

Proximal Femoral Nail Antirootation

Edition 1 December 2021

Surgical Technique

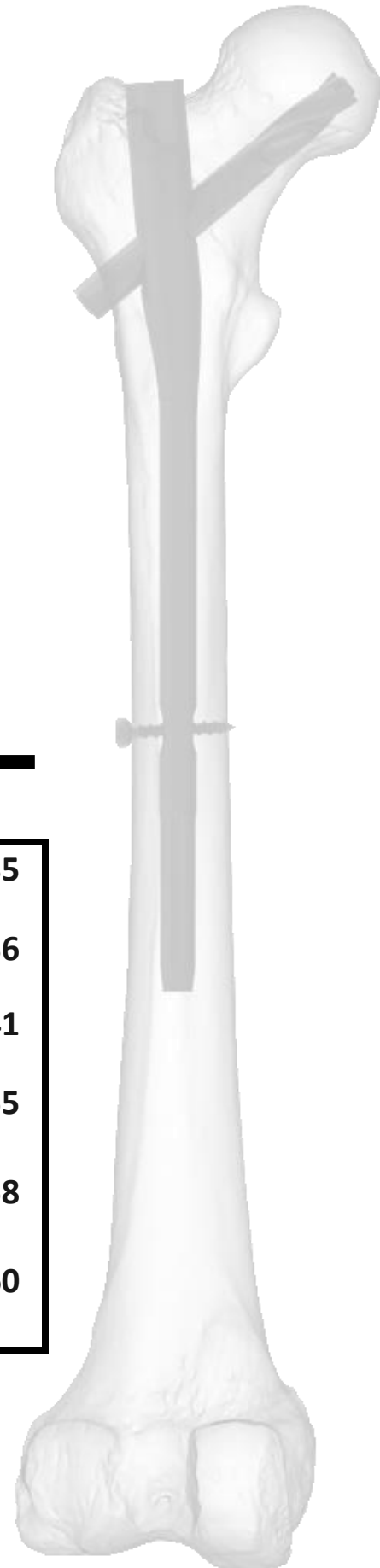


LET ME GUIDE YOU INTO THE PFNA

#FEMURFRACTURE #MOVEMENT #COMBINATION FRACTURE

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INTRODUCTION

Proximal femoral nail Autorotation Short Indications

- ✚ Intertrochanter fracture (31-A3)
- ✚ High subtrochanteric fracture (31-A1 and 31-A2)
- ✚ Per trochanteric fracture (31-A1 and 31-A2)

Contraindications

- ✚ Low subtrochanteric fracture
- ✚ Femoral shaft fractures
- ✚ Isolated or combined medial femoral neck fractures



Proximal femoral nail Autorotation Long Indications

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

Contraindications

- ✚ Isolated or combined medial femoral neck fractures



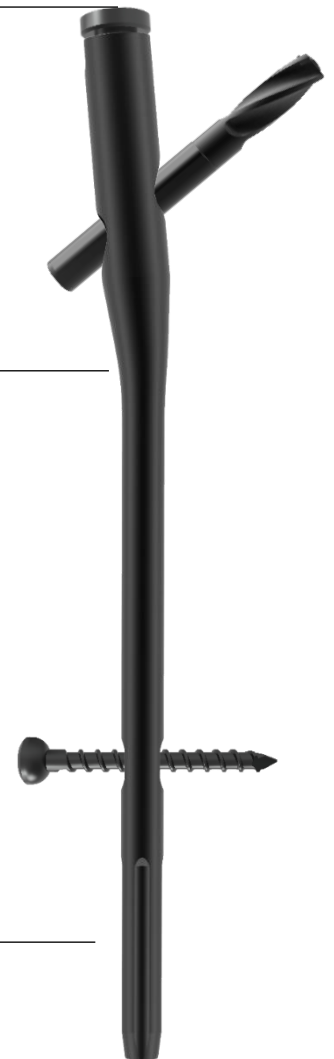
Specification of Proximal femoral nail Autorotation

The nail has a medial-lateral angle of 5°, which allows insertion at the tip of the greater trochanter.

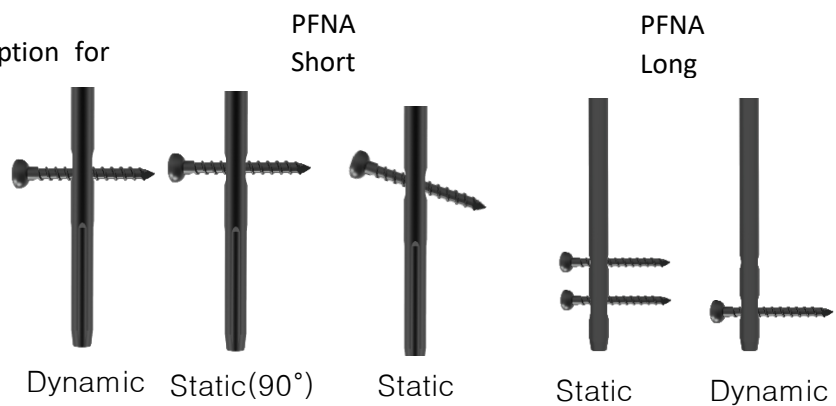
Higher bending point of the nail ensures the nail middle of the intramedullary canal.

The lateral flattened cross-section makes insertion easier and lowers the pressure on the lateral cortex.

The flexible PFNA tip eases insertion and reduce stress on the bone at the tip of the PFNA.



Provide static and dynamic distal locking option for clinical choice.



Product range of Proximal femoral Nail Autorotation

PFNA Short

Length: – 170mm,200mm,220mm,240mm

Diameter: – Ø9.0mm, Ø10.0mm, Ø11.0mm,
Ø12.0mm, Ø13.0mm, Ø14.0mm

Material: – Stainless steel 316l and Titanium Gr.5

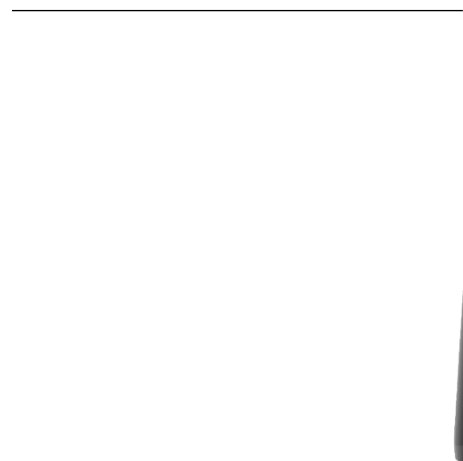


PFNA Long left and right

Length:260mm,280mm,300mm,320mm,340mm,
,360mm,380mm,400mm,420mm,440mm,

Diameter: – Ø9.0mm, Ø10.0mm, Ø11.0mm,
Ø12.0mm

Material: – Stainless steel 316l and Titanium Gr.5



PFNA Nail Blade

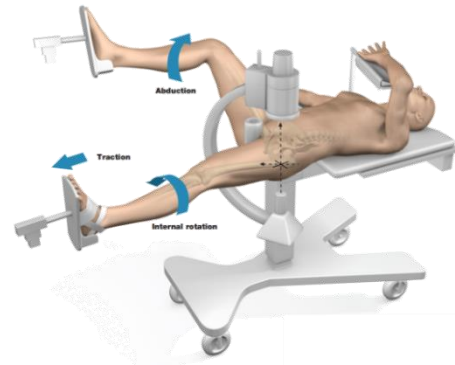
- Inserting the blade compacts the cancellous bone. This form of self-stabilization is especially advantageous in osteoporotic bone.
- The large surface area of the blade covers its whole length giving the best possible anchoring in osteoporotic bone.
- The increased stability caused by bone compaction around the blade has been biomechanically proven to retard rotation and Varus collapse.



Preparation

1. Patient Positioning

Place the patient in a supine position on the operating Table. The ipsilateral arm is elevated in a sling and the uninjured leg is placed on the leg holder.



2. Fracture Reduction

The Fracture should be closed reduction under C–arm. If the closed reduction is not satisfied choose open reduction.

Note:

Accurate anatomical reduction and fixation of the patient's broken limb to the operation bed can simplify the reduction process and get ideal results.

3. Determine Nail Diameter and Length Choosing

After fracture reduction, surgeons should decide nail diameter.

Place the C-arm upon proximal femur. Use long clamp to put Radiographic Scale (IS007-69) on lateral femur paralleled.

Change the place of the C-arm to the distal part. Check fracture reduction situation from AP View.

Read the length of the nail on the Radiographic Scale directly.

Select the nail diameter with which the intramedullary canal-to-cortex transition is still visible on both side of the diameter gauge.

Note:

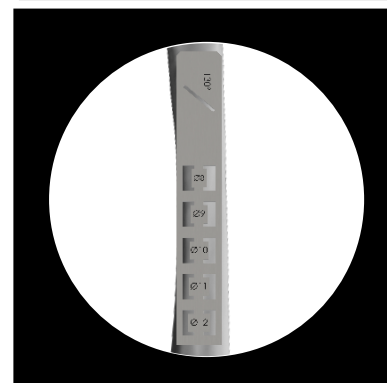
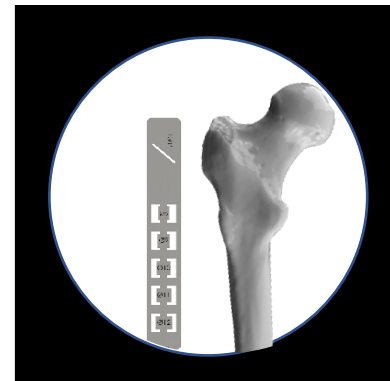
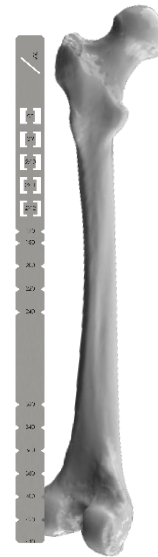
To fit the medullary cavity the nail diameter as large as possible is recommended.

Always choose the largest diameter nail that fits into the intramedullary canal

If the fracture line is lower than smaller trochanter long nail is recommended.

The diameter showed on the radiographic ruler is estimated because the femoral diameter is different on every portion.

If the reamed technique is used, the diameter of the largest medullary reamer applied must be 1mm larger than the nail diameter.



Radiographic Scale (IS007-69)

4. Operative Approach

Palpate the trochanter major.

Make a 5cm incision proximal from the tip of the great trochanter. Make a parallel incision of the fasciae of the gluteus Medius and split the gluteus Medius in line with the fibers.

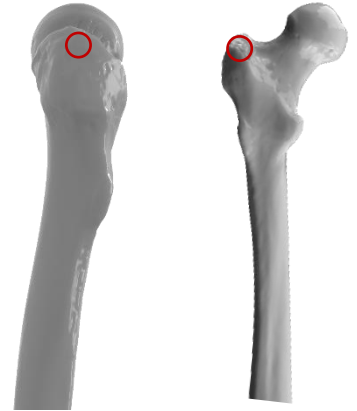


Insertion of Nail

1. Determine entry point

In AP view. The entry point is usually on the tip or slightly lateral to the tip of the greater trochanter at angle of 5° to the extension of the medullary cavity.

In lateral view, the entry point should be in the center of the medullary cavity.



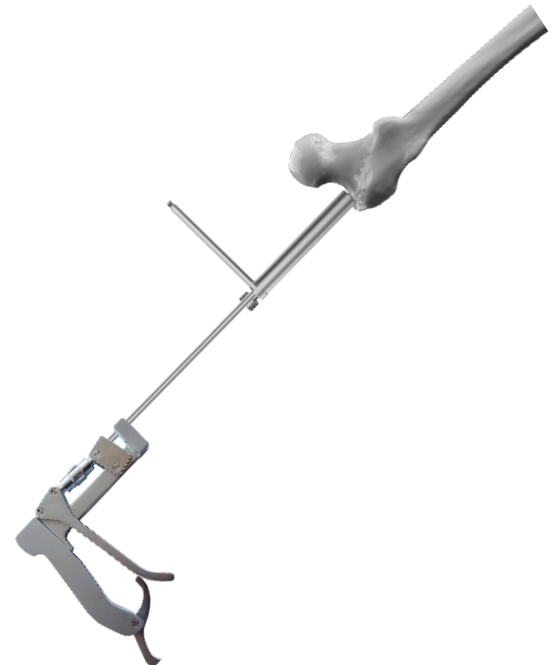
2. Insertion of Guide Wire

Secure the threaded guide wire 3.2mm x 400mm (IS007-43) in the power tool. Alternatively, the Guide Wire Holder (IS007-44) can be used to insert the guide wire manually.

Position both the Protection Sleeve 17mm (IS007-40) and the Guide sleeve 17X3.2mm (IS007-41) at the insertion point. Insert the guide wire through the protection sleeve and the Guide sleeve. Remove the Guide Wire Holder and the drill sleeve.

Note:

The guide wire should be inserted into femoral medullary cavity at least 15cm. 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 by C-arm.



Threaded guide wire 3.2mm x 400mm	IS007-43
Guide Wire Holder	IS007-44
Protection sleeve 17mm	IS007-40
Guide sleeve 17X3.2mm	IS007-41

3. Opening of Femur Medullary Cavity

3a. Open femur with awl

Guide the Bone awl Cannulated (IS007-45) over the guide wire and prepare with bi-directional turns the cavity for the proximal part of the PFNA nail. Remove the Bone awl Cannulated.

Bone awl Cannulated	IS007-45
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3b. Open femur with proximal reamer

Entry Reamer 17mm (IS007-42) through Protection Sleeve 17mm (IS007-40) over Threaded guide wire 3.2mm x 400mm (IS007-43) and drill as far as the entry reamer stops. Remove entry reamer. Protection sleeve and threaded guide wire.

Note:

It is recommended to open the femur by power too at high speed or carefully by hand. To prevent dislocation of the fracture fragments, avoid lateral movement or excessive compression forces.

Entry reamer 17mm	IS007-42
Protection Sleeve 17mm	IS007-40
Threaded guide wire 3.2mm x 400mm	IS007-43



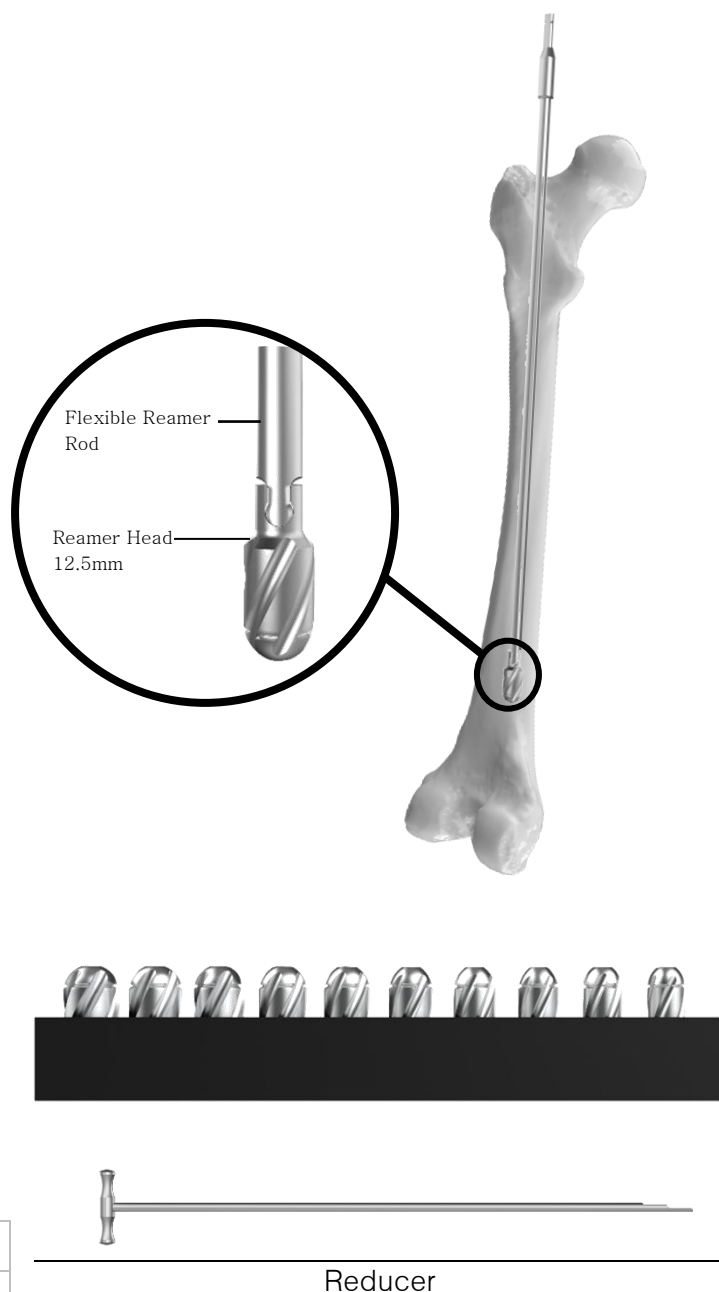
4. Ream Medullary Canal

After opening of femur medullary cavity. Insert the Guide wire reducer (IS007-60) through protection sleeve 17mm to reduce the fracture to prepare the working channel for long nail. Use guide wire holder to insert the Bided guide wire 2.5mm x 1000mm (IS007-59) through the Guide wire reducer (IS007-60). Open the ball Tip guide wire reached the distal femoral condylar. Remove the reducer and keep the protection sleeve at its original position.

Connect the Flexible Reamer Shaft (IS007-47) and Reamer Head Ø12.5mm (IS007-55). Insert the reamer through protection sleeve over the guide wire. Starting with 8.5mm diameter reaming head with 8.5mm diameter reaming head, ream to a diameter of 0.5mm to 1.5mm larger than the chosen nail diameter. Advance the reamer with steady, moderate pressure. Do not force the reamer. Partially retract the reamer repeatedly to clear debris from the medullary canal.

Use the holding forceps to retain the reaming rod while reaming and to prevent it from rotating. Remove the reaming rod before locking the intramedullary nail.

Guide wire reducer	IS007-60
Bided guide wire 2.5mm x 1000mm	IS007-59
Flexible Reamer Shaft	IS007-47
Reamer Head	IS007-55



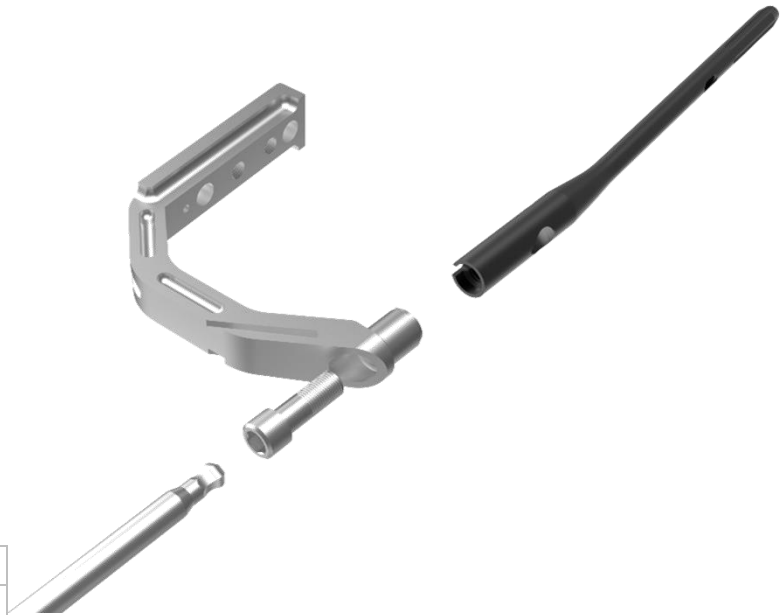
5. Nail insertion Handle Assembly

Conical Bolt (IS007-02) through Insertion Handle (IS007-01) and secure the nail to the insertion handle using Hexagonal screwdriver with spherical head 8mm (IS007-68).

Note:

Ensure that the connection between PFNA and insertion handle is tight to avoid deviations when inserting the PFNA blade through the aiming arm. Do not attach the aiming arm yet.

Conical Bolt	IS007-02
Insertion Handle	IS007-01
Hexagonal screwdriver with spherical head 8mm	IS007-68



6. Insert PFNA

Carefully insert the nail manually as far as possible into the femoral canal. Slight twisting the Handle helps insertion. If the nail cannot be inserted. Select a smaller size nail diameter or ream the medullary cavity to a diameter that is at least 1 mm larger than that of the selected nail.

The correct nail insertion depth is reached, as soon as the projected blade is positioned in the lower half of the femoral neck.

Placing a ruler on the AP view allows checking the position of the blade. A too cranial or too caudal nail position should be avoided as it can lead malposition of the blade.

The anteversion can be determined by inserting a guide wire ventral to the femoral neck. In the mediolateral view place, the insertion handles parallel to the guide wire to align the correct rotation of the nail.

Remove guide wire. Do not reuse, but dispose of the guide wire.

Note:

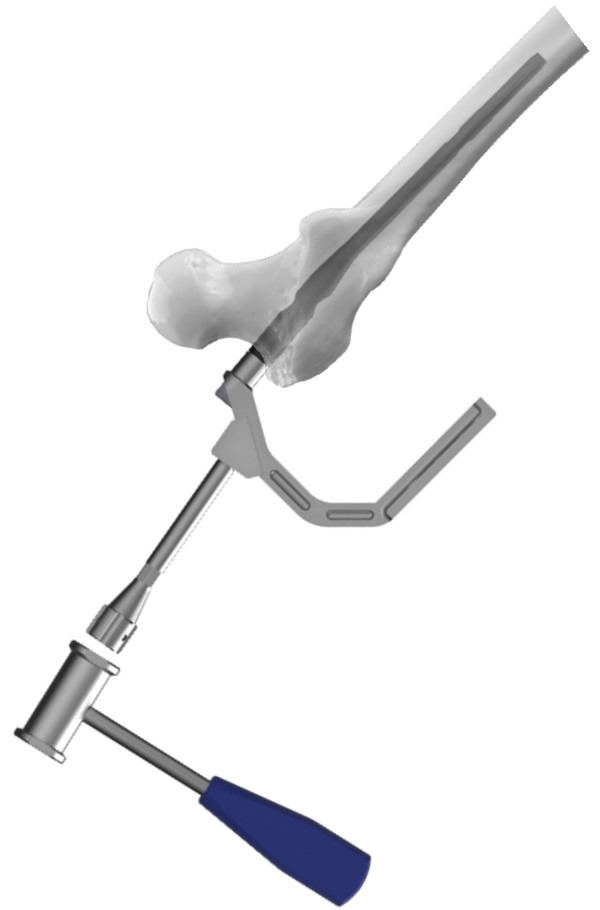
Always ensure that the nail is firmly attached to the insertion handle. Avoid unnecessary use of force to prevent loss of reduction or an iatrogenic fracture.



Attach the Insertion connector (IS007-63) on the insertion Handle and secure Insertion connecting rod (IS007-62) and insertion connector (IS007-63). Use the hammer (IS007-65) to blow on the connector to insert the nail. Remove the insertion connecting rod and the insertion connector.

Long nail should be inserted over ball tip guide wire but short nail shouldn't. Remove the ball tip guide wire when long nail is inserted appropriately to ensure it does not affect the following steps.

Insertion connector	IS007-63
Insertion connecting rod	IS007-62
Hammer	IS007-65



Insertion of Blade

1. Assemble Aiming Arm

Mount the Proximal Aiming arm 130° for blade (IS007-05) and fix it firmly to the insertion handle with bolt for aiming arm (IS007-09).

Proximal Aiming arm 130° for blade	IS007-05
Bolt for aiming arm	IS007-09

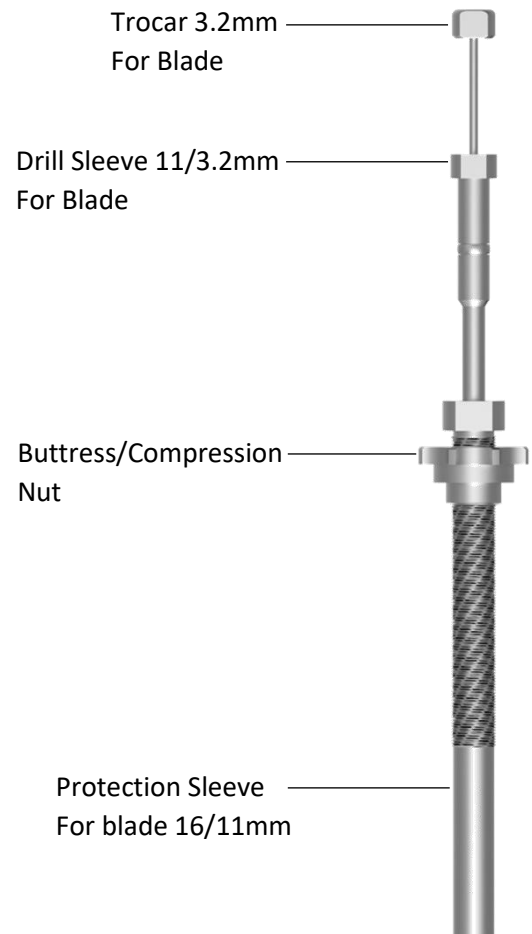


2. Preparation of the wire insertion

Firmly secure Buttress/Compression Nut (IS007-31) to Protection Sleeve For blade 16/11mm (IS007-24). Rotation the Buttress Nut until it reaches the mark in the Protection Sleeve.

Insert Drill Sleeve 11/3.2mm For Blade (IS007-25) and Trocar 3.2mm For Blade (IS007-26) through the protection sleeve.

Buttress/Compression Nut	IS007-31
Protection Sleeve For blade 16/11mm	IS007-24
Drill Sleeve 11/3.2mm For Blade	IS007-25
Trocar 3.2mm For Blade	IS007-26



3. Guide Wire Insertion

Advance the entire sleeve assembly for blade through the aiming arm to the skin. 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 click into the aiming arm.

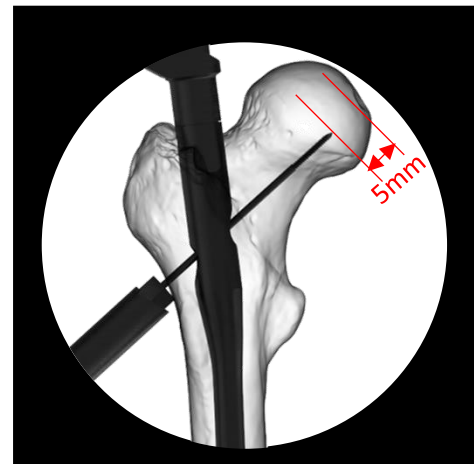
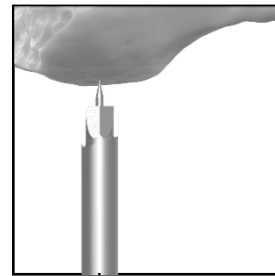
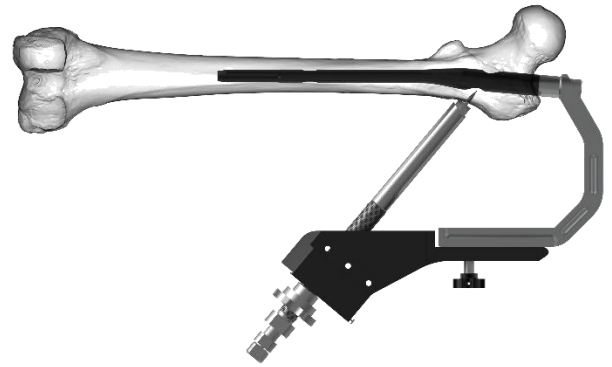
Ensure that the sleeve assembly clicks into the aiming arm. This will ensure the Blade.

Insert the sleeve assembly as far as the lateral cortex. Advance the protection sleeve to the lateral cortex using slight clockwise turns of the buttress nut.

The sleeve assembly must be in contact with the bone before insertion of the blade. 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 Threaded guide wire 3.2mm x 400mm (IS007-43) Through the Trocar Sleeve. Check the position and direction at AP and ML view under C-arm. In the AP view, the position of guide wire should be in the lower half of the femoral neck and in the ML view. Insert the Guide wire into the femoral head. But at least 5mm below the joint level.

It is acceptable if the guide wire is a little lower and posterior as the bone quality at this area is relatively good and the AR blade has better anti-rotation performance than single hip screw.

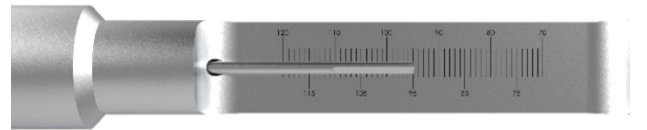
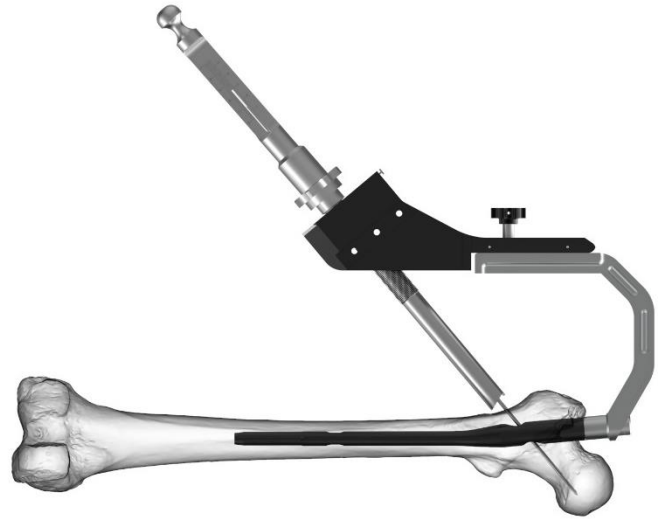


4. Determine the Blade Length

Verify the position of the guide wire in AP and ML view before measuring the length.

Advance Depth Gauge for Blade (IS007-23) to the protection sleeve over the Threaded guide wire 3.2mm x 400mm (IS007-43) and read the length.

The Blade tip should be 10mm to 15mm Below the joint level. The tip of guide wire is 5mm below the joint level so the length of AR blade should be 10mm deducted from the measuring reading. Remove the Depth Gauge for Blade and Drill Sleeve 11/3.2mm For Blade.



Depth Gauge for Blade	IS007-23
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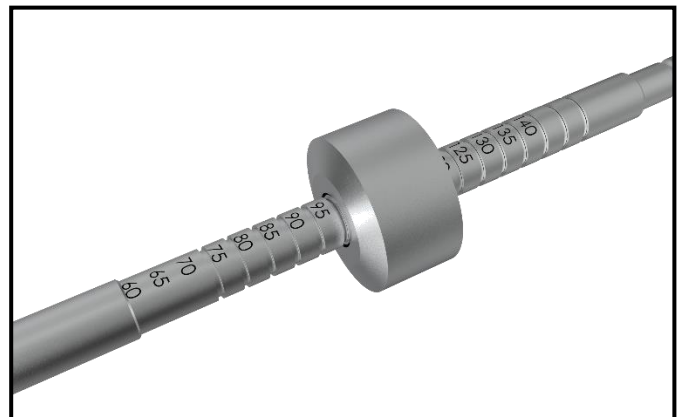
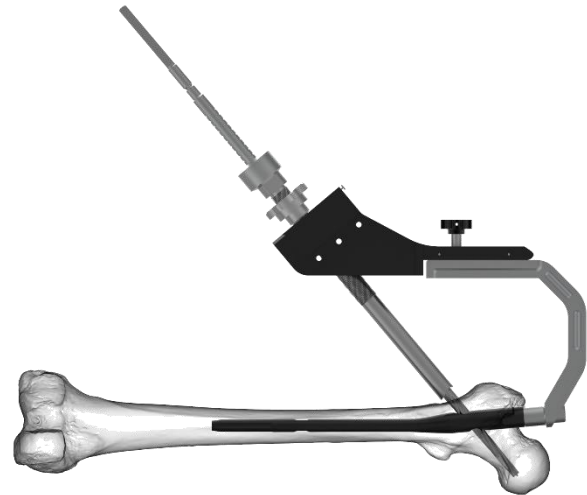
5. Drill Hole for Blade

Note: Use reamer only in a situation with good quality.

Set the chosen blade length on the cannulated reamer by fixing the fixation sleeve in the corresponding position. Read off the correct length on the side of the fixation sleeve pointing towards the tip of the reamer.

Push the reamer over the guide wire. Monitor drilling under image intensifier control. Drill to the stop. The fixation sleeve prevents further drilling.

Note: Use the reamer only after opening the lateral cortex if the guide wire has been bent slightly during insertion, Guide the reamer over the wire using carefully forward and backward moments. However, if with a new guide wire. Otherwise, the guide wire may be advanced through the joint.



Entry Reamer 17mm	IS007-42
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6. Assembly for PFNA blade

Holding the PFNA Blade by Key for PFNA Blade then insert the impactor for PFNA Blade.



PFNA Blade

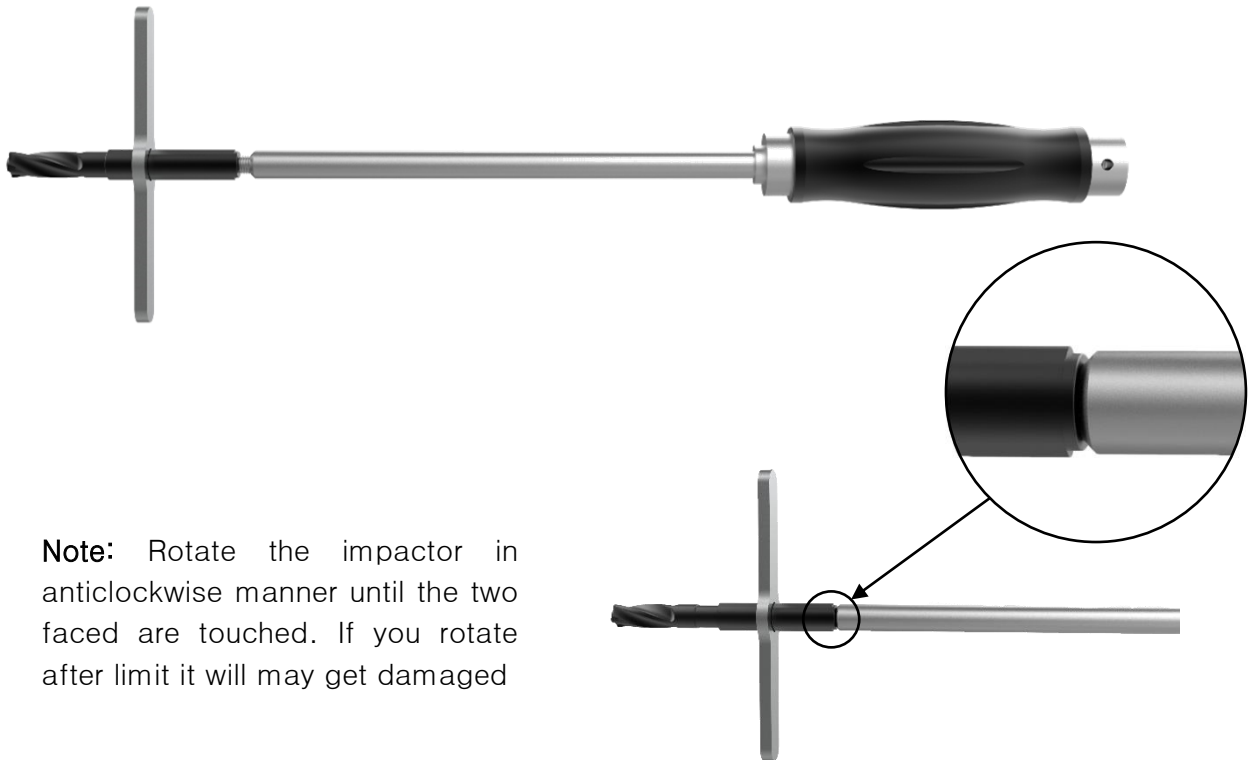


Impactor for Blade 4.5mm Tip (IS007-28)



Key for Blade (IS007-29)

Insert the impactor in the hexagonal portion of the blade. After that rotate the impactor in the anticlockwise manner.



Note: Rotate the impactor in anticlockwise manner until the two faced are touched. If you rotate after limit it will may get damaged

7. Inserting Blade

Insert Blade-impactor assembly for blade over the Ø3.2mm Guide wire through the protection Sleeve. The Particular shape of the Blade requires it to be aligned with the protection sleeve for insertion

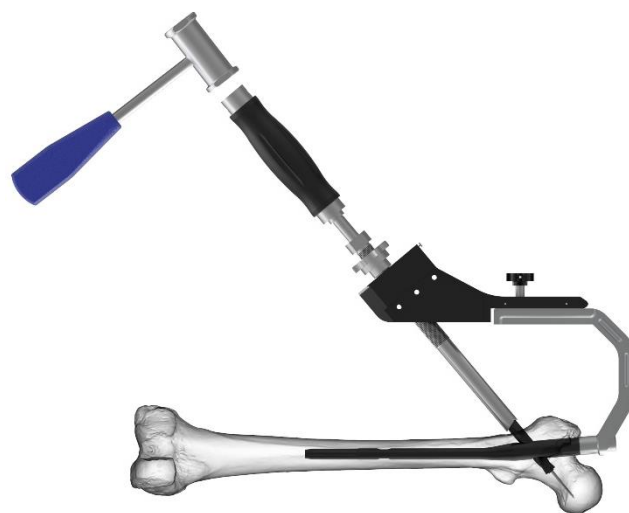
Hold the black handle of the screwdriver and manually insert the blade over the guide wire as far as possible into the femoral head.

Slightly below the screwdriver for blade with the hammer until the screwdriver reached the sleeve.

Note:

It is very important to insert the blade to the stop, so the screwdriver must reach the sleeve. Do not use unnecessary force when inserting the blade.

Use image intensification to check the position of the Blade.



Blade-Impactor Assembly

8. Locking of Blade

Turn the screwdriver clockwise to the stop. The blade is now locked. Do not tighten too much

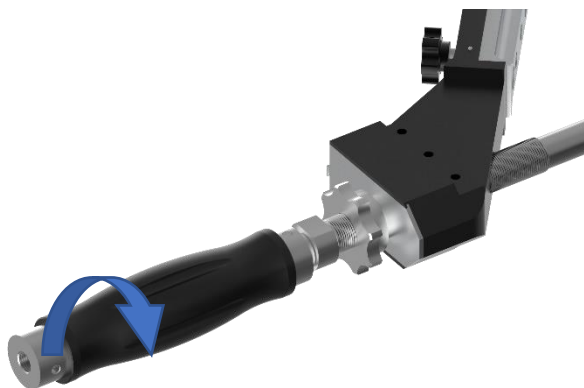
Verify Blade locking instar operatively. The Blade is locked if all gaps are closed.

Note:

If the blade cannot be locked, remove it and replace it by a new blade (see Implant removal).

Remove the screwdriver for blade. Remove and dispose of the guide wire.

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



Locked

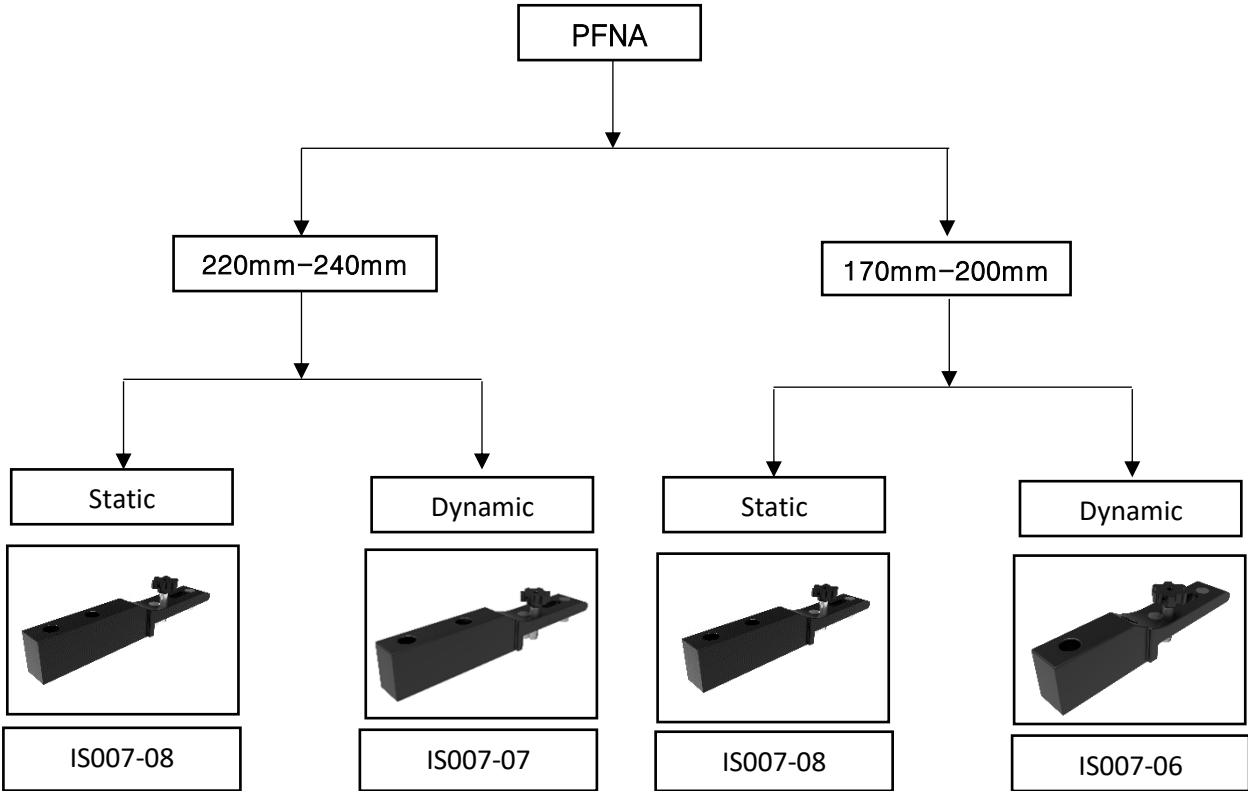


Unlocked

Distal Locking for PFNA Short

1. Selection Distal Locking Aiming Arm

Static Distal Locking or Dynamic Distal Locking can be Performed by using different aiming arms.



2. Distal Locking

Fix the static aiming arm (IS007-08) on the infestation handle.

Insert the sleeve assembly, Drill Sleeve 8/4.3mm (IS007-19) and, Trocar 4.3mm (IS007-20) through the static hole of the aiming arm. Make a stab incision and make a blunt separation of the soft tissue. Advance the Trocar 4.3mm (IS007-20) to the bone remove the trocar.

Use the Drill Bit 4.3X300mm (IS007-21) to drill through both cortical. The tip of the drill bit should protrude by 2mm to 4mm.

Determine the position of the drill bit after both cortical are drilled through.

Note:

Always make sure that no diastasis has occurred intraoperative before beginning distal locking. Diastasis can cause delayed healing.

Always ensure that the connection between the nails. Insertion handle and aiming are good. Otherwise, drilling for the distal locking screw can damage nail.

Drill Sleeve 8/4.3mm	IS007-19
Trocar 4.3mm	IS007-20
Drill Bit 4.3X300mm	IS007-21



3. Measurement of the Screw Length

Remove the drill bit and drill sleeve after both cortical are drilled through. Advance the Direct Measuring Device for Locking Bolt (IS007-70) through the outer sleeve and through both cortices. Draw back the hook until it engages in the opposite cortex. Read the measurement from the depth gauge. Make sure the locking screw with proper length is selected.



Direct Measuring Device for Locking Bolt	IS007-70
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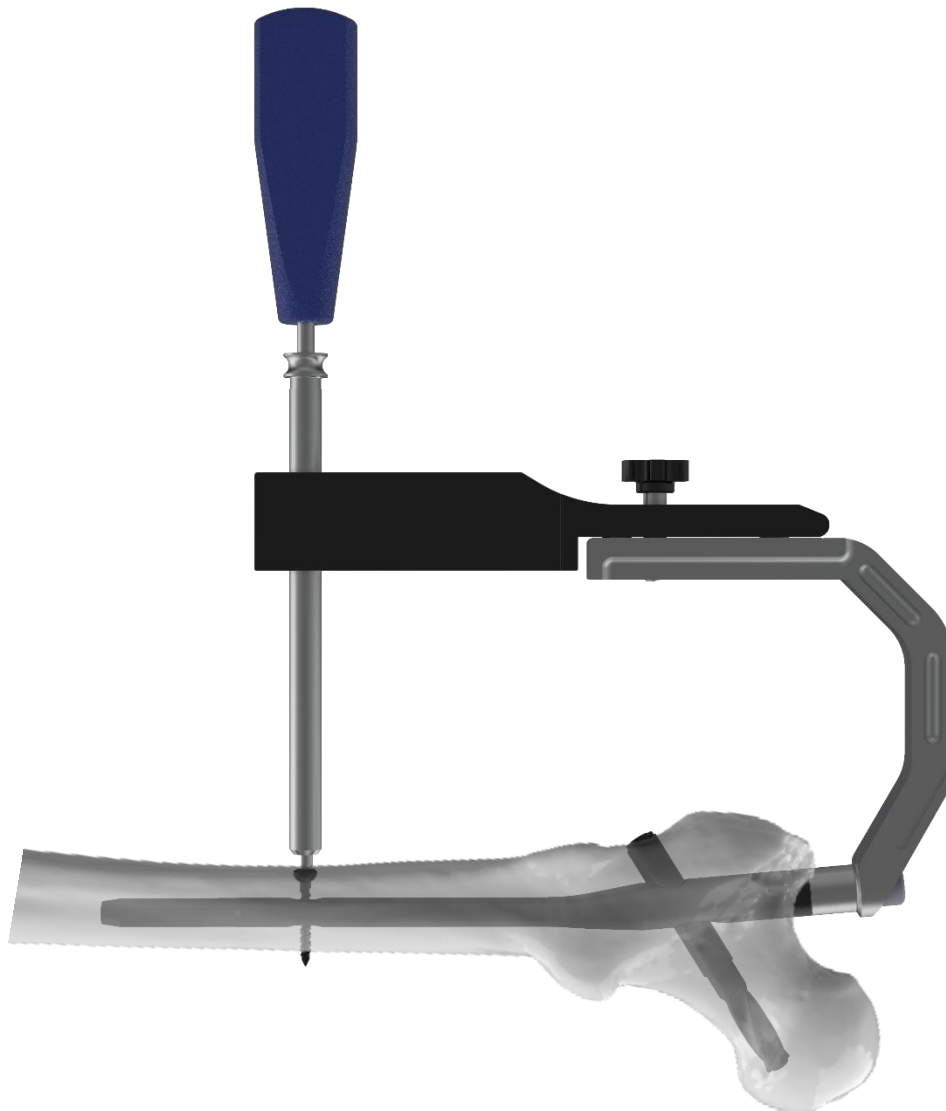


4. Fix the Distal Screw

Assemble Hexagonal screwdriver 3.5mm Tip (IS007-67) and Locking Screw. insert a locking screw until the screw tip protrudes the opposite cortex for 1mm to 2mm. Rotate the screwdriver anticlockwise and remove the screwdriver and the outer sleeve.



Screwdriver 3.5mm Tip	IS007-67
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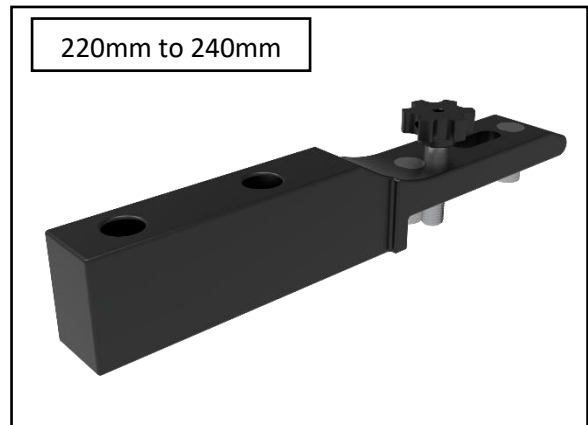
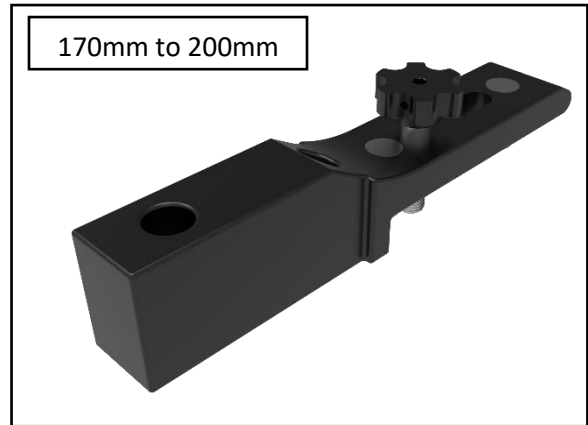


5. Dynamic Distal Locking

Remove the aiming arm for static locking and mount the aiming arm for Dynamic locking on the insertion handle. Proceed as described in page 24,25 and 26 for Dynamic locking.

Note:

Same process has followed for the drilling and screw placement.

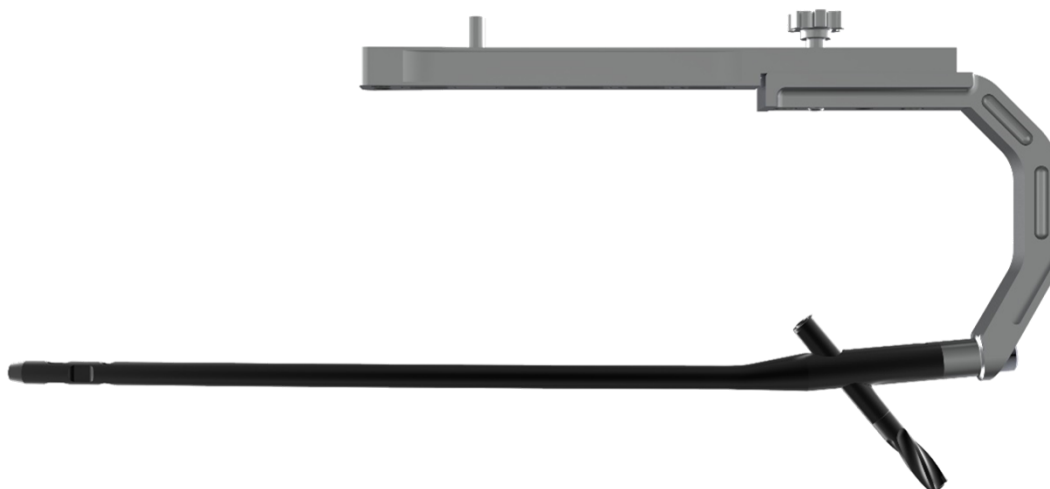


Distal Locking for PFNA Long (320mm to 440mm)

Distal Locking of Long nails can be performed free hand or with special targeting device provided.

1. Proximal aiming bar assembly

Remove the aiming arm. Attach proximal aiming bar (IS007-03) to the handle with proximal bolt (IS007-04). Then attach Distal Aiming bar (IS007-10) to the proximal aiming arm bar with distal bolt (IS007-15).



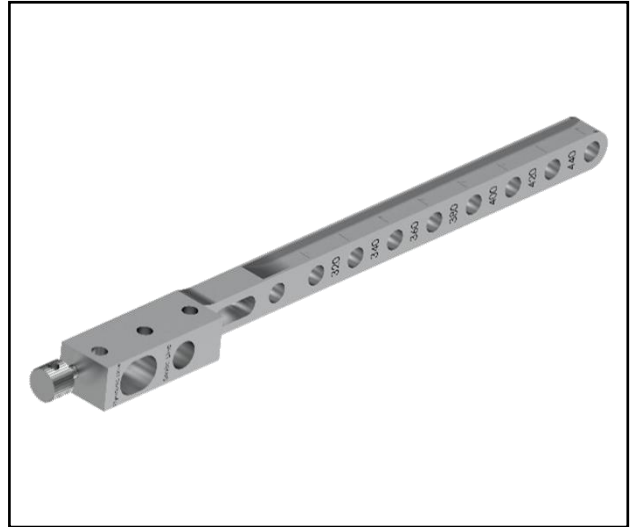
2. Distal Aiming bar

Then attach Distal Aiming bar (IS007-10) to the proximal aiming bar (IS007-03) with distal bolt (IS007-15).

Note:

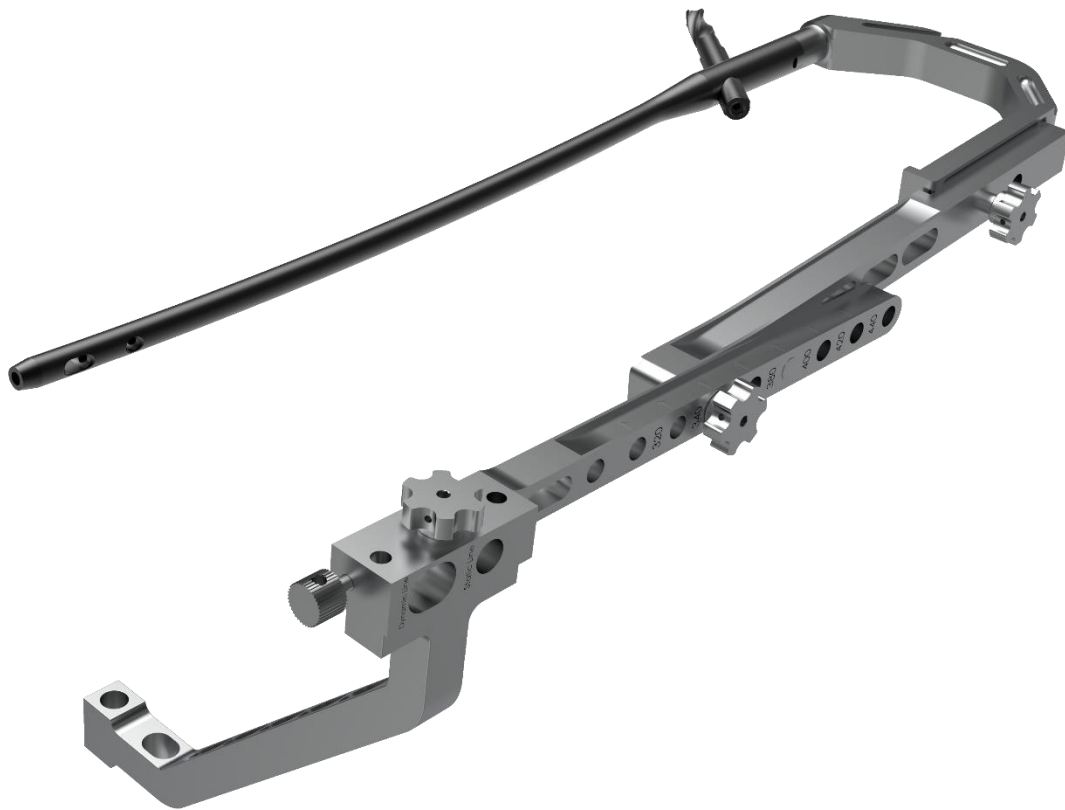
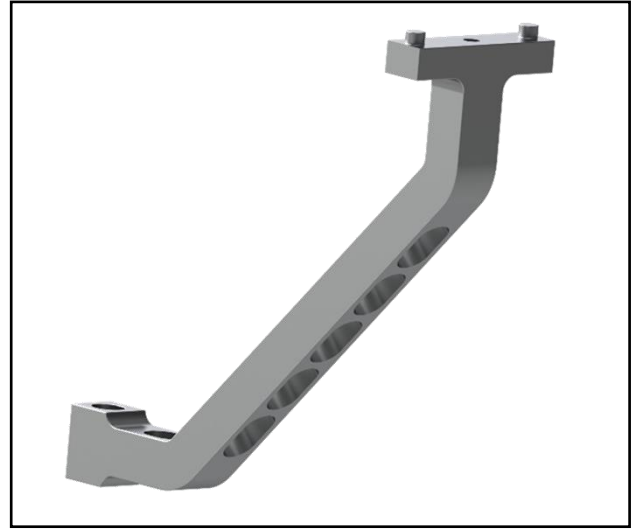
Please note the marker on the proximal aiming bar showing left and right. Match the arrows of proximal aiming bar and distal aiming bar according to the length of selected nail.

Attach the Targeter for distal hole (IS007-16 to the Distal Aiming Bar with Targeter Bolt (IS007-17).



3. Attached Targeter

Attach the Targeter for distal hole (IS007-16) to the Distal Bolt (IS007-15).



4. Position Rod Placement

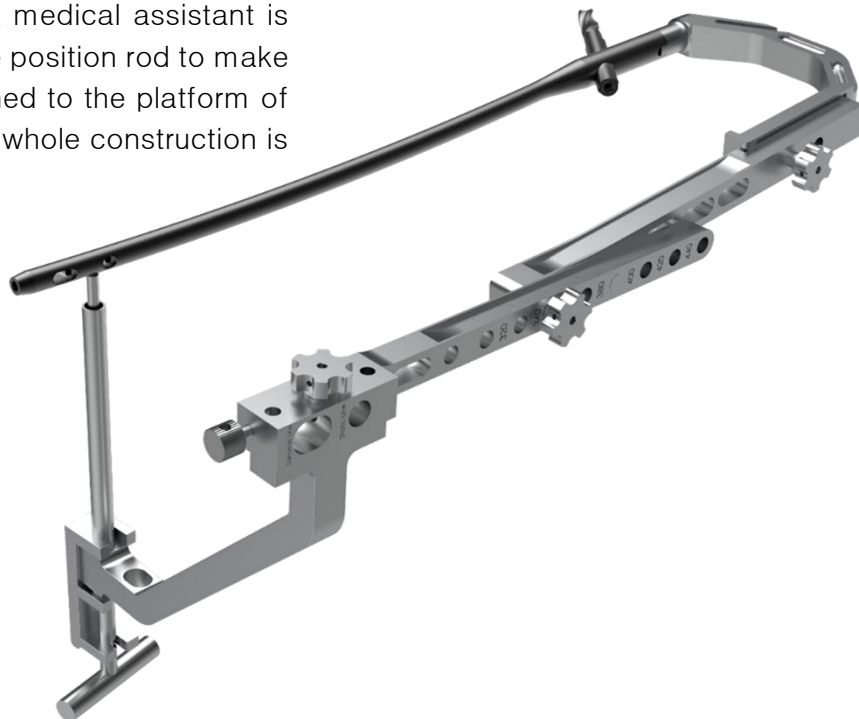
Insert the assembly sleeve, Drill Sleeve and trocar through the hole of targeter. Make a stab incision and blunt separation of the soft tissue. Advance the trocar to the bone surface. Remove trocar and trocar sleeve.

Insert drill Sleeve 5.2 (IS007-37) and use drill bit $\text{Ø}5.2\text{mm}$ (IS007-35) to drill until it clicks on the platform of the nail. Remove the drill bit. Use Position Rod Drill by Drill Bit 5.2mm T-Type (IS007-36) to remove the bone debris on the platform of the nail. Remove position rod drill and drill sleeve.

Notes:

Using position rod drill to remove the bone debris is essential for the accuracy of distal locking.

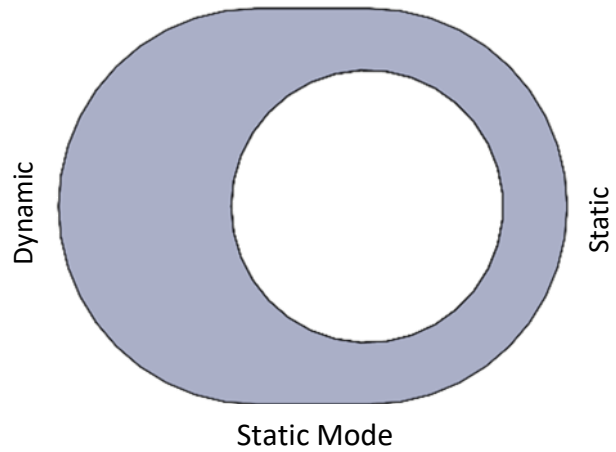
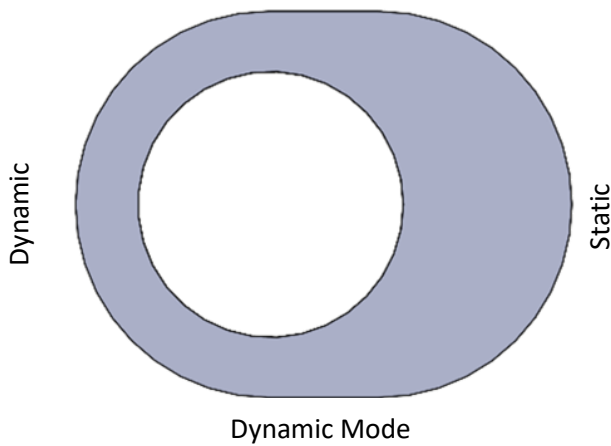
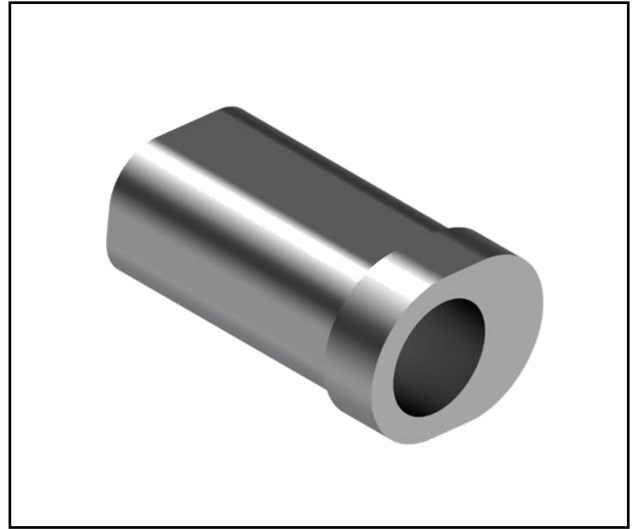
Insert Position Rod (IS007-12) through the predrilled hole until it clicks on the nail. Use E Block (IS007-11) to secure the position rod. A medical assistant is required to hold the position rod to make sure it firmly attached to the platform of the nail so that the whole construction is stable.



5. Distal Locking

There are two holes on the Distal Aiming bar. In the distal hole, there is an oval block with one round hole. On each side of the oval block there is a marker showing “dynamic” and “static”. Place the oval block with the round hole (IS007-13) near to the “Dynamic” marker. Dynamic locking can be performed. Place the oval block with the round hole near to the “Static” marker, static locking can be performed.

Place the oval block with the round hole near to the “static” marker, static locking can be performed.



Note:

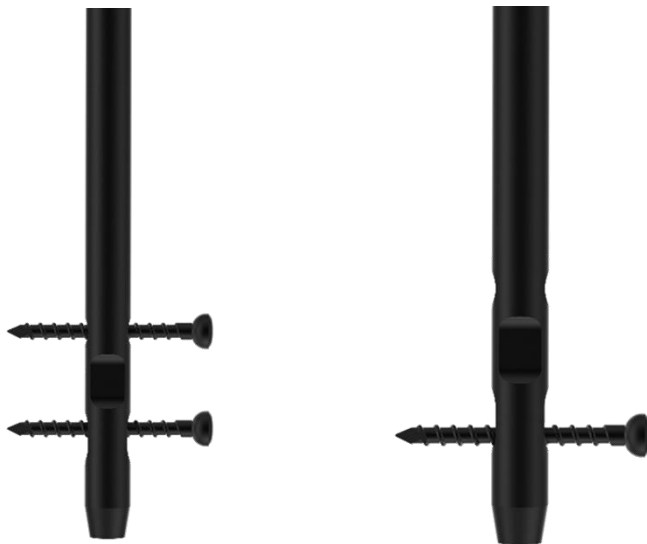
Process as described in distal locking for short nail to drill the hole. Do not insert the locking screw yet. Place replacement rod in the hole. Then place the oval block with the round hole near to the “static” marker and secure it with the bolt on the distal part of the distal aiming bar.

Proceed as described in page 24,25 and 26 insert one locking screw in the hole.

Remove the replacement rod in the first hole and insert one locking screw.

Verify the position of the locking screw with the help of image intensification device and remove all the targeting devices.

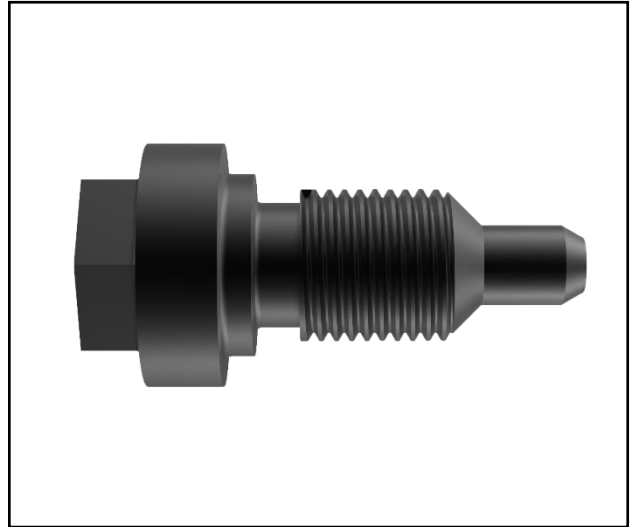
For dynamic distal locking. One screw insertion in the second hole is enough.



6. Insertion of End Cap

Insert the Guide Pin with hook Through the cap then guide the Screw Driver for cannulated cap 4mm tip (IS007-74) over the guide wire with hook to the cap. The cap is retained automatically as soon as this connection is established. Guide the cap to the proximal end of the nail and secure it.

Remove the Screw Driver from cannulated cap and guide wire with hook.



Implant Removal

1. Removal of Blade

After an incision through the old scars, Located the blade by palpation or under C arm. Insert the Threaded guide wire 3.2mm x 400mm (IS007-43) Through the blade. Push the Extraction Screw for blade (IS007-30) over the guide wire and use gentle pressure to turn it anticlockwise into the blade. Use slotted hammer (IS007-66) impact to remove the blade.

Use the key for blade (IS007-29) to remove the blade from the extraction screw if necessary.

Extraction Screw for blade	IS007-30
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2. Removal of the Screw and nail

Before removal of the locking screw. Assemble the extraction screw for nail (IS007-64) with the nail and secure it firmly. Remove the locking screw with screwdriver for distal locking screw.

Remove the end cap by screwdriver for cap, cannulated.

Extra the nail by applying gentle blows with the slotted hammer.

Impactor Extractor Rod	IS007-64
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Implants

P.F.N.A. Nail Short				
	Code for Stainless Steel	Code for Titanium	Length	Diameter
	S3016.09170	T3016.09170	170mm	Ø9.0mm
	S3016.10170	T3016.10170		Ø10.0mm
	S3016.11170	T3016.11170		Ø11.0mm
	S3016.12170	T3016.12170		Ø12.0mm
	S3016.13170	T3016.13170		Ø13.0mm
	S3016.14170	T3016.14170		Ø14.0mm
	S3016.09200	T3016.09200	200mm	Ø9.0mm
	S3016.10200	T3016.10200		Ø10.0mm
	S3016.11200	T3016.11200		Ø11.0mm
	S3016.12200	T3016.12200		Ø12.0mm
	S3016.13200	T3016.13200		Ø13.0mm
	S3016.14200	T3016.14200		Ø14.0mm
	S3016.09220	T3016.09220	220mm	Ø9.0mm
	S3016.10220	T3016.10220		Ø10.0mm
	S3016.11220	T3016.11220		Ø11.0mm
	S3016.12220	T3016.12220		Ø12.0mm
	S3016.13220	T3016.13220		Ø13.0mm
	S3016.14220	T3016.14220		Ø14.0mm
	S3016.09240	T3016.09240	240mm	Ø9.0mm
	S3016.10240	T3016.10240		Ø10.0mm
S3016.11240	T3016.11240	Ø11.0mm		
S3016.12240	T3016.12240	Ø12.0mm		
S3016.13240	T3016.13240	Ø13.0mm		
S3016.14240	T3016.14240	Ø14.0mm		

P.F.N.A. Long Right



Code for Stainless Steel	Code for Titanium	Length	Diameter
S3016R.09260	T3016R.09260	260mm	Ø9.0mm
S3016R.09280	T3016R.09280	280mm	
S3016R.09300	T3016R.09300	300mm	
S3016R.09320	T3016R.09320	320mm	
S3016R.09340	T3016R.09340	340mm	
S3016R.09360	T3016R.09360	360mm	
S3016R.09380	T3016R.09380	380mm	
S3016R.09400	T3016R.09400	400mm	
S3016R.09420	T3016R.09420	420mm	
S3016R.09440	T3016R.09440	440mm	
S3016R.10260	T3016R.10260	260mm	Ø10.0mm
S3016R.10280	T3016R.10280	280mm	
S3016R.10300	T3016R.10300	300mm	
S3016R.10320	T3016R.10320	320mm	
S3016R.10340	T3016R.10340	340mm	
S3016R.10360	T3016R.10360	360mm	
S3016R.10380	T3016R.10380	380mm	
S3016R.10400	T3016R.10400	400mm	
S3016R.10420	T3016R.10420	420mm	
S3016R.10440	T3016R.10440	440mm	
S3016R.11260	T3016R.11260	260mm	Ø11.0mm
S3016R.11280	T3016R.11280	280mm	
S3016R.11300	T3016R.11300	300mm	
S3016R.11320	T3016R.11320	320mm	
S3016R.11340	T3016R.11340	340mm	
S3016R.11360	T3016R.11360	360mm	
S3016R.11380	T3016R.11380	380mm	
S3016R.11400	T3016R.11400	400mm	
S3016R.11420	T3016R.11420	420mm	
S3016R.11440	T3016R.11440	440mm	
S3016R.12260	T3016R.12260	260mm	Ø12.0mm
S3016R.12280	T3016R.12280	280mm	
S3016R.12300	T3016R.12300	300mm	
S3016R.12320	T3016R.12320	320mm	
S3016R.12340	T3016R.12340	340mm	
S3016R.12360	T3016R.12360	360mm	
S3016R.12380	T3016R.12380	380mm	
S3016R.12400	T3016R.12400	400mm	
S3016R.12420	T3016R.12420	420mm	
S3016R.12440	T3016R.12440	440mm	

P.F.N.A. Long Left



Code for Stainless Steel	Code for Titanium	Length	Diameter
S3016L.09260	T3016L.09260	260mm	Ø9.0mm
S3016L.09280	T3016L.09280	280mm	
S3016L.09300	T3016L.09300	300mm	
S3016L.09320	T3016L.09320	320mm	
S3016L.09340	T3016L.09340	340mm	
S3016L.09360	T3016L.09360	360mm	
S3016L.09380	T3016L.09380	380mm	
S3016L.09400	T3016L.09400	400mm	
S3016L.09420	T3016L.09420	420mm	
S3016L.09440	T3016L.09440	440mm	
S3016L.10260	T3016L.10260	260mm	Ø10.0mm
S3016L.10280	T3016L.10280	280mm	
S3016L.10300	T3016L.10300	300mm	
S3016L.10320	T3016L.10320	320mm	
S3016L.10340	T3016L.10340	340mm	
S3016L.10360	T3016L.10360	360mm	
S3016L.10380	T3016L.10380	380mm	
S3016L.10400	T3016L.10400	400mm	
S3016L.10420	T3016L.10420	420mm	
S3016L.10440	T3016L.10440	440mm	
S3016L.11260	T3016L.11260	260mm	Ø11.0mm
S3016L.11280	T3016L.11280	280mm	
S3016L.11300	T3016L.11300	300mm	
S3016L.11320	T3016L.11320	320mm	
S3016L.11340	T3016L.11340	340mm	
S3016L.11360	T3016L.11360	360mm	
S3016L.11380	T3016L.11380	380mm	
S3016L.11400	T3016L.11400	400mm	
S3016L.11420	T3016L.11420	420mm	
S3016L.11440	T3016L.11440	440mm	
S3016L.12260	T3016L.12260	260mm	Ø12.0mm
S3016L.12280	T3016L.12280	280mm	
S3016L.12300	T3016L.12300	300mm	
S3016L.12320	T3016L.12320	320mm	
S3016L.12340	T3016L.12340	340mm	
S3016L.12360	T3016L.12360	360mm	
S3016L.12380	T3016L.12380	380mm	
S3016L.12400	T3016L.12400	400mm	
S3016L.12420	T3016L.12420	420mm	
S3016L.12440	T3016L.12440	440mm	

4.9mm Inter-Locking Screw



Length	Code for Stainless Steel	Code for Titanium
18mm	S1067.018	T1067.018
20mm	S1067.020	T1067.020
22mm	S1067.022	T1067.022
24mm	S1067.024	T1067.024
26mm	S1067.026	T1067.026
28mm	S1067.028	T1067.028
30mm	S1067.030	T1067.030
32mm	S1067.032	T1067.032
34mm	S1067.034	T1067.034
36mm	S1067.036	T1067.036
38mm	S1067.038	T1067.038
40mm	S1067.040	T1067.040
42mm	S1067.042	T1067.042
44mm	S1067.044	T1067.044
46mm	S1067.046	T1067.046
48mm	S1067.048	T1067.048
50mm	S1067.050	T1067.050
52mm	S1067.052	T1067.052
54mm	S1067.054	T1067.054
55mm	S1067.055	T1067.055
56mm	S1067.056	T1067.056
58mm	S1067.058	T1067.058
60mm	S1067.060	T1067.060
62mm	S1067.062	T1067.062
64mm	S1067.064	T1067.064
65mm	S1067.065	T1067.065
66mm	S1067.066	T1067.066
68mm	S1067.068	T1067.068
70mm	S1067.070	T1067.070
72mm	S1067.072	T1067.072
74mm	S1067.074	T1067.074
75mm	S1067.075	T1067.075
76mm	S1067.076	T1067.076
78mm	S1067.078	T1067.078
80mm	S1067.080	T1067.080
85mm	S1067.085	T1067.085
90mm	S1067.090	T1067.090
95mm	S1067.095	T1067.095
100mm	S1067.100	T1067.100

P.F.N.A. Nail Blade



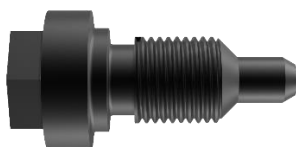
Code for Stainless Steel	Code for Titanium	Length
S3019.065	T3019.065	65mm
S3019.070	T3019.070	70mm
S3019.075	T3019.075	75mm
S3019.080	T3019.080	80mm
S3019.085	T3019.085	85mm
S3019.090	T3019.090	90mm
S3019.095	T3019.095	95mm
S3019.100	T3019.100	100mm
S3019.105	T3019.105	105mm
S3019.110	T3019.110	110mm
S3019.115	T3019.115	115mm
S3019.120	T3019.120	120mm

End Cap For P.F.N.A With Pin



Code for Stainless Steel	Code for Titanium	Length
S3018.00	T3018.00	35.0mm
S3018.05	T3018.05	40.0mm
S3018.10	T3018.10	45.0mm
S3018.15	T3018.15	50.0mm

End Cap for P.F.N.A



Code for Stainless Steel	Code for Titanium	Length
S3017.00	T3017.00	29mm
S3017.05	T3017.05	32mm
S3017.10	T3017.10	37mm
S3017.15	T3017.15	42mm

Instrument



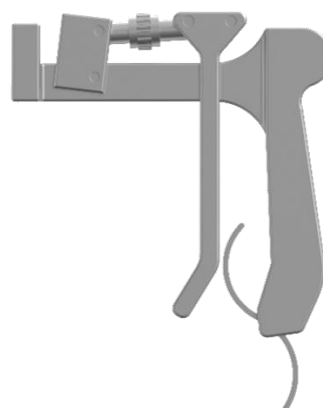
Radiographic Scale

IS007-69



Protection Sleeve 21X17mm

IS007-40



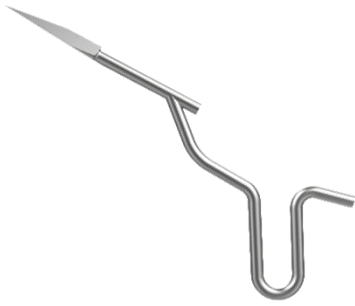
Guide Wire Holder

IS007-44



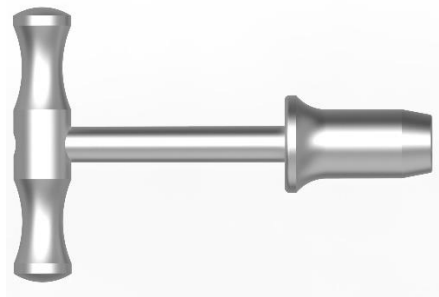
Guide Sleeve 17X3.2mm

IS007-41



Bone awl Cannulated

IS007-45



Quick Coupling T-Handle

IS007-61



Entry reamer 17mm

IS007-42



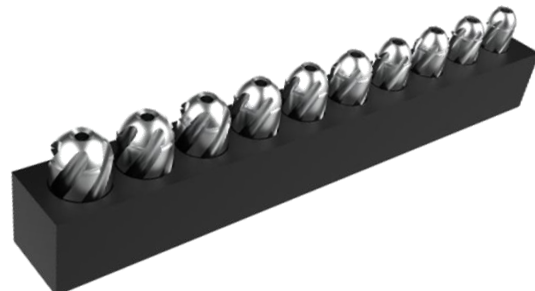
Flexible Reamer Shaft

IS007-47



Reamer Head

IS007-48 TO 57



Reamer Head Box

IS007-58



Threaded guide wire 3.2mm x 400mm

IS007-43



Guide wire reducer

IS007-60



Insertion Handle

IS007-01



Conical Bolt

IS007-02



Stopper for 11mm Reamer

IS007-39



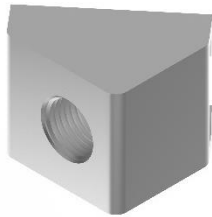
Cannulated Reamer 11mm

IS007-37



Screw Driver With Spherical Head 8mm Tip

IS007-68



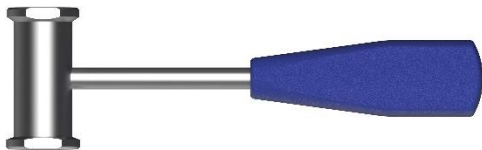
Insertion Connector

IS007-63



Insertion Connecting rod

IS007-62



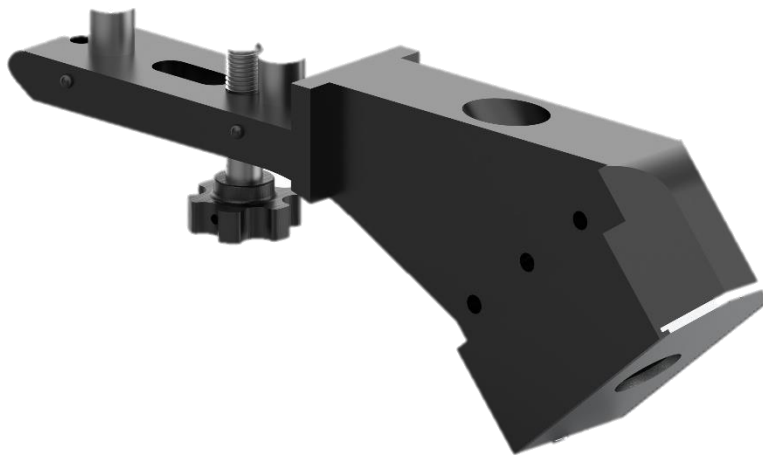
Hammer

IS007-65



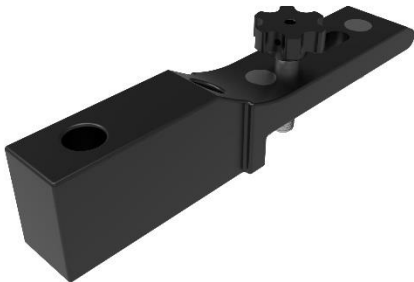
Slotted Hammer

IS007-66



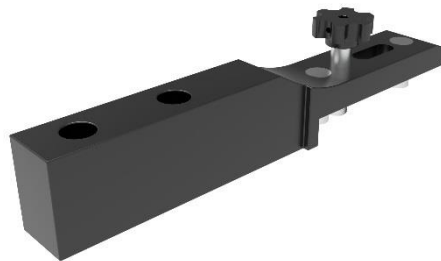
Proximal Aiming arm 130° for blade

IS007-05



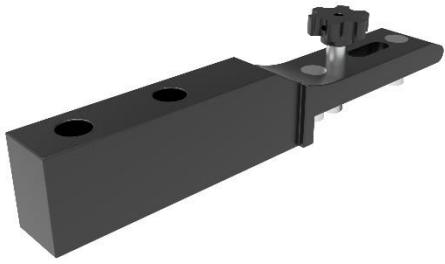
Aiming arm for dynamic/static locking
(170/200)

IS007-06



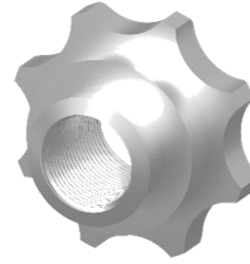
Aiming arm for dynamic/static locking
(220/240)

IS007-07



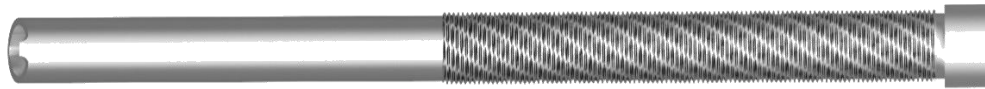
Aiming arm for Static locking

IS007-08



Buttress/Compression Nut

IS007-31



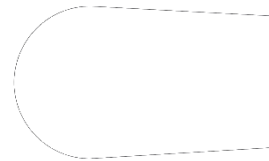
Protection Sleeve For blade 16/11mm For Blade

IS007-24



Protection Sleeve 11/8mm

IS007-18



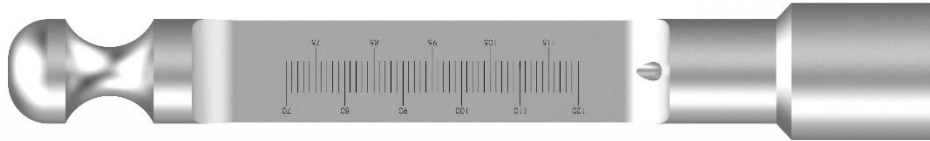
Guide Wire Bided 2.5 x 1000mm

IS007-59



Trocar For Blade 3.2mm

IS007-26



Depth Gauge For Blade

IS007-23



Impactor For Blade 4.5mm Tip

IS007-28



Key for Blade

IS007-29



Protection Sleeve 10/8mm

IS007-32



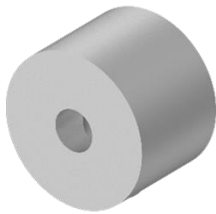
Drill Sleeve 8/4.3mm

IS007-19



Trocar 4.3mm

IS007-20



Stopper for drill bit
4.3mm

IS007-22



Drill Bit 4.3 x 300mm

IS007-21



Depth Gauge

IS007-70



Screwdriver 3.5mm Tip

IS007-67



Proximal Aiming Bar

IS007-03



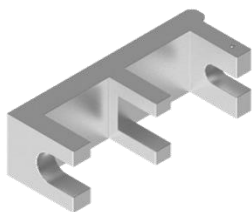
Distal Aiming Bar

IS007-10



Distal Targeter

IS007-16



E Block

IS007-11



Targeter Bolt

IS007-17



Distal Bolt

IS007-15



Proximal Bolt

IS007-04



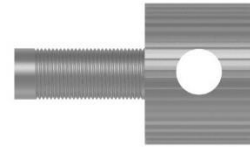
Position Rod

IS007-12



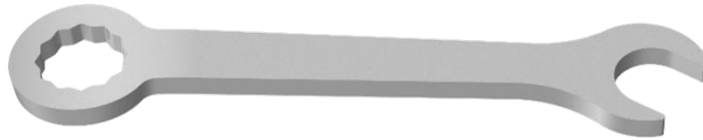
Oval Block With the round hole

IS007-13



Oval block locking Screw

IS007-14



Combination spanner for 11mm

IS007-71



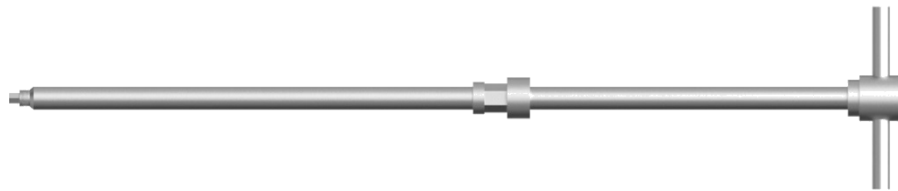
Screw Driver for cannulated cap 4mm Tip

IS007-74



Extended rod cannulated

IS007-64



Extraction For Blade

IS007-30



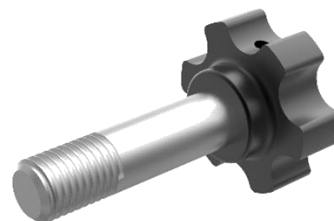
Extraction Rod for Nail

IS007-64



Tissue Protector

IS007-46



Bolt for aiming arm

IS007-09



3.0mm Allen key

IS007-73



5.0mm Allen key

IS007-72



Drill sleeve 5.2mm

IS007-34



Drill Bit 5.2mm

IS007-35



Drill Bit 5.2mm T-Type

IS007-36



Sleeve 8/10mm For Trocar

IS007-32



Trocar 8mm

IS007-33



Guide Pin with hook

IS007-76



Hammer Guide For Blade

IS007-27



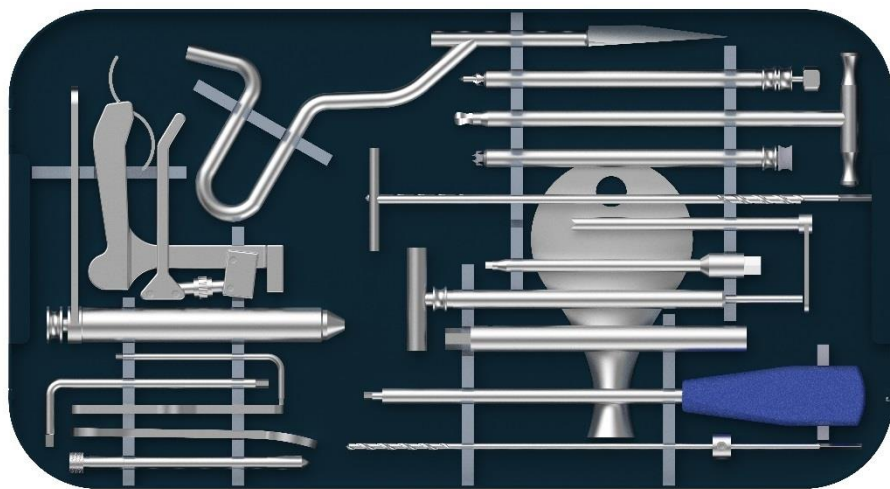
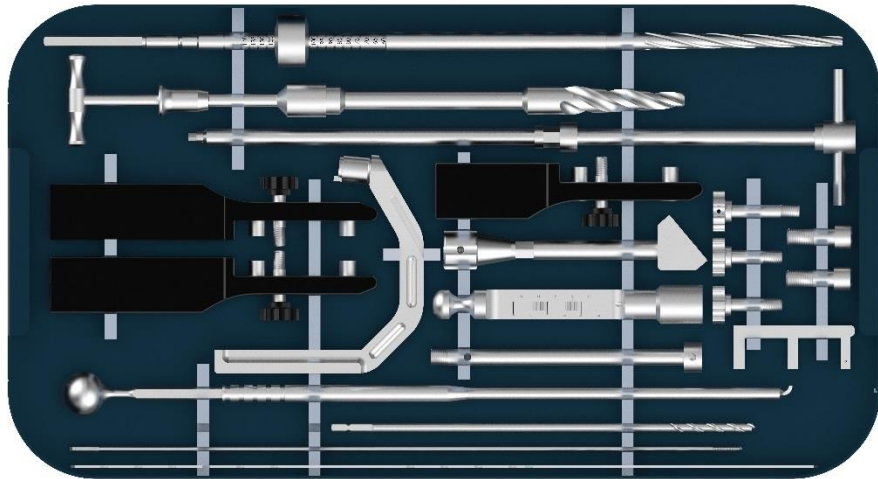
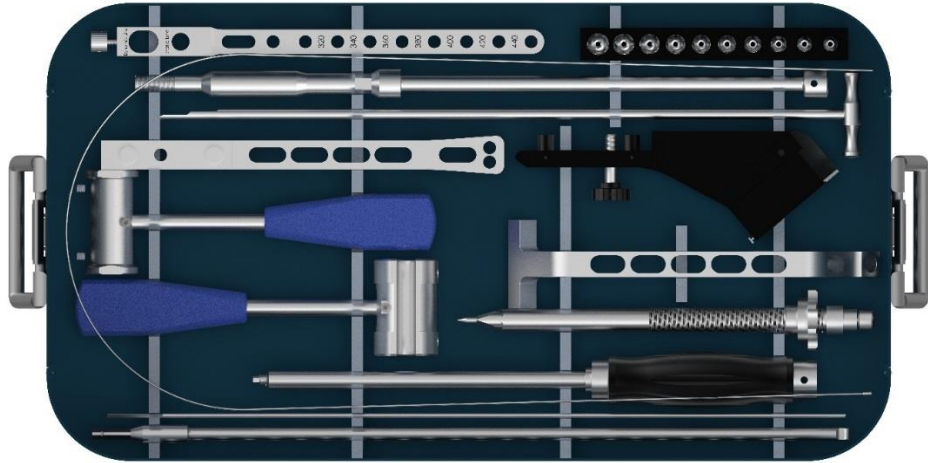
Instrument Box

IS007-77

Instrument Set Contains

SR NO	Name	Code	Qty
1	Insertion Handle	IS007-01	1
2	Conical Bolt	IS007-02	2
3	Proximal Aiming Bar	IS007-03	1
4	Proximal Bolt	IS007-04	1
5	Proximal Aiming Arm 130° for Blade	IS007-05	1
6	Aiming Arm For Dynamic/Static Locking (170/200)	IS007-06	1
7	Aiming Arm For Dynamic/Static Locking (220/240)	IS007-07	1
8	Aiming Arm For Static Locking	IS007-08	1
9	Bolt For Aiming Arm	IS007-09	4
10	Distal Aiming Bar	IS007-10	1
11	E Block	IS007-11	1
12	Position Rod	IS007-12	1
13	Oval Block With The Round Hole	IS007-13	1
14	Oval Block Locking Screw	IS007-14	1
15	Distal Bolt	IS007-15	1
16	Distal Targeter	IS007-16	1
17	Targeter Bolt	IS007-17	1
18	Protection Sleeve 11x8mm	IS007-18	2
19	Drill Sleeve 8x4.3mm	IS007-19	2
20	Trocar 4.3mm	IS007-20	1
21	Drill Bit 4.3x300mm	IS007-21	2
22	Stopper For Drill Bit 4.3mm	IS007-22	1
23	Depth Guage For Blade	IS007-23	1
24	Protection Sleeve For Blade 16X11mm	IS007-24	1
25	Drill Sleeve For Blade 11X3.2mm	IS007-25	1
26	Trocar For Blade 3.2mm	IS007-26	1
27	Hammer Guide For Blade	IS007-27	1
28	Impactor For Blade 4.5mm Tip	IS007-28	1
29	Key For Blade	IS007-29	1
30	Extractor For Blade	IS007-30	1
31	Buttress/Compression Nut	IS007-31	1
32	Protection Sleeve 10X8mm	IS007-32	1
33	Trocar 8mm	IS007-33	1
34	Drill Sleeve 8X5.2mm	IS007-34	1
35	Drill Bit 5.2x250mm	IS007-35	1
36	T-Type Drill Bit 5.2mm	IS007-36	1
37	Cannulated Reamer 11mm	IS007-37	1
38	Exntry Reamer 11mm For Blade	IS007-38	1
39	Stopper for Cannulated Reamer	IS007-39	1

40	Protection Sleeve 21X17mm	IS007-40	1
41	Guide Sleeve 17x3.2mm	IS007-41	1
42	Entry Reamer 17mm	IS007-42	1
43	Guide Wire Threaded 3.2x400mm	IS007-43	4
44	Guide Wire Holder	IS007-44	1
45	Bone Awl Cannulated	IS007-45	1
46	Tissue Protector	IS007-46	1
47	Flexible Reamer Shaft	IS007-47	1
48	Reamer Head 9.0mm	IS007-48	1
49	Reamer Head 9.5mm	IS007-49	1
50	Reamer Head 10.0mm	IS007-50	1
51	Reamer Head 10.5mm	IS007-51	1
52	Reamer Head 11.0mm	IS007-52	1
53	Reamer Head 11.5mm	IS007-53	1
54	Reamer Head 12.0mm	IS007-54	1
55	Reamer Head 12.5mm	IS007-55	1
56	Reamer Head 13.0mm	IS007-56	1
57	Reamer Head 13.5mm	IS007-57	1
58	Reamer Head Box	IS007-58	1
59	Guide Wire Bided 2.5x1000mm	IS007-59	1
60	Guide Wire Reducer	IS007-60	1
61	Quick Coupling T-Handle	IS007-61	1
62	Insertion Connecting rod	IS007-62	1
63	Insertion Connector	IS007-63	1
64	Impactor Extractor Rod	IS007-64	1
65	Hammer	IS007-65	1
66	Slotted Hammer	IS007-66	1
67	Screw Driver 3.5mm Tip	IS007-67	1
68	Screw Driver With Spherical Head 8mm Tip	IS007-68	1
69	Radiographic Scale	IS007-69	1
70	Depth Gauge	IS007-70	1
71	Combination Spanner 11mm	IS007-71	1
72	Allen Key 5.0mm	IS007-72	1
73	Allen Key 3.0mm	IS007-73	1
74	Screw Driver For Cannulated Cap 4mm Tip	IS007-74	1
75	Hexagonal Socket 11mm Cannulated	IS007-75	1
76	Guide Wire 3.0x460mm With Hook	IS007-76	1
77	Instrument Box	IS007-77	1



PFNA Short Nail Set Contains

PFNA Short NAIL			
Code for Stainless Steel	Code for Titanium	Length	Diameter
S3016.09170	T3016.09170	170mm	Ø9.0mm
S3016.10170	T3016.10170		Ø10.0mm
S3016.11170	T3016.11170		Ø11.0mm
S3016.12170	T3016.12170		Ø12.0mm
S3016.13170	T3016.13170		Ø13.0mm
S3016.14170	T3016.14170		Ø14.0mm
S3016.09200	T3016.09200	200mm	Ø9.0mm
S3016.10200	T3016.10200		Ø10.0mm
S3016.11200	T3016.11200		Ø11.0mm
S3016.12200	T3016.12200		Ø12.0mm
S3016.13200	T3016.13200		Ø13.0mm
S3016.14200	T3016.14200		Ø14.0mm
S3016.09240	T3016.09240	240mm	Ø9.0mm
S3016.10240	T3016.10240		Ø10.0mm
S3016.11240	T3016.11240		Ø11.0mm
S3016.12240	T3016.12240		Ø12.0mm
S3016.13240	T3016.13240		Ø13.0mm
S3016.14240	T3016.14240		Ø14.0mm

4.9mm Inter-Locking Screw

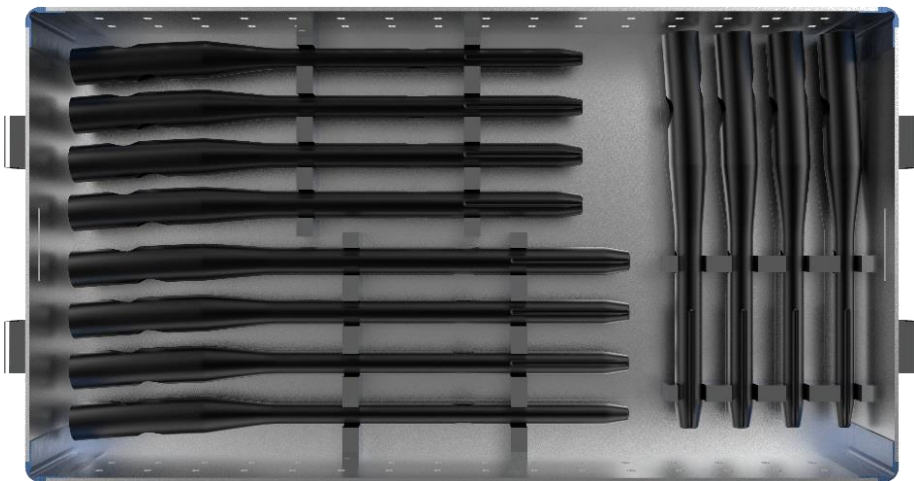
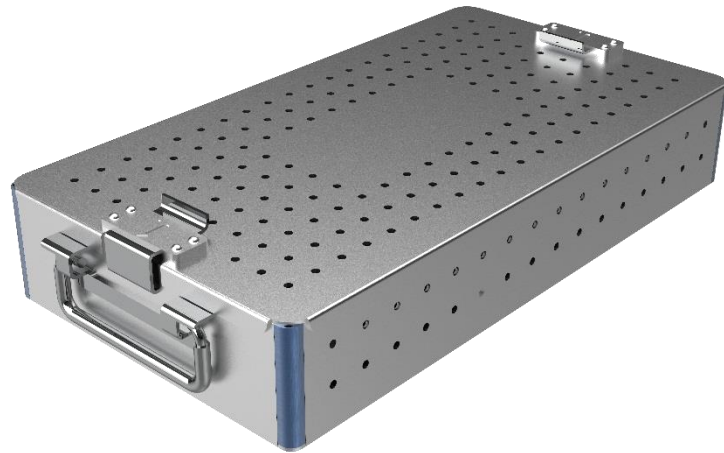
Length	Code for Stainless Steel	Code for Titanium
24mm	S1067.024	T1067.024
26mm	S1067.026	T1067.026
28mm	S1067.028	T1067.028
30mm	S1067.030	T1067.030
32mm	S1067.032	T1067.032
34mm	S1067.034	T1067.034
36mm	S1067.036	T1067.036
38mm	S1067.038	T1067.038
40mm	S1067.040	T1067.040
42mm	S1067.042	T1067.042
44mm	S1067.044	T1067.044
46mm	S1067.046	T1067.046
48mm	S1067.048	T1067.048
50mm	S1067.050	T1067.050
52mm	S1067.052	T1067.052
54mm	S1067.054	T1067.054
56mm	S1067.056	T1067.056
58mm	S1067.058	T1067.058
60mm	S1067.060	T1067.060
65mm	S1067.065	T1067.065
70mm	S1067.070	T1067.070

End Cap For P.F.N.A with Pin

Code for Stainless Steel	Code for Titanium	Length
S3018.00	T3018.00	35.0mm
S3018.05	T3018.05	40.0mm
S3018.10	T3018.10	45.0mm
S3018.15	T3018.15	50.0mm

P.F.N.A. Nail Blade

Code for Stainless Steel	Code for Titanium	Length
S3019.065	T3019.065	65mm
S3019.070	T3019.070	70mm
S3019.075	T3019.075	75mm
S3019.080	T3019.080	80mm
S3019.085	T3019.085	85mm
S3019.090	T3019.090	90mm
S3019.095	T3019.095	95mm
S3019.100	T3019.100	100mm
S3019.105	T3019.105	105mm
S3019.110	T3019.110	110mm
S3019.115	T3019.115	115mm
S3019.120	T3019.120	120mm



PFNA Nail Set Contains

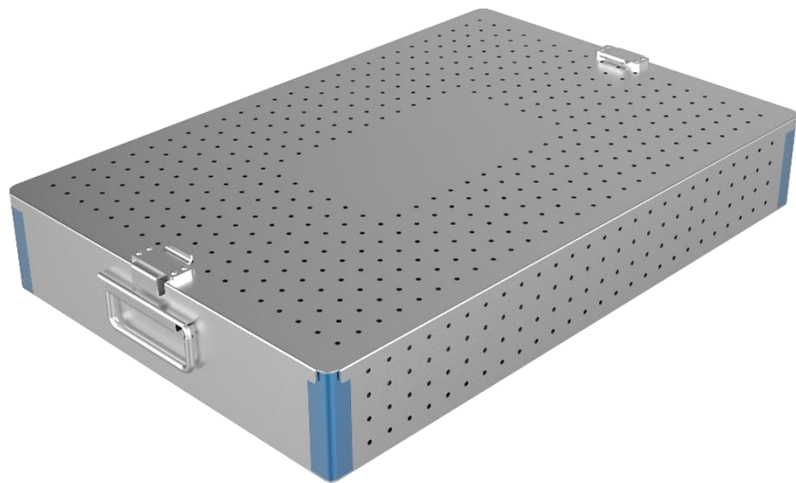
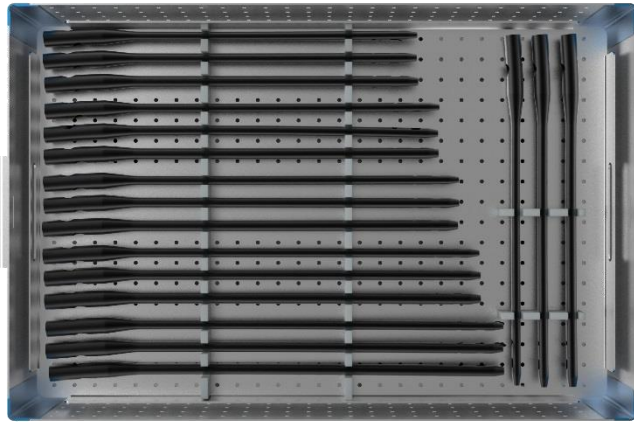
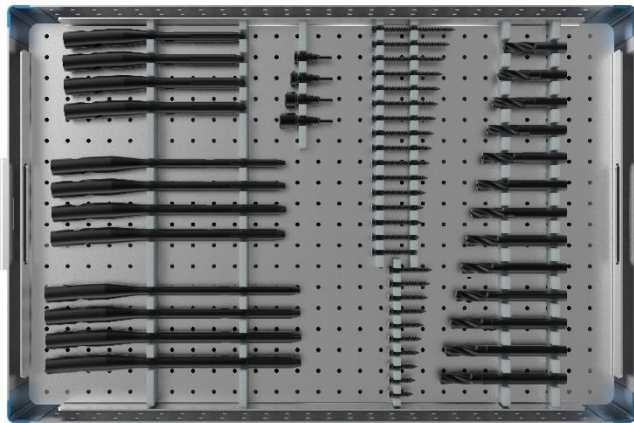
PFNA Short NAIL			
Code for Stainless Steel	Code for Titanium	Length	Diameter
S3016.09170	T3016.09170	170mm	Ø9.0mm
S3016.10170	T3016.10170		Ø10.0mm
S3016.11170	T3016.11170		Ø11.0mm
S3016.12170	T3016.12170		Ø12.0mm
S3016.13170	T3016.13170	200mm	Ø9.0mm
S3016.14170	T3016.14170		Ø10.0mm
S3016.09200	T3016.09200		Ø11.0mm
S3016.10200	T3016.10200		Ø12.0mm
S3016.11200	T3016.11200	240mm	Ø9.0mm
S3016.12200	T3016.12200		Ø10.0mm
S3016.13200	T3016.13200		Ø11.0mm
S3016.14200	T3016.14200		Ø12.0mm

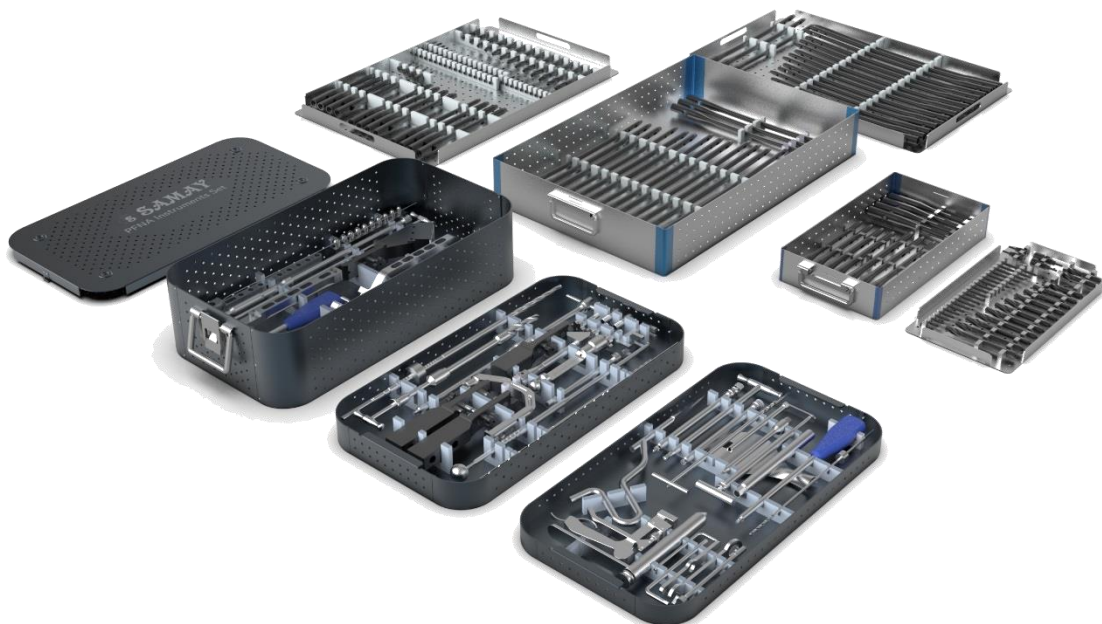
4.9mm Inter-Locking Screw		
Length	Code for Stainless Steel	Code for Titanium
24mm	S1067.024	T1067.024
26mm	S1067.026	T1067.026
28mm	S1067.028	T1067.028
30mm	S1067.030	T1067.030
32mm	S1067.032	T1067.032
34mm	S1067.034	T1067.034
36mm	S1067.036	T1067.036
38mm	S1067.038	T1067.038
40mm	S1067.040	T1067.040
42mm	S1067.042	T1067.042
44mm	S1067.044	T1067.044
46mm	S1067.046	T1067.046
48mm	S1067.048	T1067.048
50mm	S1067.050	T1067.050
52mm	S1067.052	T1067.052
54mm	S1067.054	T1067.054
56mm	S1067.056	T1067.056
58mm	S1067.058	T1067.058
60mm	S1067.060	T1067.060
60mm	S1067.065	T1067.065
62mm	S1067.070	T1067.070
64mm	S1067.024	T1067.024
66mm	S1067.026	T1067.026
68mm	S1067.028	T1067.028
70mm	S1067.030	T1067.030
75mm	S1067.076	T1067.076
80mm	S1067.080	T1067.080

End Cap For P.F.N.A with Pin		
Code for Stainless Steel	Code for Titanium	Length
S3018.00	T3018.00	35.0mm
S3018.05	T3018.05	40.0mm
S3018.10	T3018.10	45.0mm
S3018.15	T3018.15	50.0mm

P.F.N.A. Nail Blade		
Code for Stainless Steel	Code for Titanium	Length
S3019.065	T3019.065	65mm
S3019.070	T3019.070	70mm
S3019.075	T3019.075	75mm
S3019.080	T3019.080	80mm
S3019.085	T3019.085	85mm
S3019.090	T3019.090	90mm
S3019.095	T3019.095	95mm
S3019.100	T3019.100	100mm
S3019.105	T3019.105	105mm
S3019.110	T3019.110	110mm
S3019.115	T3019.115	115mm
S3019.120	T3019.120	120mm

P.F.N.A. Long Right				P.F.N.A. Long Left			
Code for Stainless Steel	Code for Titanium	Length	Dia	Code for Stainless Steel	Code for Titanium	Length	Dia.
S3016R.09340	T3016R.09340	340mm	Ø9.0mm	S3016L.09340	T3016L.09340	340mm	Ø9.0mm
S3016R.09360	T3016R.09360	360mm		S3016L.09360	T3016L.09360	360mm	
S3016R.09380	T3016R.09380	380mm		S3016L.09380	T3016L.09380	380mm	
S3016R.09400	T3016R.09400	400mm		S3016L.09400	T3016L.09400	400mm	
S3016R.09420	T3016R.09420	420mm		S3016L.09420	T3016L.09420	420mm	
S3016R.09440	T3016R.09440	440mm		S3016L.09440	T3016L.09440	440mm	
S3016R.10340	T3016R.10340	340mm	Ø10.0mm	S3016L.10340	T3016L.10340	340mm	Ø10.0mm
S3016R.10360	T3016R.10360	360mm		S3016L.10360	T3016L.10360	360mm	
S3016R.10380	T3016R.10380	380mm		S3016L.10380	T3016L.10380	380mm	
S3016R.10400	T3016R.10400	400mm		S3016L.10400	T3016L.10400	400mm	
S3016R.10420	T3016R.10420	420mm		S3016L.10420	T3016L.10420	420mm	
S3016R.10440	T3016R.10440	440mm		S3016L.10440	T3016L.10440	440mm	
S3016R.11340	T3016R.11340	340mm	Ø11.0mm	S3016L.11340	T3016L.11340	340mm	Ø11.0mm
S3016R.11360	T3016R.11360	360mm		S3016L.11360	T3016L.11360	360mm	
S3016R.11380	T3016R.11380	380mm		S3016L.11380	T3016L.11380	380mm	
S3016R.11400	T3016R.11400	400mm		S3016L.11400	T3016L.11400	400mm	
S3016R.11420	T3016R.11420	420mm		S3016L.11420	T3016L.11420	420mm	
S3016R.11440	T3016R.11440	440mm		S3016L.11440	T3016L.11440	440mm	
S3016R.12340	T3016R.12340	340mm	Ø12.0mm	S3016L.12340	T3016L.12340	340mm	Ø12.0mm
S3016R.12360	T3016R.12360	360mm		S3016L.12360	T3016L.12360	360mm	
S3016R.12380	T3016R.12380	380mm		S3016L.12380	T3016L.12380	380mm	
S3016R.12400	T3016R.12400	400mm		S3016L.12400	T3016L.12400	400mm	
S3016R.12420	T3016R.12420	420mm		S3016L.12420	T3016L.12420	420mm	
S3016R.12440	T3016R.12440	440mm		S3016L.12440	T3016L.12440	440mm	





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