Pertrochanteric fractures (AO type 31-A1 and 31-A2)
- Intertrochanteric fractures (AO type 31-A3)
- Subtrochanteric fractures

Additionally, this system should not be used for cases where there is a high incidence of:
- Sepsis
- Malignant primary or metastatic tumors
- Material sensitivity
- Compromised vascularity

Adverse Events
As with all major surgical procedures, risks, side effects and adverse events can occur. While many possible reactions may occur, some of the most common include: Problems resulting from anesthesia and patient positioning (e.g. nausea, vomiting, dental injuries, neurological impairments, etc.), thrombosis, embolism, infection, excessive bleeding, iatrogenic neural and vascular injury, damage to soft tissues incl. swelling, abnormal scar formation, functional impairment of the musculoskeletal system, Sudeck's disease, allergy/hypersensitivity reactions and side effects associated with hardware prominence, malunion, non-union, device breakage, device loosening. Additional device specific adverse events that may occur: Pain, device migration (e.g. wire migration and penetration into the pelvic cavities), bone damage and bone fracture.

MRI Information

Torque, Displacement and Image Artifacts according to ASTM F 2213-06(2011), ASTM F 2052-14 and ASTM F 2119-07(2013)
Non-clinical testing of worst case scenario in a 3 T MRI system did not reveal any relevant torque or displacement of the construct for an experimentally measured local spatial gradient of the magnetic field of 30 T/m. The largest image artifact extended approximately 25 mm from the construct when scanned using the Gradient Echo (GE). Testing was conducted on a 3 T MRI system.

Radio-Frequency-(RF-)induced heating according to ASTM F 2182-11a
Non-clinical testing of worst case scenario lead to temperature rises of 6.6°C (1.5 T) and 9.2°C (3 T) under MRI Conditions using RF Coils (whole body averaged specific absorption rate [SAR] of 2 W/kg for 15 minutes).

Precautions: The above mentioned test relies on non-clinical testing. The actual temperature rise in the patient will depend on a variety of factors beyond the specific absorption rate (SAR) and time of RF application. Thus, it is recommended to pay particular attention to the following points:

- **It is recommended to thoroughly monitor patients undergoing MR scanning for perceived temperature and/or pain sensations.**
- **Patients with impaired thermoregulation or temperature sensation should be excluded from MR scanning procedures.**
- **Generally, it is recommended to use a MR system with low field strength in the presence of conductive implants. The employed specific absorption rate (SAR) should be reduced as far as possible.**
- **Using the ventilation system may further contribute to reduce temperature increase in the body.**

System Highlights

The Femoral Neck System (FNS) is a dedicated product for the fixation of femoral neck fractures and offers the following features:

Bolt
- Provides angular stability (fixed angle between Bolt and ARScrew)
- Dynamic design (Bolt and ARScrew slide together over a distance of 20 mm)
- Designed to reduce lateral protrusion

Antirotation-Screw (ARScrew)
- Provides rotational stability (diverging design between ARScrew and Bolt)
- Allows implant placement even in a small femoral neck

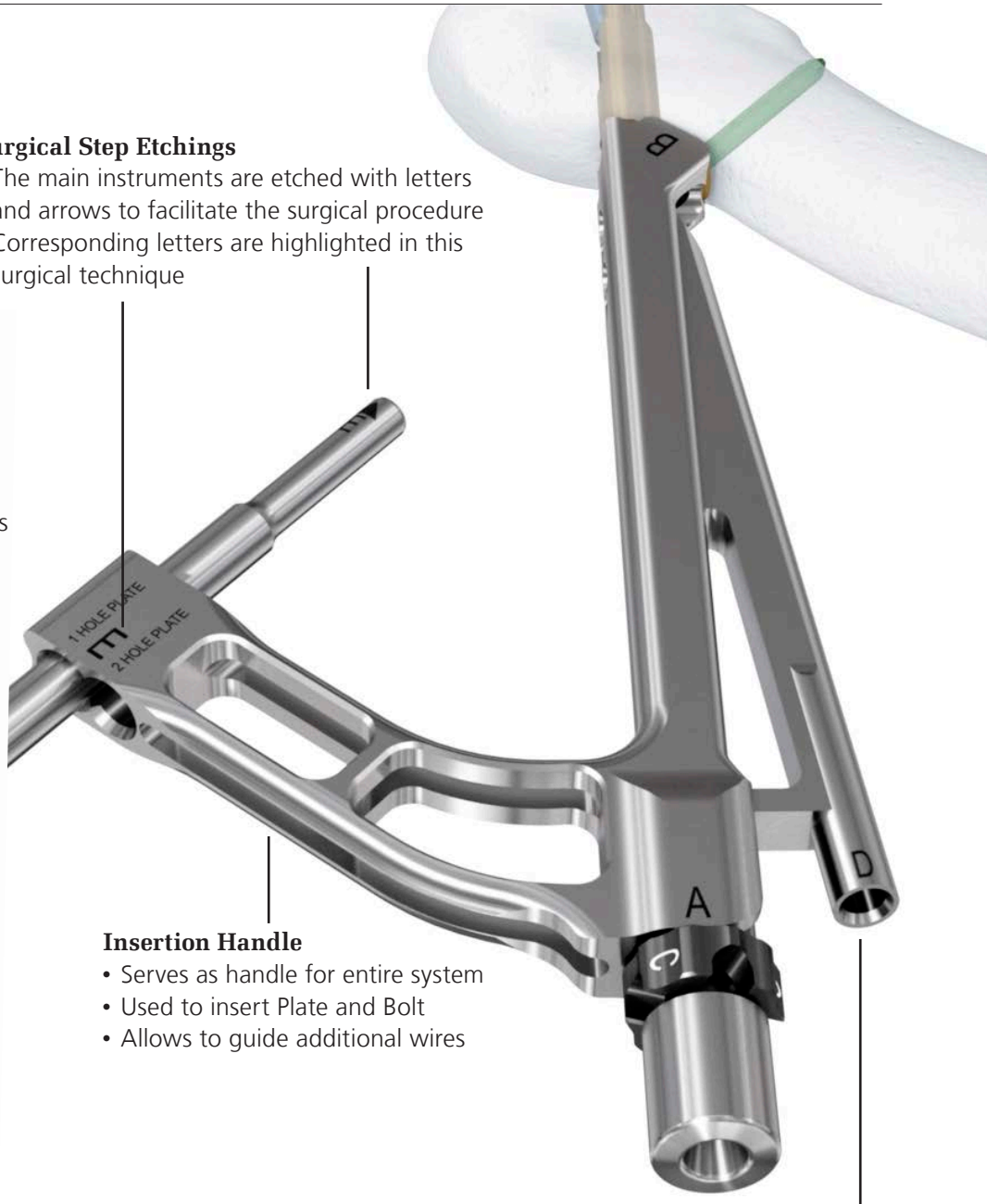
Product Offering
- Material: TAN (Ti-6Al-7Nb)
- Construct Sizes: 75 mm to 130 mm (5 mm increments)
- 1-hole plate with 130° angle (2-hole plate optionally available)

Sterile Packaging
- Implant Kit packaging
  - Plate, Bolt and ARScrew packaged in one kit
  - Reduced storage space
  - Reduced packaging waste
- Also available in single packaging

Plate (with Locking Screw)
- Provides angular stability (fixed angle between Bolt and ARScrew)
- Accommodates standard 5.0 mm Locking Screws
- Designed to provide optimal implant footprint

Surgical Step Etchings
- The main instruments are etched with letters and arrows to facilitate the surgical procedure
- Corresponding letters are highlighted in this surgical technique

Protection Sleeve
- Used to insert Locking Screws
- Helps to protect soft tissue



Insertion Handle
- Serves as handle for entire system
- Used to insert Plate and Bolt
- Allows to guide additional wires

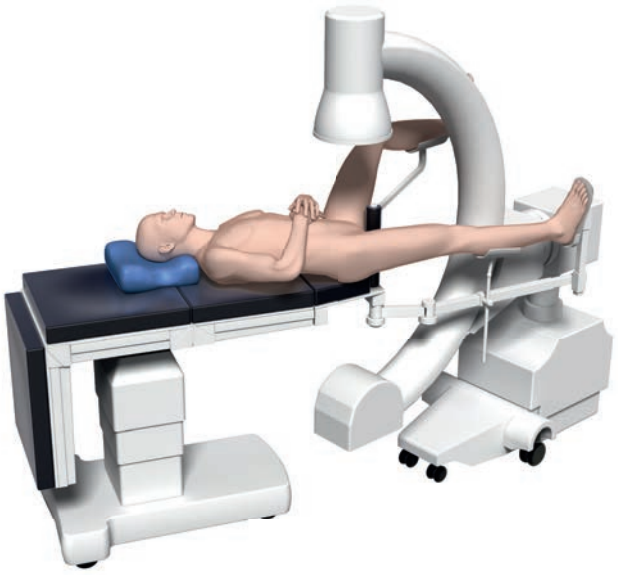
Insert for Insertion Handle
- Serves as guide to insert the ARScrew
- Allows intra-operative compression (in combination with the Multifunction Rod)

1. Position Patient

Place the patient in a supine position on the operating table.

- Position the image intensifier to enable visualization of the proximal femur in both the AP and lateral planes. (1)

1



2. Reduce Fracture

Instrument	
357.399*	Guide Wire ∅ 3.2 mm, length 400 mm
or	
356.830*	Guide Wire ∅ 3.2 mm, for PFNA Blade

Note: **Proper reduction of the fracture is crucial for good bone healing and function as well as reduction of complications.**

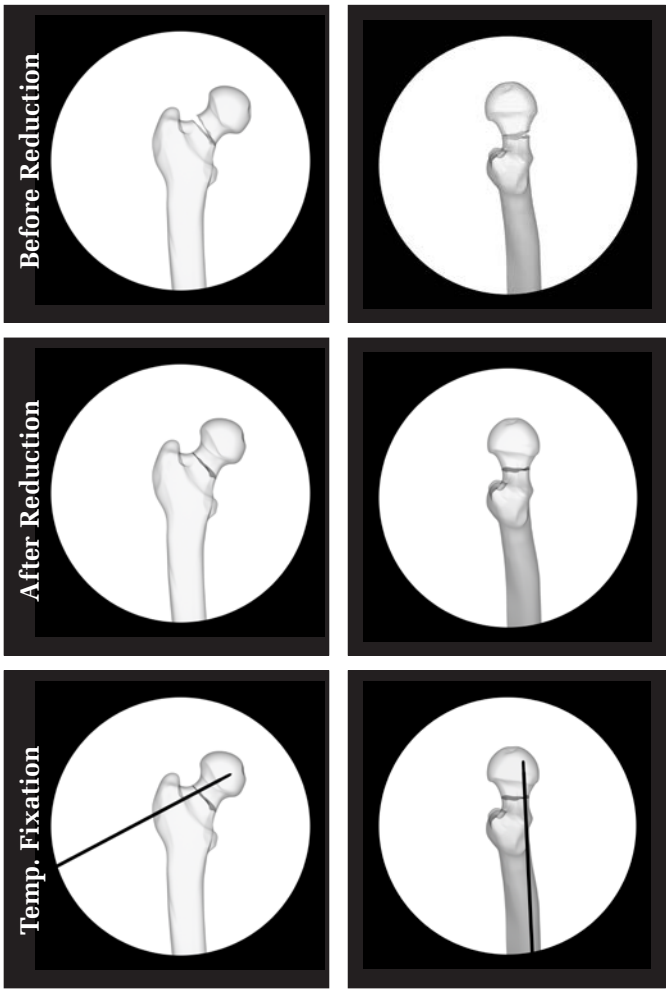
Reduce the fracture by means of gentle traction/flexion, adduction/abduction and internal rotation (about 15°, so the femoral neck is parallel to the operating table).

Check the reduction in two planes under image intensifier control. If the reduction is insufficient consider open reduction.

Insert an unused wire as antirotation wire in the superior/anterior part of the femoral neck to prevent any inadvertent rotation of the femoral head.

Notes:
- **An inappropriate position of the antirotation wire may interfere with the proper placement of the implant.**
- **The antirotation wire can be placed percutaneous or through the lateral incision (see page 7).**

Precaution: **Monitor the position of the wire during insertion and confirm the final position using the image intensifier. Over inserting guide wires could lead to damage to vital organs.**



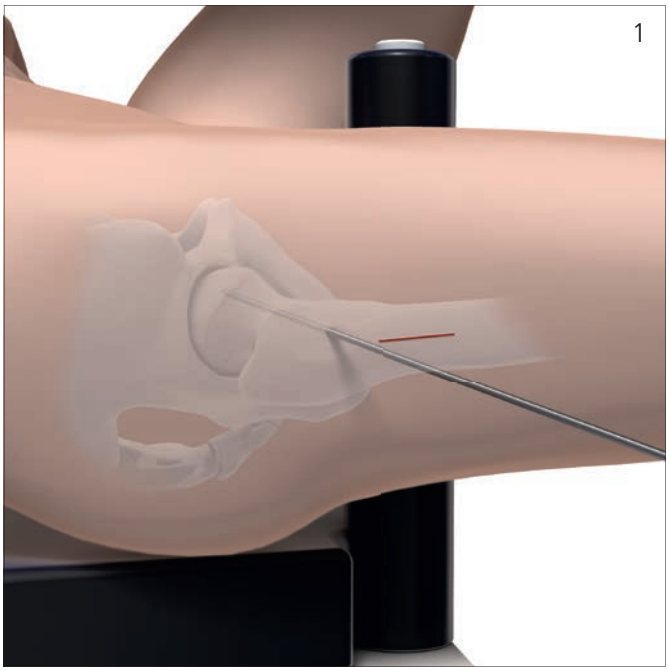
* Available non-sterile and sterile packed. Add "S" to the article number to order sterile products.

3. Approach

Make a straight lateral skin incision of approximately 6 cm in length, starting 2 to 3 cm proximal to the center of the femoral neck axis. (1)

Access and expose the lateral femoral surface accordingly for satisfactory hardware placement.

Option:
In obese patients, consider making a second incision during locking screw insertion. The second incision needs to be at the entry point of the protection sleeve, proximal to the main incision (see pages 18 and 19 for additional information on attaching the protection sleeve).


1

Implant Insertion

Irrigate and apply suction for removal of debris potentially generated during implant insertion.

1. Insert Guide Wire

Instruments	
357.399*	Guide Wire ∅ 3.2 mm, length 400 mm
or	
356.830*	Guide Wire ∅ 3.2 mm, for PFNA Blade
03.168.001	Angled Guide 130°, for Guide Wires ∅ 3.2 mm

Insert a second, unused guide wire as central guide wire, using the 130° angled guide. (1)

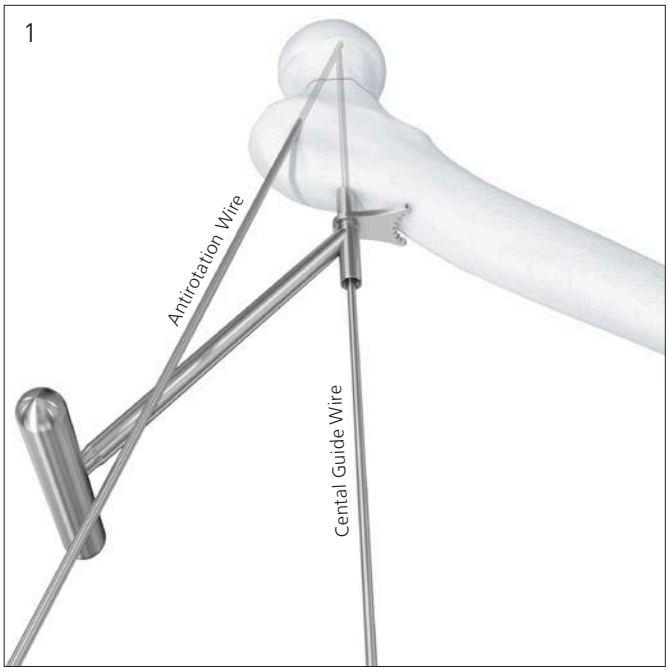
Use image intensification to place the guide wire slightly inferior to the apex of the femoral head, extending into the subchondral bone on the AP view. (2)

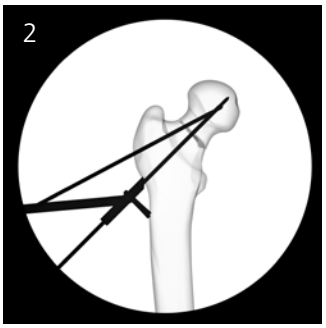
In the lateral view, the guide wire should be central in the femoral neck and head. (3)

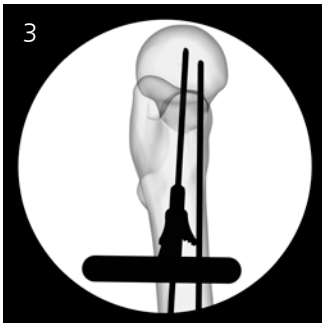
Note: **The position of the guide wire within the femoral neck and head should be chosen according to the patients anatomy before fracture. The implant plate allows a placement of about ±5° compared to the 130° angle.**

Precautions:

- **Monitor the position of the wire during insertion and confirm the final position using the image intensifier. Over inserting guide wires could lead to damage to vital organs.**
- **Replace wires if they are bent after insertion.**







* Available non-sterile and sterile packed. Add "S" to the article number to order sterile products.

2. Option: Adjust Guide Wire

Instruments	
357.399*	Guide Wire ∅ 3.2 mm, length 400 mm
or	
356.830*	Guide Wire ∅ 3.2 mm, for PFNA Blade
03.168.002	Correction Guide, for Guide Wires ∅ 3.2 mm (optional)

Use the correction guide and an unused guide wire to adjust the position of the central guide wire in reference to the initial central guide wire. The following three types of adjustments are possible:

1. Parallel Correction (5 mm)

   Insert the correction guide over the initial wire (orange) and turn the correction guide to define the new entry point (anterior/posterior or inferior/superior). Then use a new wire in the parallel hole (green) and remove the initial wire.

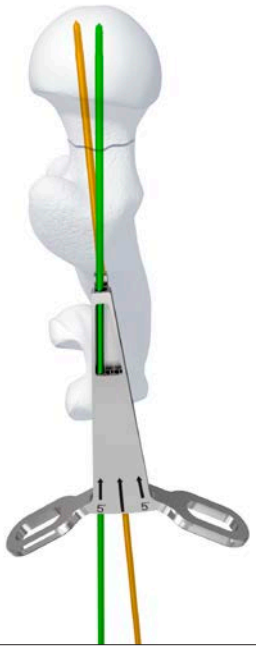
2. Angle Correction (5°) and Entry Point Correction (5 mm)

   Insert the correction guide over the initial wire (orange) and turn the correction guide to define the new entry point. Then use a new wire in either the left or the right 5°-hole (green).

1. Example:
Parallel correction with new entry point anterior.

Parallel Wire – new entry point anterior

2. Example:
Angle correction towards anterior with new entry point superior.



Wire towards anterior – new entry point superior

* Available non-sterile and sterile packed. Add "S" to the article number to order sterile products.

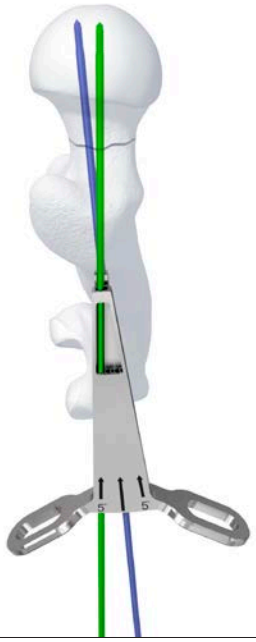
3. Angle Correction (5°) and Same Entry Point

Insert the correction guide over the initial wire (orange hole in side-view), turn the correction guide to choose the new temporary entry point, insert a new wire in the parallel hole (blue) and remove the initial wire. Then use a new wire in either the left or the right 5°-hole (green) to correct the angle.

Precautions:

- **Monitor the position of the wire during insertion and confirm the final position using the image intensifier. Over inserting guide wires could lead to damage to vital organs.**
- **Replace wires if they are bent after insertion.**

3. Example:
Angle correction towards anterior with same entry point. Initial wire (orange) only shown in side-view).



Wire towards anterior – same entry point

3. Determine Length

Instrument	
03.168.003	Direct Measuring Device, for Guide Wires ∅ 3.2 mm

Slide the direct measuring device over the central guide wire. (1)

Read the depth of the guide wire on the direct measuring device. (2)

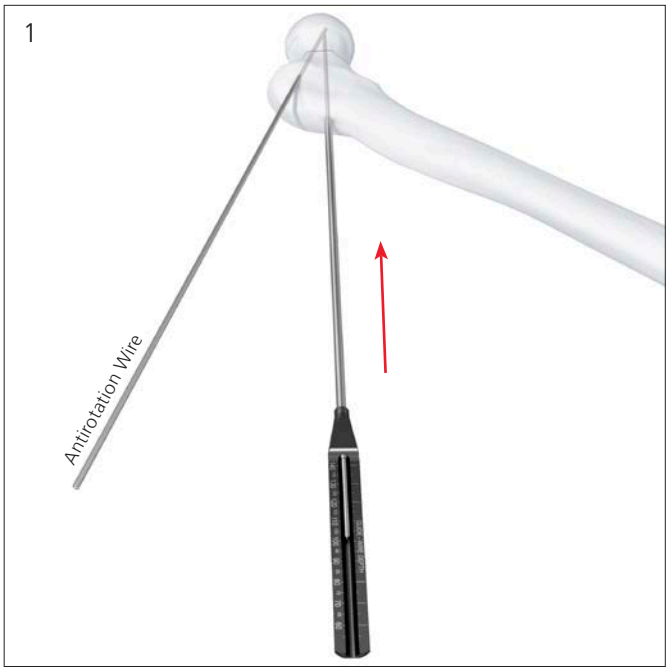
As the guide wire is inserted into the subchondral bone (in the AP view), remove 5 mm from the value seen on the direct measuring device and choose the next shorter construct size.

The available construct sizes are:

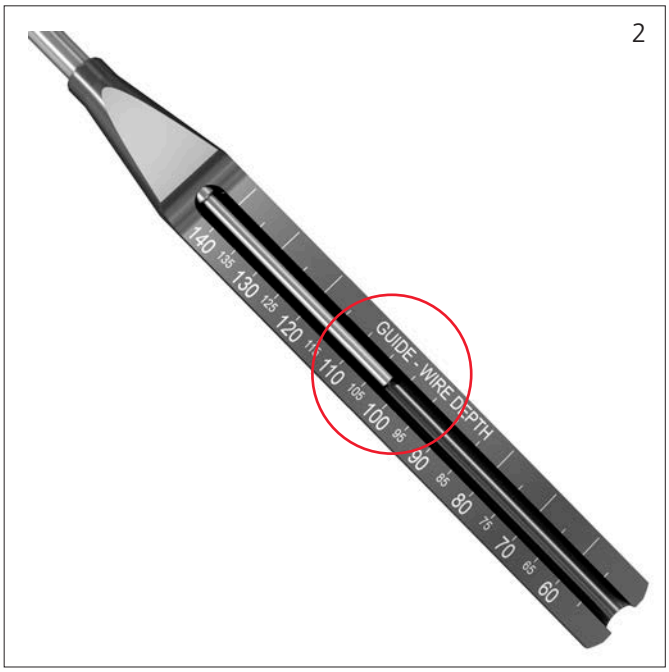
75 mm	95 mm	115 mm
80 mm	100 mm	120 mm
85 mm	105 mm	125 mm
90 mm	110 mm	130 mm

Example: If you read 102 mm on the direct measuring device, the construct size of the implant should be 95 mm (102 – 5 = 97 → choose 95 mm).

1



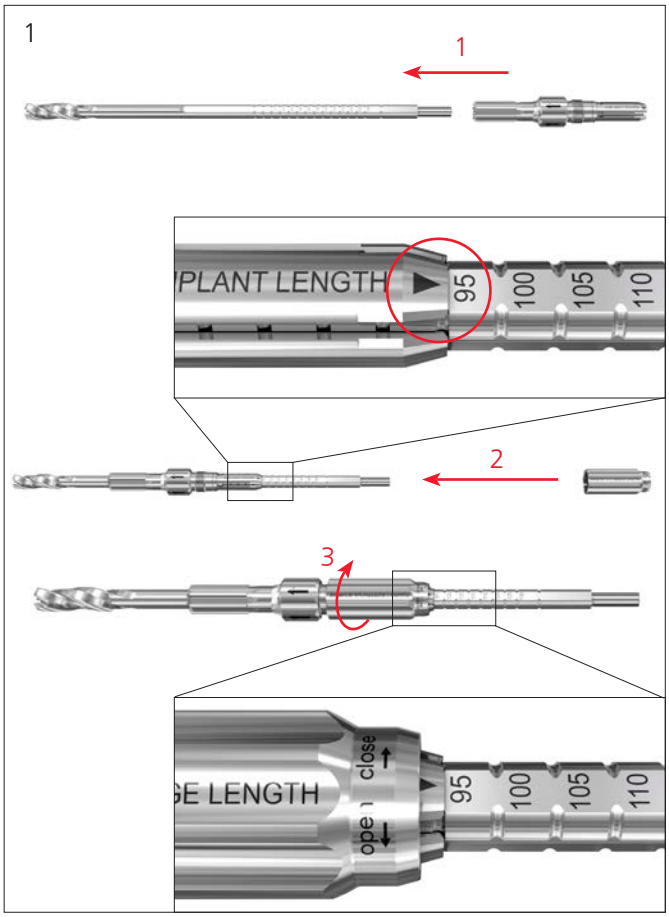
2



4. Ream for Insertion of Plate and Bolt

Instrument	
03.168.004	Reamer, complete
Consisting of:	
03.168.005	Drill Bit ∅ 10.2 mm, cannulated, length 251 mm
03.168.006	Reamer ∅ 12.5 mm
03.168.007	Nut, for Reamer

Assemble the reamer by sliding the reamer-component over the drill bit until it clicks into place at the selected construct size (95 mm in the example before). Secure the reamer by tightening the nut. (1)



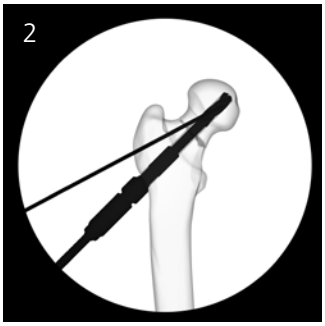
Ream down until the reamer stops on the bone. (2)

Notes:

- **It is recommended that the femoral head is temporarily fixated with an antirotation wire prior to reaming.**
- **Control guide wire migration and check reaming depth during reaming using the image intensifier.**
- **When reaming in dense bone, use of continuous irrigation is recommended.**
- **Avoid excessive reaming force during reaming.**

Remove the reamer.

It is important to reinsert the guide wire if it is removed accidentally. To reinsert the wire push the reamer back into the reamed hole (without the use of a power tool) and use the cannulation to reinsert the guide wire into the original position.



5. Assemble Implant and Insertion Instruments

Instruments	
03.168.008	Insertion Handle
03.168.009	Insert, for Insertion Handle

A Slide the insert into the insertion handle, without tightening the black screw. (1)

Fully insert the bolt with the selected construct size (95 mm in the example before) into the plate. (2)

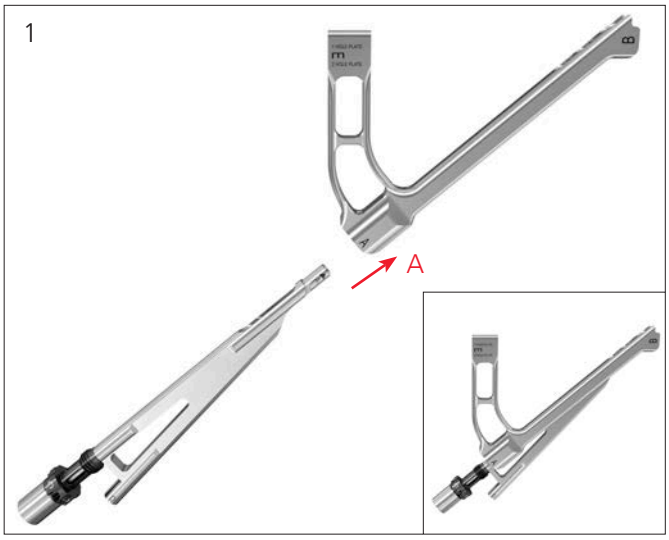
B Mount the implant onto the insertion handle. (3)

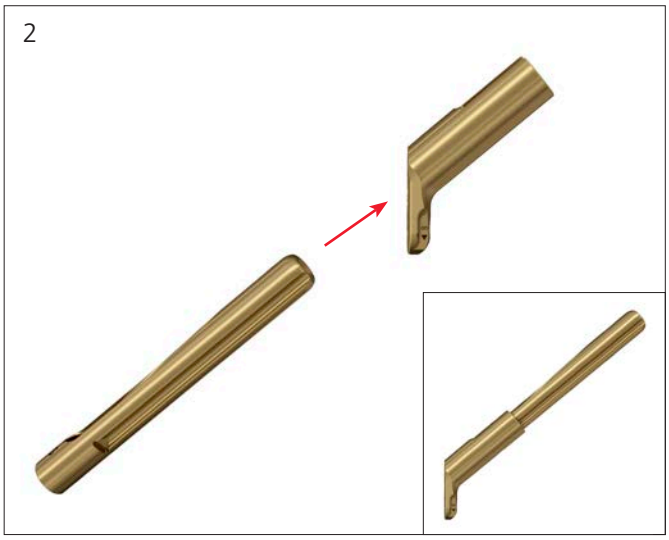
Note: **Ensure that the implant is correctly fixed to the insertion instrument and that the bolt is in the completely extended position.**

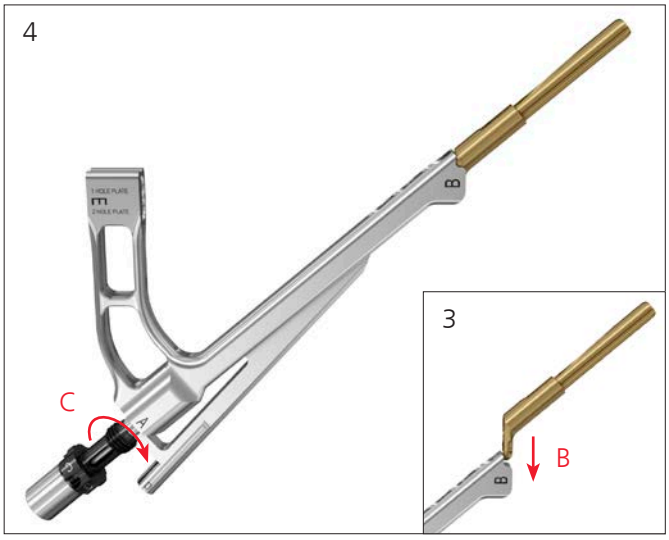
C Manually tighten the black screw of the insert to attach the implant. (4)

Precaution: **Hand-tightening the black screw is sufficient. Using additional tools might cause overtightening.**

Option: A longer side plate with two locking holes (2-hole plate) is available as option.







6. Insert Implant

Instrument	
03.168.015	Cylinder, for Insertion Instruments (optional)

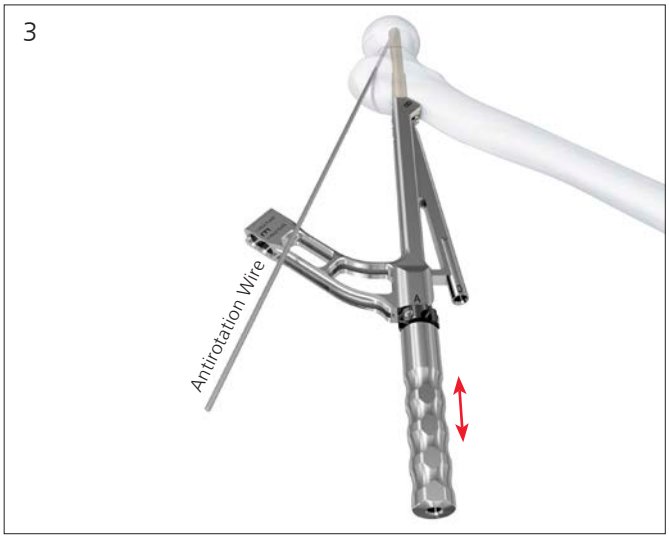
Insert the implant over the central guide wire into the pre-reamed hole. (1)

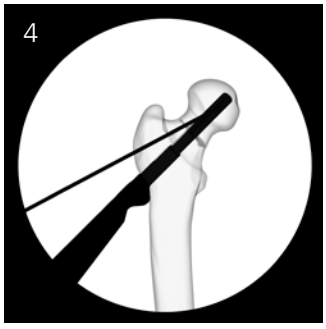
Precaution: **When not using the cylinder, the guide wire will become visible on the outer side of the insert. Ensure not to move the guide wire. (2)**

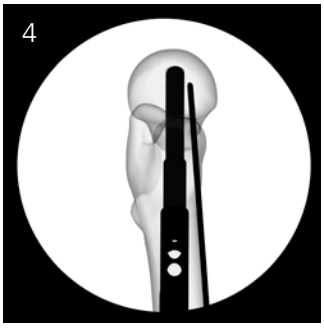
Option:
The cylinder can be used to manually tap the plate onto the bone. (3) If additional tapping is required, use a standard surgical hammer to slightly tap onto the cylinder.

Use image intensification to confirm the insertion depth and ensure that the plate is inserted down to the bone as well as aligned with the axis of the femoral shaft. (4)

Notes:
- **It is recommended that the femoral head is temporarily fixated with an antirotation wire prior to implant insertion.**
- **Avoid excessive insertion force.**
- **After insertion, ensure that the instruments are still correctly fixed to the implant.**





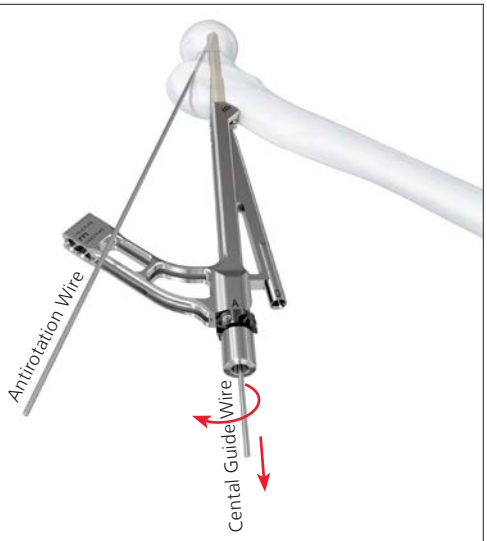


7. Remove Guide Wire

Remove the central guide wire. (1)

Keep the antirotation wire to prevent loss of reduction and rotation of the head.

1



Antirotation-Screw and Locking Screw Insertion

Irrigate and apply suction for removal of debris potentially generated during antirotation-screw and locking screw insertion.

1. Drill for Antirotation-Screw

Instruments	
03.168.011	Drill Bit ∅ 4.3 mm, length 413 mm
03.168.012	Fixation Sleeve, length 60 mm

Pass the fixation sleeve over the back end of the drill bit and check the fixation sleeve for wear per the instructions on page 32. (1) Adjust the setting to the chosen construct size (95 mm in the example). (2)

Notes:

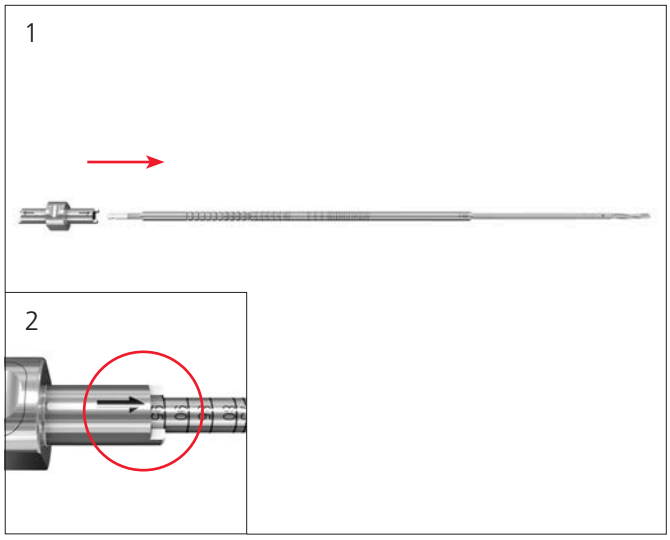
- **The length of the bolt and the antirotation-screw are pre-defined based on the selected construct size.**
- **Ensure that the central guide wire is removed before drilling.**
- **Confirm that the insertion handle and plate are aligned with the femoral shaft before drilling for the antirotation-screw. (3)**

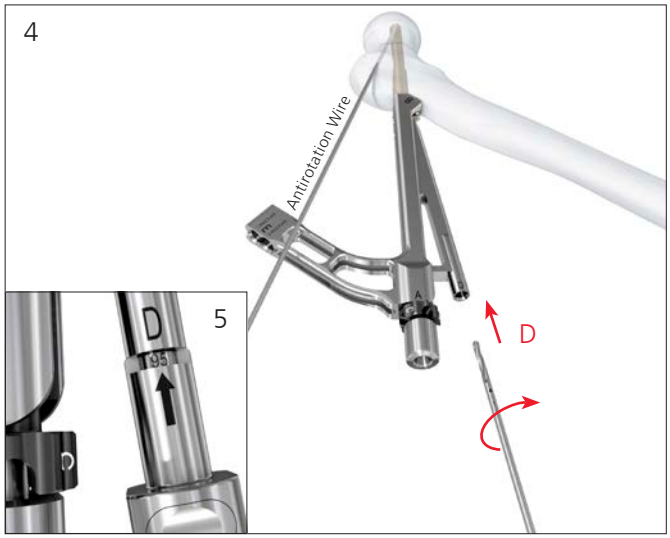
D Use the guide of the insert to drill the hole for the antirotation-screw. (4)

Drill until the fixation sleeve stops on the guide of the insert. (5)

Precaution: **Monitor depth during drilling using the image intensifier. Drilling too deep could lead to bone damage.**

Remove the drill bit.





2. Insert Antirotation-Screw

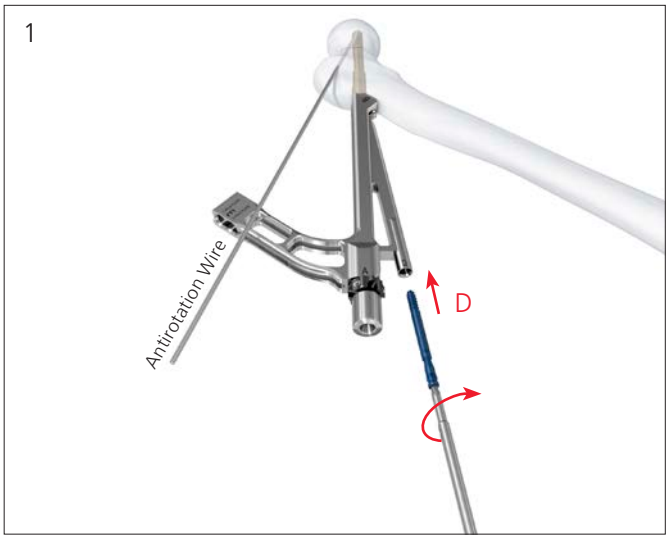
Instruments	
03.168.014	Screwdriver Shaft Stardrive, T25, length 241 mm
511.774	Torque Limiter, 4 Nm, for AO/ASIF Quick Coupling for Reamers
03.140.027	Handle, large, cannulated, with Quick Coupling, Hex 12 mm

Note: **Confirm that the insertion handle and plate are aligned with the femoral shaft.**

D Insert the antirotation-screw with the selected construct size (95 mm in the example). (1)

Insertion as well as final tightening should be done slowly and by hand using the screwdriver shaft, together with the 4 Nm Torque Limiter and the appropriate handle. (2) If dense bone is preventing antirotation-screw insertion, then carefully use the handle without Torque Limiter for insertion.

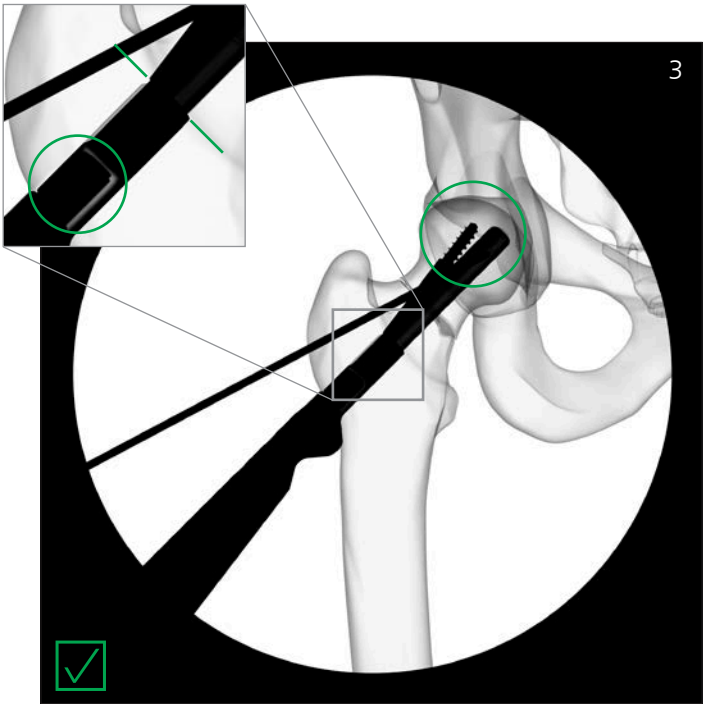
1

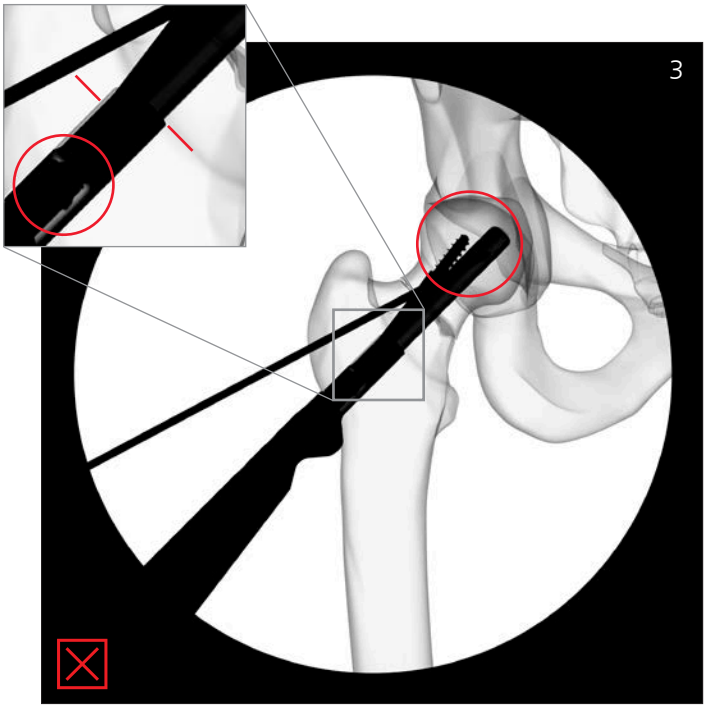


2

Precautions:

- **Monitor antirotation-screw insertion and confirm screw position using the image intensifier prior to final tightening.**
- **Confirm that the femoral head is temporarily fixated with an antirotation wire and hold the position of the handle during final tightening to prevent any inadvertent rotation.**
- **After final tightening, use the image intensifier to check that the antirotation-screw is fully inserted. (3) If not, then loosen and reinsert the antirotation-screw. Use the 4Nm torque limiter and the appropriate handle for final tightening.**





3. Attach Protection Sleeve for Locking Screw Insertion

Instrument	
03.168.013	Protection Sleeve, for Insertion Instruments

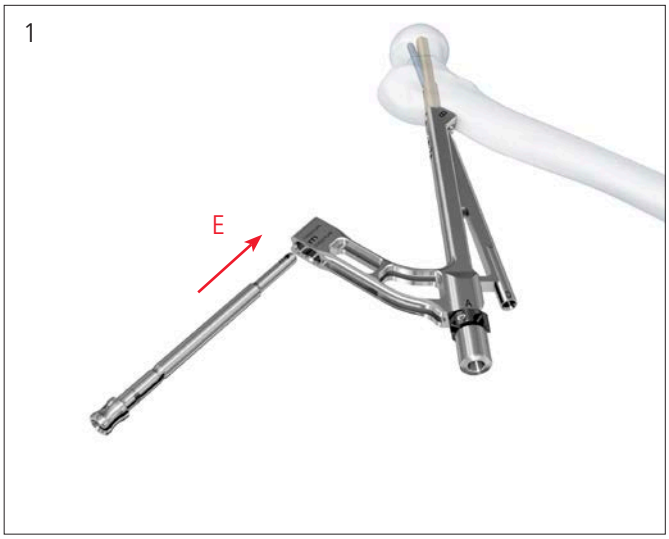
Remove any antirotation wires.

E Attach the protection sleeve to the insertion handle. (1)

Notes:

- **In obese patients, the use of a second incision to insert the protection sleeve should be considered.**
- **Check that the protection sleeve is inserted in the correct position (1-hole plate or 2-hole plate) of the insertion handle.**
- **Insert the proximal locking screw first if using a 2-hole plate.**

Check that the protection sleeve is fully inserted. (2)



4. Drill for Locking Screw

Instruments	
03.168.011	Drill Bit ∅ 4.3 mm, length 413 mm
03.168.017	Depth Gauge, measuring range up to 100 mm (optional)

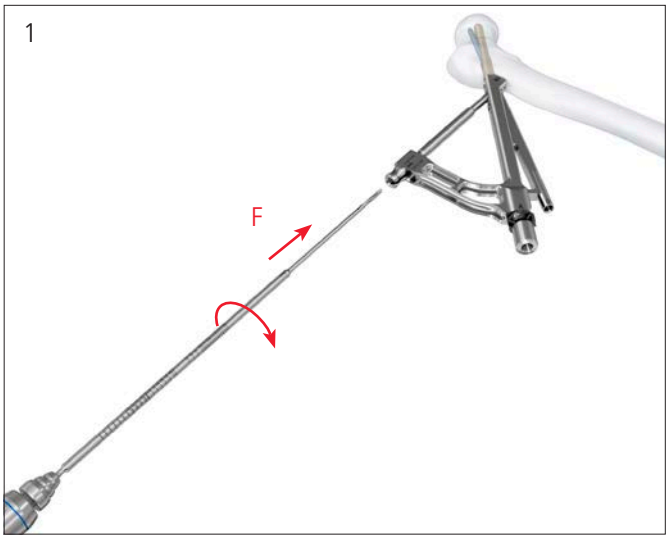
Check that the fixation sleeve is removed from the drill bit.

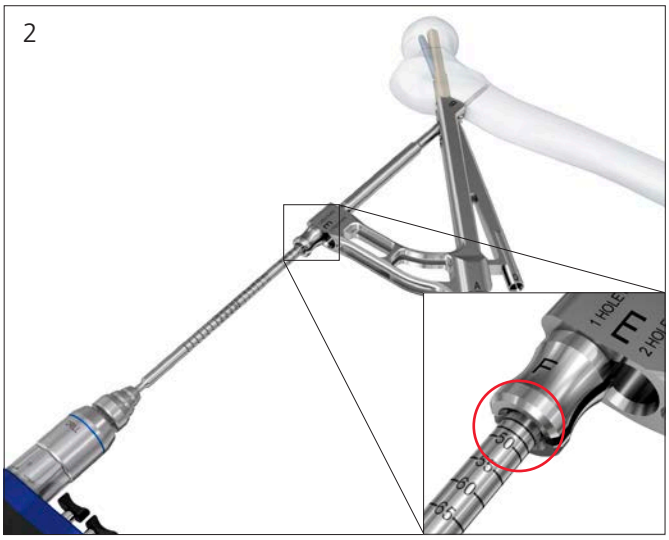
Note: **Confirm that the insertion handle and plate are still aligned with the femoral shaft.**

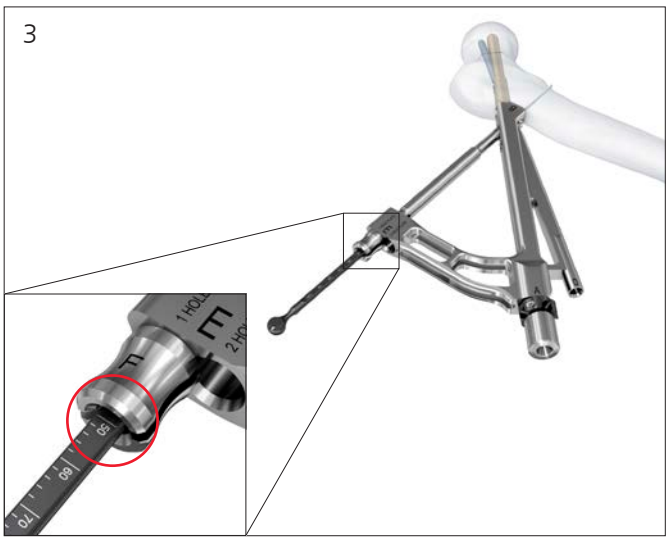
F Drill the hole for the bi-cortical locking screw through the protection sleeve. (1)

Read the screw length directly off the etching on the drill bit. (2)

Option: Use the depth gauge through the protection sleeve to determine the depth of the drilled hole. The screw length should be chosen at least 4 mm longer than the determined depth of the hole. (3)







5. Insert Locking Screw

Instruments	
03.168.014	Screwdriver Shaft Stardrive, T25, length 241 mm
or	
03.168.016	Screwdriver Shaft hexagonal, 3.5 mm, length 241 mm
511.774	Torque Limiter, 4 Nm, for AO/ASIF Quick Coupling for Reamers
03.140.027	Handle, large, cannulated, with Quick Coupling, Hex 12 mm

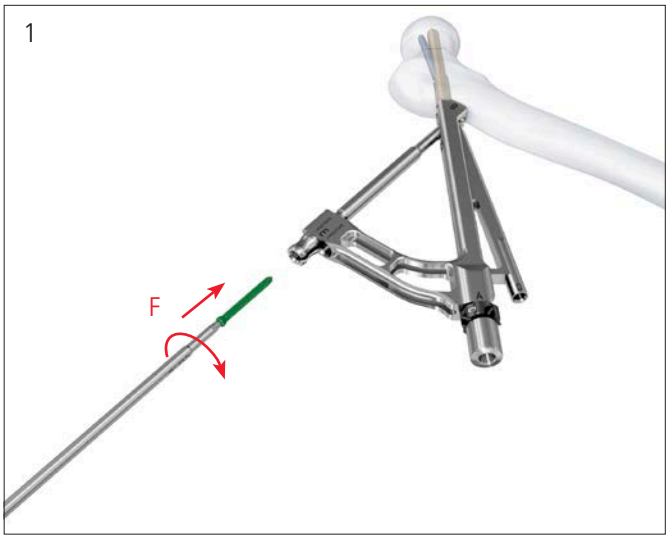
Note: **Confirm that the insertion handle and plate are still aligned with the femoral shaft.**

F Insert the locking screw with the determined length, as read from the drill bit or depth gauge. (1)

The locking screw may be inserted using power equipment. Final tightening must be done slowly and by hand using the screwdriver shaft, together with the 4 Nm Torque Limiter and the appropriate handle. (2)

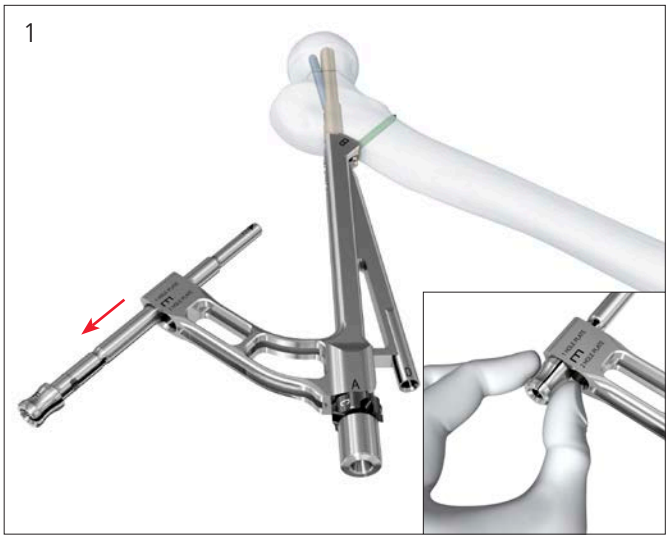
Note: **Monitor locking screw insertion and confirm screw position as well as length using the image intensifier prior to final tightening.**

Option: If using a 2-hole plate, repeat steps 3 to 5 to insert the distal screw. (3)



6. Remove Protection Sleeve

Remove the protection sleeve by pressing together the head of the sleeve while pulling. (1)



Option: Intra-Operative Compression

Inter-fragmentary compression may be applied intra-operatively. The locking screw as well as the antirotation-screw need to be inserted prior to applying compression.

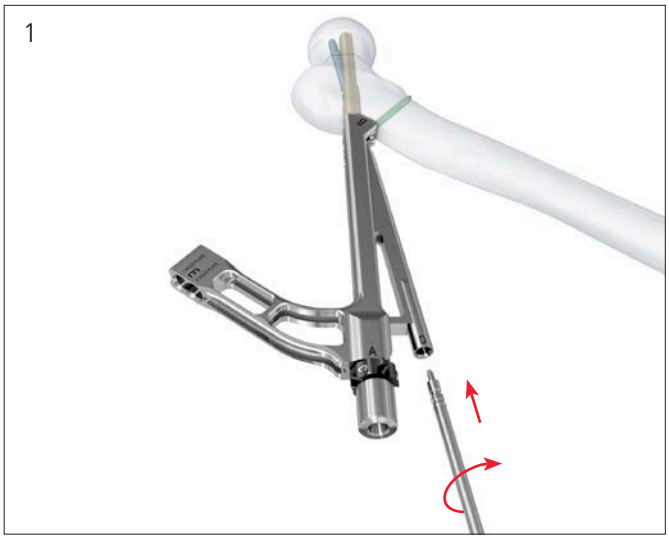
1. Attach Multifunction Rod for Compression

Instrument	
03.168.010	Multifunction Rod for Insertion Instruments (optional)

Insert the multifunction rod through the guide of the antirotation-screw. (1)

Hand-tighten the rod by turning it clockwise until the rod is fully inserted. (2)

1



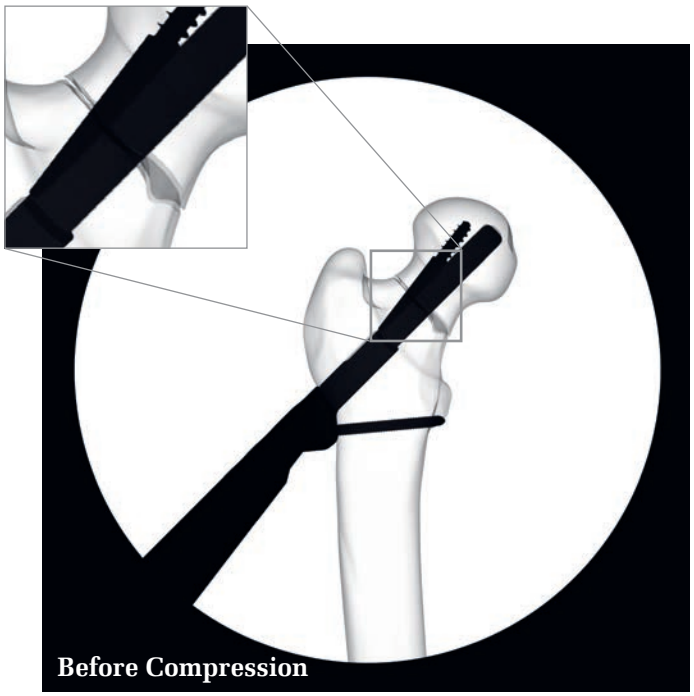
2

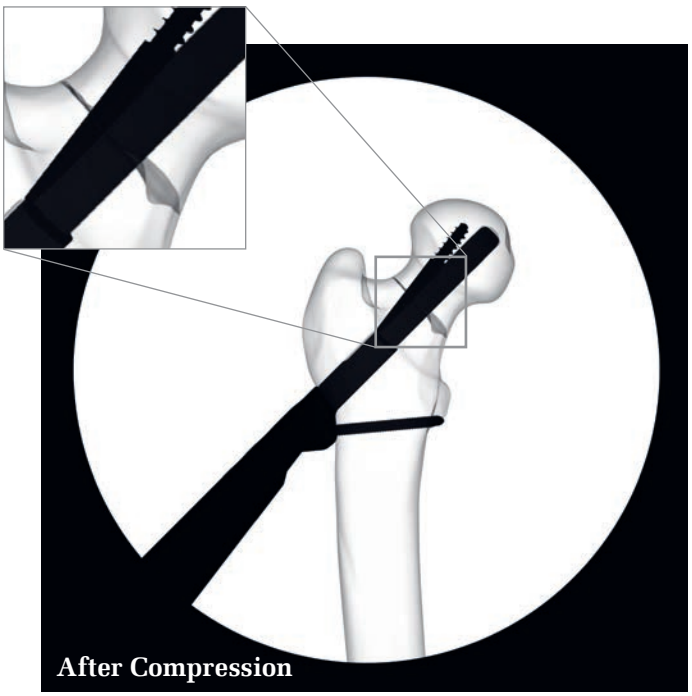
2. Apply Compression

Note:
- **If applicable, consider to loosen traction before applying compression.**
- **Monitor the implant position during compression using the image intensifier.**

Apply inter-fragmentary compression by turning the screw of the insert counter-clockwise. (1)

Precaution: **Applying compression by hand is sufficient. Using additional tools for compression might cause excessive forces.**





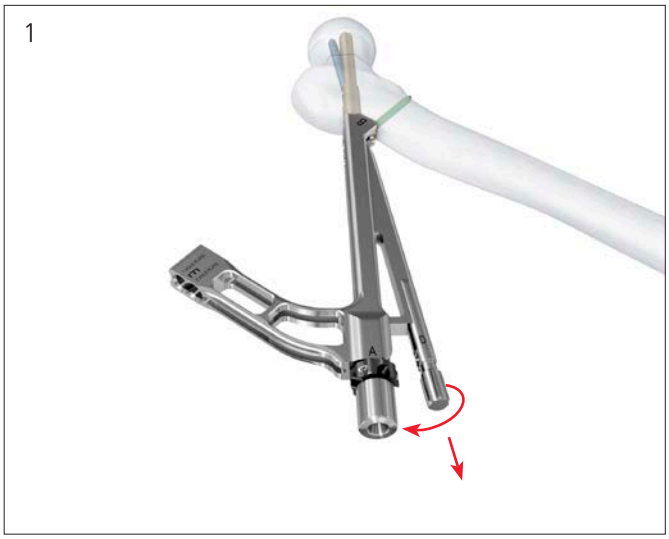
3. Remove Multifunction Rod

Remove the multifunction rod by turning it counter-clockwise. (1)

Note: **If loosening by hand is not possible, then use another instrument (e.g. a screwdriver shaft) through the hole in the multifunction rod to untighten it.**

- Use image intensification to confirm that the anti-rotation-screw remains locked in the implant.

1



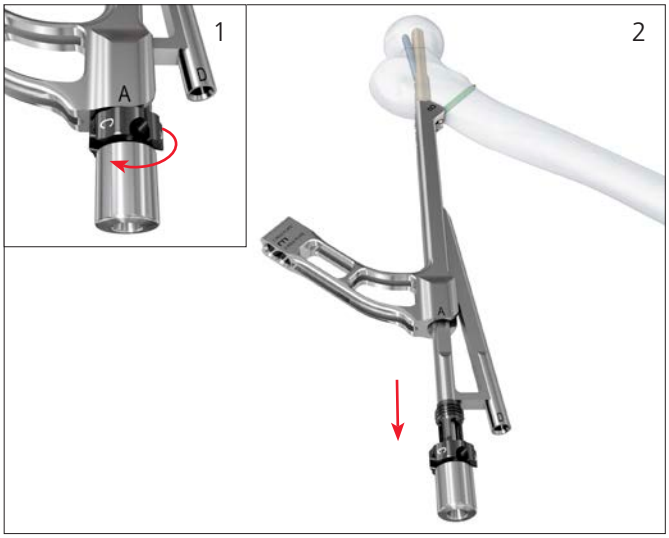
Instrument Disassembly and Final Check

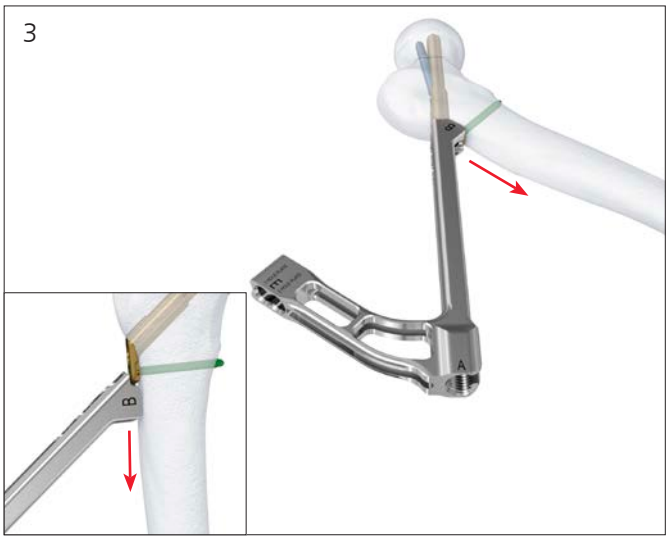
1. Remove Insertion Instruments

Unscrew (counter-clockwise) the insert from the insertion handle by completely loosening the screw of the insert. (1)

Remove the insert from the insertion handle. (2)

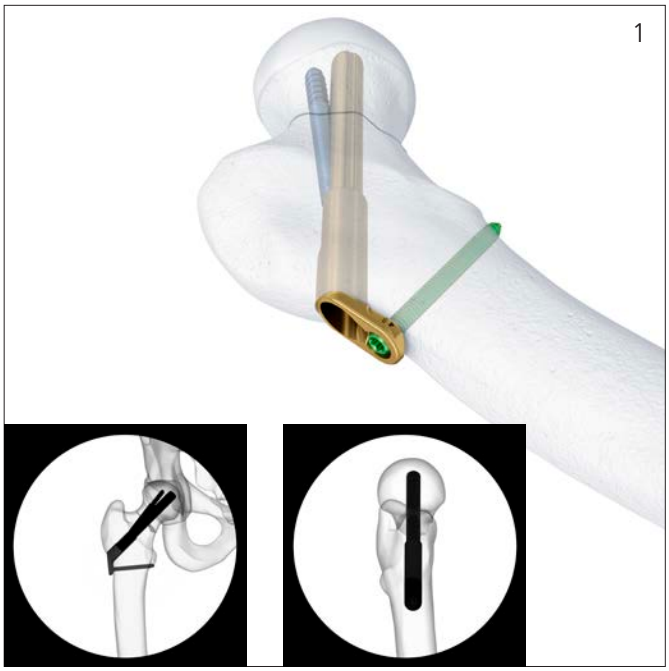
Remove the insertion handle by sliding it off the plate in a distal direction. (3)

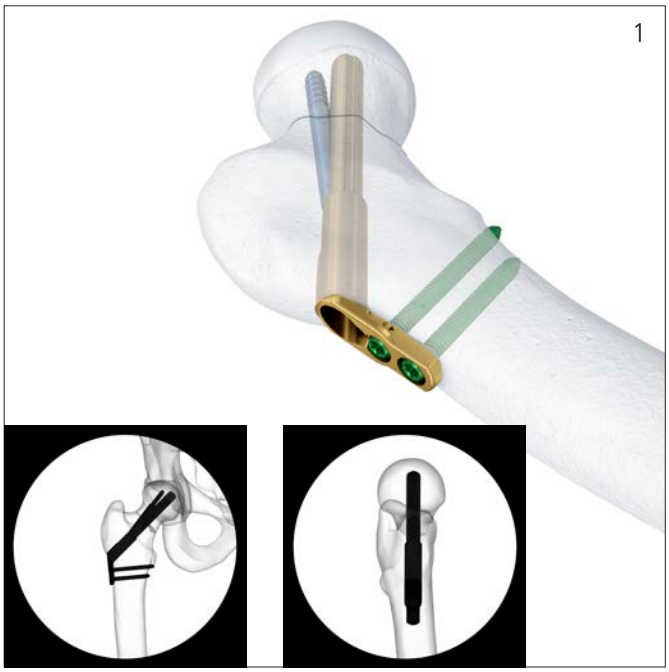




2. Final Check

Before closing the wound, confirm the implant size and positioning under image intensifier control. (1)





Option: Implant Removal

Irrigate and apply suction for removal of debris potentially generated during implant removal.

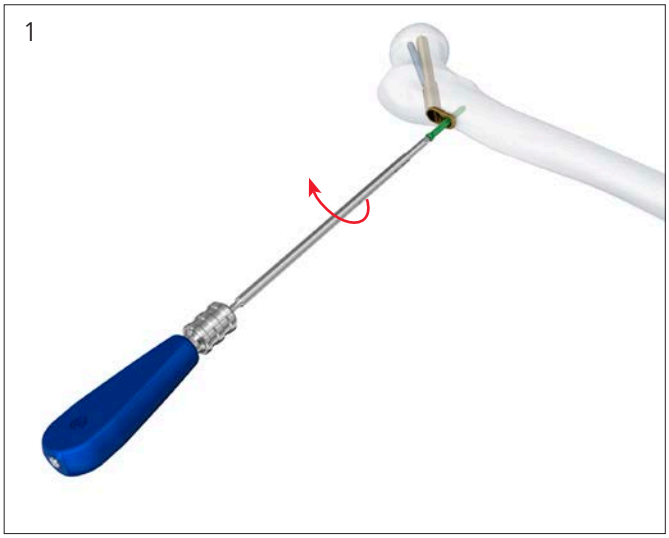
1. Remove Locking Screw

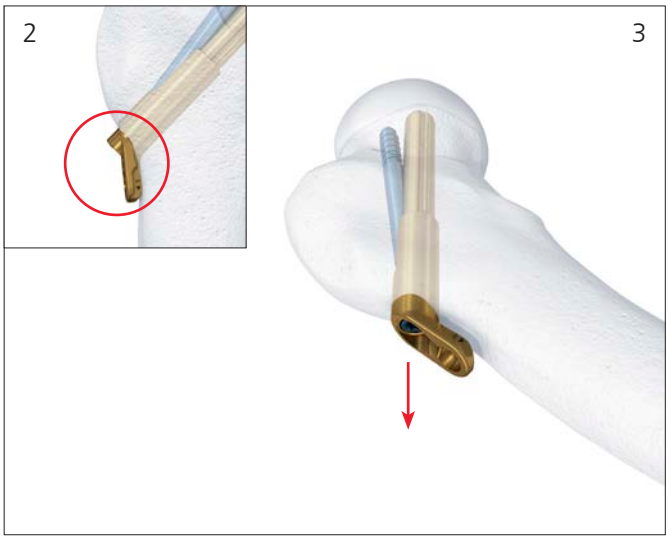
Instruments	
03.168.014	Screwdriver Shaft Stardrive, T25, length 241 mm
or	
03.168.016	Screwdriver Shaft hexagonal, 3.5 mm, length 241 mm
03.010.516	Handle, large, with Quick Coupling

Remove the locking screw by hand using the screwdriver shaft together with the appropriate handle and without torque limiter. (1)

If the screw cannot be removed with the screwdriver, consult the separate publication "Screw Extraction Set" (DSEM/TRM/0614/0104).

Note: **If the implant is fully telescoped, resulting in the bolt being more lateral than the plate (2), pull on the plate (e.g. with surgical pliers) to extend it from the bolt (to about 5 mm) before conducting the steps on the following pages. (3)**





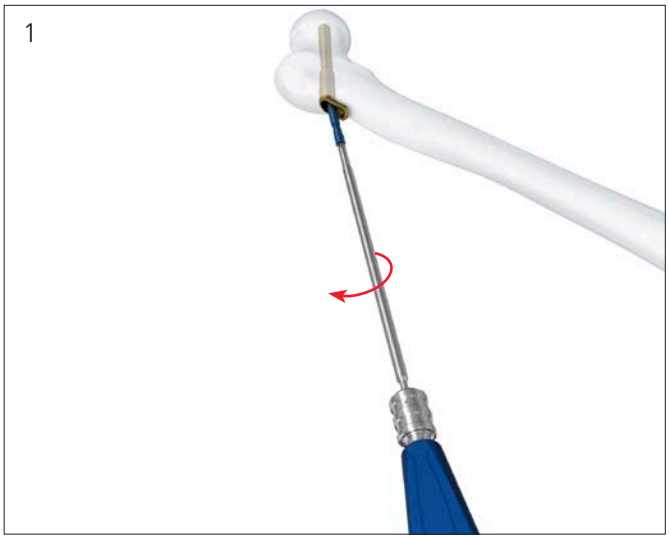
2. Remove Antirotation-Screw

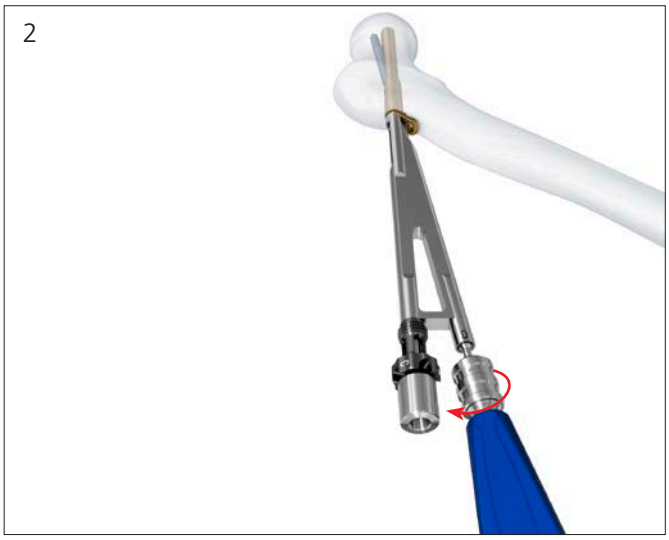
Instruments	
03.168.014	Screwdriver Shaft Stardrive, T25, length 241 mm
03.010.516	Handle, large, with Quick Coupling
03.168.010	Multifunction Rod for Insertion Instruments (optional)

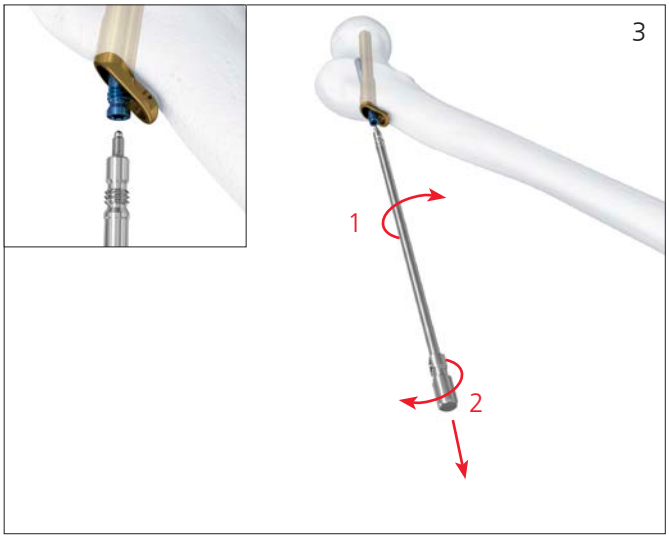
Remove the antirotation-screw by hand using the screwdriver shaft together with the appropriate handle and without torque limiter. (1)

Options:
- If it is difficult to find the recess of the antirotation-screw, then use the Insert (03.168.009) as a guide within the plate. (2)
- If the antirotation-screw gets detached from the screwdriver, then use the multifunction rod and turn it clockwise to catch the antirotation-screw. Pull on the multifunction rod and turn anti-clockwise to fully remove the antirotation-screw. (3)

If the antirotation-screw cannot be removed with the screwdriver or the multifunction rod, consult the separate publication "Screw Extraction Set" (DSEM/TRM/0614/0104).







3. Remove Plate and Bolt

Instruments	
03.168.010	Multifunction Rod for Insertion Instruments
03.168.015	Cylinder, for Insertion Instruments

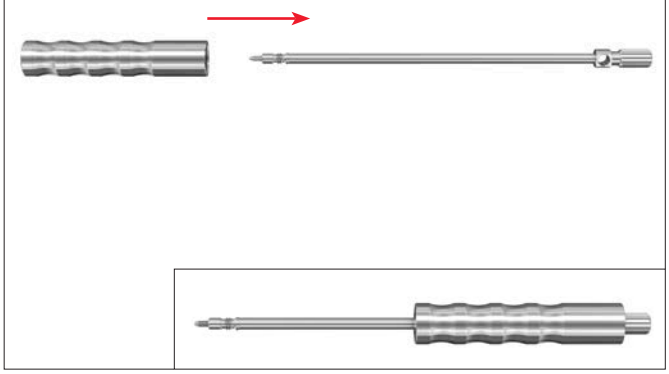
Slide the cylinder over the multifunction rod. (1)

Attach the multifunction rod by turning it clockwise. Use the direction of the previously removed antirotation-screw. (2)

Tap outward with the cylinder to remove the plate and bolt simultaneously. (3)

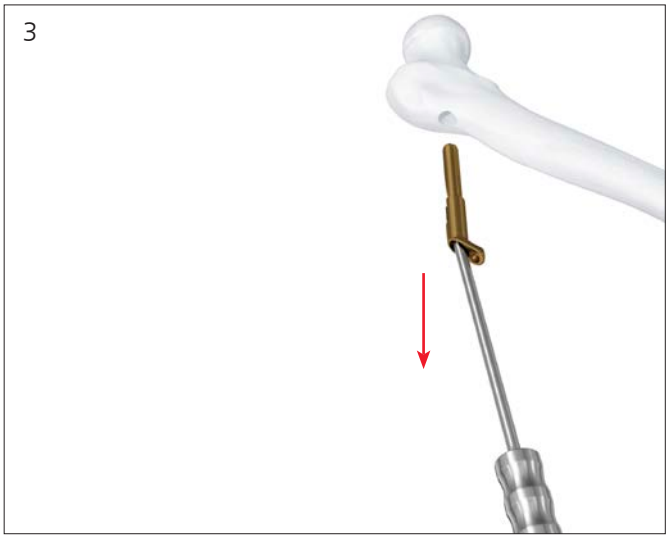
Note: **Avoid excessive forces during removal.**

1



2

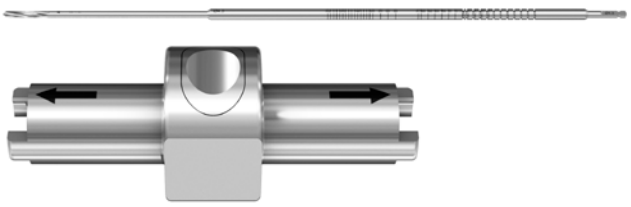
3



Checking Fixation Sleeve Wear

1. Perform Fixation Sleeve Wear Test

Instruments	
03.168.011	Drill Bit ∅ 4.3 mm, length 413 mm
03.168.012	Fixation Sleeve, length 60 mm



If excessive wear occurs, the fixation sleeve can slip, resulting in incorrect drilling depth.

Before use:
- Slide fixation sleeve onto the drill bit
- Press on the fixation sleeve with the thumb without pressing the button. If the fixation sleeve moves under pressure, replace it
- Do the same test in the opposite direction. If the fixation sleeve moves, replace it

Precautions:
- **Drill only under periodic image intensifier control.**
- **While drilling, do not force.**
- **Replace fixation sleeves that do not pass the described wear test.**

Implants in Kit Packaging

Implant Kit

04.168.075S	Implant Kit, for Femoral Neck System, Construct Length 75 mm, Titanium Alloy (TAN), sterile
04.168.080S	Implant Kit, for Femoral Neck System, Construct Length 80 mm, Titanium Alloy (TAN), sterile
04.168.085S	Implant Kit, for Femoral Neck System, Construct Length 85 mm, Titanium Alloy (TAN), sterile
04.168.090S	Implant Kit, for Femoral Neck System, Construct Length 90 mm, Titanium Alloy (TAN), sterile
04.168.095S	Implant Kit, for Femoral Neck System, Construct Length 95 mm, Titanium Alloy (TAN), sterile
04.168.100S	Implant Kit, for Femoral Neck System, Construct Length 100 mm, Titanium Alloy (TAN), sterile
04.168.105S	Implant Kit, for Femoral Neck System, Construct Length 105 mm, Titanium Alloy (TAN), sterile
04.168.110S	Implant Kit, for Femoral Neck System, Construct Length 110 mm, Titanium Alloy (TAN), sterile
04.168.115S	Implant Kit, for Femoral Neck System, Construct Length 115 mm, Titanium Alloy (TAN), sterile
04.168.120S	Implant Kit, for Femoral Neck System, Construct Length 120 mm, Titanium Alloy (TAN), sterile
04.168.125S	Implant Kit, for Femoral Neck System, Construct Length 125 mm, Titanium Alloy (TAN), sterile
04.168.130S	Implant Kit, for Femoral Neck System, Construct Length 130 mm, Titanium Alloy (TAN), sterile

Implants in Single Packaging

Plate

04.168.000S	Plate, 1 hole, for Femoral Neck System, Titanium Alloy (TAN), sterile
04.268.000S	Plate, 2 holes, for Femoral Neck System, Titanium Alloy (TAN), sterile

Bolt

04.168.275S	Bolt, for Femoral Neck System, for Construct Length 75 mm, Titanium Alloy (TAN), sterile
04.168.280S	Bolt, for Femoral Neck System, for Construct Length 80 mm, Titanium Alloy (TAN), sterile
04.168.285S	Bolt, for Femoral Neck System, for Construct Length 85 mm, Titanium Alloy (TAN), sterile
04.168.290S	Bolt, for Femoral Neck System, for Construct Length 90 mm, Titanium Alloy (TAN), sterile
04.168.295S	Bolt, for Femoral Neck System, for Construct Length 95 mm, Titanium Alloy (TAN), sterile
04.168.300S	Bolt, for Femoral Neck System, for Construct Length 100 mm, Titanium Alloy (TAN), sterile
04.168.305S	Bolt, for Femoral Neck System, for Construct Length 105 mm, Titanium Alloy (TAN), sterile
04.168.310S	Bolt, for Femoral Neck System, for Construct Length 110 mm, Titanium Alloy (TAN), sterile
04.168.315S	Bolt, for Femoral Neck System, for Construct Length 115 mm, Titanium Alloy (TAN), sterile
04.168.320S	Bolt, for Femoral Neck System, for Construct Length 120 mm, Titanium Alloy (TAN), sterile
04.168.325S	Bolt, for Femoral Neck System, for Construct Length 125 mm, Titanium Alloy (TAN), sterile
04.168.330S	Bolt, for Femoral Neck System, for Construct Length 130 mm, Titanium Alloy (TAN), sterile

Antirotation-Screw

04.168.475S	Antirotation Screw, for Femoral Neck System, for Construct Length 75 mm, Titanium Alloy (TAN), sterile
04.168.480S	Antirotation Screw, for Femoral Neck System, for Construct Length 80 mm, Titanium Alloy (TAN), sterile
04.168.485S	Antirotation Screw, for Femoral Neck System, for Construct Length 85 mm, Titanium Alloy (TAN), sterile
04.168.490S	Antirotation Screw, for Femoral Neck System, for Construct Length 90 mm, Titanium Alloy (TAN), sterile
04.168.495S	Antirotation Screw, for Femoral Neck System, for Construct Length 95 mm, Titanium Alloy (TAN), sterile
04.168.500S	Antirotation Screw, for Femoral Neck System, for Construct Length 100 mm, Titanium Alloy (TAN), sterile
04.168.505S	Antirotation Screw, for Femoral Neck System, for Construct Length 105 mm, Titanium Alloy (TAN), sterile
04.168.510S	Antirotation Screw, for Femoral Neck System, for Construct Length 110 mm, Titanium Alloy (TAN), sterile
04.168.515S	Antirotation Screw, for Femoral Neck System, for Construct Length 115 mm, Titanium Alloy (TAN), sterile
04.168.520S	Antirotation Screw, for Femoral Neck System, for Construct Length 120 mm, Titanium Alloy (TAN), sterile
04.168.525S	Antirotation Screw, for Femoral Neck System, for Construct Length 125 mm, Titanium Alloy (TAN), sterile
04.168.530S	Antirotation Screw, for Femoral Neck System, for Construct Length 130 mm, Titanium Alloy (TAN), sterile

5.0 mm Locking Screws*

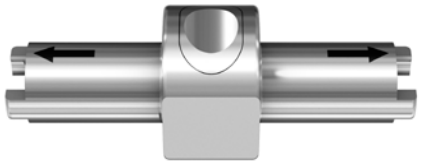
412.201 – 412.227	Locking Screw Stardrive ∅ 5.0 mm, self-tapping, Titanium Alloy (TAN)
413.314 – 413.390	Locking Screw ∅ 5.0 mm, self-tapping, Titanium Alloy (TAN)

* Available non-sterile and sterile packed. Add "S" to the article number to order sterile products.

Instruments

03.168.001	Angled Guide 130°, for Guide Wires ∅ 3.2 mm	
03.168.002	Correction Guide, for Guide Wires ∅ 3.2 mm (optional)	
357.399*	Guide Wire ∅ 3.2 mm, length 400 mm	
356.830*	Guide Wire ∅ 3.2 mm, for PFNA Blade (alternative to 357.399)	
03.168.003	Direct Measuring Device, for Guide Wires ∅ 3.2 mm	
03.168.004	Reamer, complete	
Consisting of:		
03.168.005	Drill Bit ∅ 10.2 mm, cannulated, length 251 mm	
03.168.006	Reamer ∅ 12.5 mm	
03.168.007	Nut, for Reamer	
03.168.008	Insertion Handle	

* Available non-sterile and sterile packed. Add "S" to the article number to order sterile products.

03.168.009	Insert, for Insertion Handle	
03.168.010	Multifunction Rod for Insertion Instruments	
03.168.011	Drill Bit ∅ 4.3 mm, length 413 mm	
03.168.012	Fixation Sleeve, length 60 mm	
03.168.013	Protection Sleeve, for Insertion Instruments	
03.168.014	Screwdriver Shaft Stardrive, T25, length 241 mm	
03.168.015	Cylinder, for Insertion Instruments	
03.168.016	Screwdriver Shaft hexagonal, 3.5 mm, length 241 mm (alternative to 03.168.014 for Locking Screw insertion)	
03.168.017	Depth Gauge, measuring range up to 100 mm (optional)	

03.140.027	Handle, large, cannulated, with Quick Coupling, Hex 12 mm	
511.774	Torque Limiter, 4 Nm, for AO/ASIF Quick Coupling for Reamers	
03.010.516	Handle, large, with Quick Coupling	

DePuy Synthes
PART OF THE Johnson&Johnson FAMILY OF COMPANIES

Synthes GmbH
Eimattstrasse 3
4436 Oberdorf
Switzerland
Tel: +41 61 965 61 11
Fax: +41 61 965 66 00
www.depuysynthes.com

Not all products are currently available in all markets.

This publication is not intended for distribution in the USA.

All surgical techniques are available as PDF files at
www.depuysynthes.com/ifu

CE
0123

 DSEM/TRM/0614/0098(2) 06/17