



# **Surgical Technique**

Retrograde Femur Nail

## about us

Auxein Medical is an integrated, research based, orthopaedic Implants & instruments manufacturing company, producing a wide range of quality, affordable generic implants, trusted by healthcare professionals and patients across geographies. It is the Company's constant endeavor to provide a wide basket of generic and our innovator products that exceed the highest expectations of customers in term of quality and safety. The company has world-class manufacturing unit established in india and serves customers in over 75 countries worldwide.

### **Our Achievements**











#### **INTRODUCTION**

**AUXEIN'S** Retrograde Femur Nail provides xation Āin the cases of fractures above the knee joint or multi-fragment fractures of condyle. Retrograde Femur Nail system provides nail with diameters 9.5mm, 10mm, 11mm & 12mm and length between 180mm and 360mm





#### Indications:

 $The \,Retrograde \,Femur \,Nail\,is\,Indicated\,for\,use\,in\,case\,of:$ 

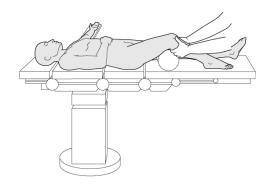
- $Inter\, and\, supra\, condylar\, Femur\, Fracture$
- $Supra\,Condylar\,fracture\,with\,diaphyseal\,extension$



02

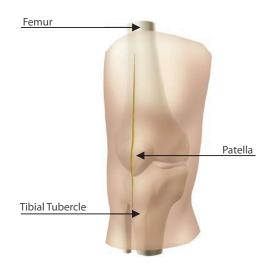


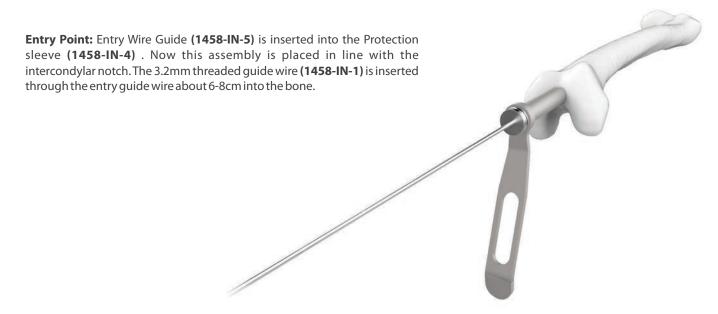
**Patient Positioning:** Place the patient in the supine position on a fracture or radiolucent imaging table. Place the knee in approximately 45 degrees of exion. ĀUse manual traction, a femoral distractor or an external fixator to reduce severely displaced fractures and maintain length. Special attention is needed to maintain proper length when using a retrograde approach to treat a comminuted fracture.



**Approach:** Approach the distal femur through a midline longitudinal incision between the patella and the tibial tubercle. Obtain access to the intercondylar notch by splitting the tendon longitudinally or displacing the tendon laterally.

Alternative approach: Approach the distal femur through a longitudinal incision from the superior pole of the patella to the tibial tubercle, placed along the medial border of the patellar tendon. Expose the intercondylar notch by using retractors to reflect the patellar tendon laterally or perform the procedure percutaneously.







Remove the Entry Wire Guide (1458-IN-5) and insert the Entry Reamer (1458-IN-6) protection sleeve (1458-IN-4) along the threaded guide wire (1458-IN-1). Ream along the guide wire in order to get access to the intramedullary canal. Now remove the Entry reamer and the threaded guide wire along with protection sleeve.

As an alternate to Entry Reamer, the Cannulated awl (1458-IN-7) could also be used to access the intramedullary canal.



**Guide wire insertion:** The Reducer **(1458-IN-44)** is advanced into the intramedullary canal past the fracture site for the reduction. The curved end of the reducer helps in guiding the guide wire with olive **(1458-IN-45)** to the proximal region of the femur. The guide wire with olive is inspected in both AP and lateral views for its nal Aplacement in the femur bone using the image intensifier. Finally the reducer is removed from the bone.

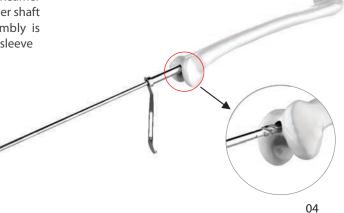


**Nail Measurement:** The Radiographic ruler is used to measure the size of the desired nail to be inserted. Place the Radiographic ruler in line with the femur bone. Now move the Carm over it and check the required nail length in AP view according to the markings on the ruler.

To measure the required diameter of the nail, the radiographic ruler is placed perpendicular to the femoral axis so that the diameter gauge is located over the intramedullary canal. Now from gauge choose the largest diameter nail that ts Äinto the intramedullary canal.



**Reaming:** Ream the intramedullary canal with exible Āreamers in 0.5mm steps to 1.0mm more than the selected nail diameter. The suitable Reamer Head (1458-IN-34 to 1458-IN-42) is attached to the flexible reamer shaft (1458-IN-46) to create a Flexible reamer assembly. The assembly is inserted along the guide wire (1458-IN-45) through the Protection sleeve (1458-IN-4) and the reaming is performed.





**Nail-Jig Assembly:** Align the nail slots with the slots on the Insertion Handle (1458-IN-8). Now insert the nail holding bolt (1458-IN-26) into the nail through the Insertion Handle and rotate it until the threads on the locking bolt sits and lock with the threads of the nail.



**Nail Insertion:** Before inserting the nail into the bone, it is important to check the alignment of the holes on nail with the holes in the aiming devices by inserting the Outer sleeve

(1458-IN-47) through the holes of aiming devices and verifying its alignment.

\*Note: The technique for using the aiming devices is mentioned later in the surgical technique according to the requirements of each aiming device.



After verifying all the holes alignment, remove the aiming devices. Insert the nail and Insertion Handle assembly along the guide wire (1458-IN-45) and attach the impactor (1458-IN-28) to the Insertion Handle (1458-IN-8). Now the combined hammer (1458-IN-55) is used to gradually tap on the impactor so that the nail is inserted and sits properly into the intramedullary canal upto the required depth. Finally the guide wire is removed.





**Proximal Locking:** Attach the Proximal/Distal Aiming attachment (1458-IN-10) to the Insertion Handle (1458-IN-8) and x Āt with the locking bolt on the Proximal/Distal Aiming attachment. Further attach the Proximal Aiming Arm (1458-IN-11) to the Proximal/Distal Aiming attachment in order to aim at the Proximal threaded holes of the nail. The outer sleeve (1458-IN-47) is inserted through Proximal Aiming Arm in which the sleeve for drill bit (1458-IN-48) is further inserted. Through the sleeve for drill bit, a long trocar (1458-IN-49) is inserted in order to make a small incision at the site of screw entry. Now both the sleeves are pushed through the incision hole until it sits on the bone.



Remove the Trocar (1458-IN-49) and insert 4.0mm drill bit (1458-IN-50) to drill a hole across both the cortices through the threaded hole in the nail.



Insert the Depth Gauge (1458-IN-3) through the Outer Sleeve (1458-IN-47) and measure the required locking bolt length from the readings on the gauge.

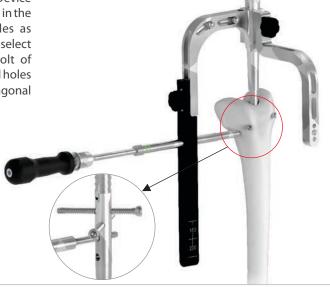




Attach the 5.0mm locking bolt of required length to the Hexagonal Wrench (1458-IN-54) using the threads on the wrench. Now attach the assembly to the handle with quick coupling (1458-IN-43) and insert the locking bolt into the predrill hole through the sleeve (1458-IN-47). Similarly insert the second locking bolt through the second threaded hole in the nail using the second hole in the Proximal Aiming Arm (1458-IN-11).



The Proximal/Distal short nail Aiming Device (1458-IN-13) is attached to the Insertion Handle (1458-IN-8). Two distal holes on the Aiming Device are used for drilling the holes along the two distal non-threaded holes in the nail using the similar technique as used for the threaded holes as mentioned above. Again, the Depth Gauge (1458-IN-3) is used to select the locking bolt of appropriate length. The selected 5.0mm bolt of appropriate length is nally Āinserted into the two distal non-threaded holes through sleeve (1458-IN-47) for locking screw using the Hexagonal Wrench (1458-IN-54).



**Distal Locking:** The Proximal Aiming Arm (1458-IN-11) is removed once the distal screws are fixed into the nail.

#### For 180mm and 200mm Nail:

For drilling and inserting proximal 5.0mm bolts in 180 or 200mm nail, the Proximal/Distal short nail Aiming Device (1458-IN-13) is used. There is marking on the Aiming Device clearly indicating the two aiming holes towards the two Distal holes for both 180mm as well as 200mm nail. The same process of drilling and inserting the locking bolt is used as discussed in the distal locking method. The image indicates the insertion of locking bolt for 180mm nail.





#### For Nail length more than 200mm:

The Distal Arm Attachment for Distal Aiming Device (1458-IN-12) is attached to the Proximal/Distal Aiming attachment (1458-IN-10). Now the Distal Aiming Device for Long Nail (1458-IN-9) is attached to the Distal Arm Attachment for Distal Aiming Device. The markings on the proximal aiming device vary from 300mm to 360mm. Now depending on the selected nail size, the pin of the Distal Arm Attachment for Distal Aiming Device is aligned with the proximal aiming device hole. The proximal aiming device is fixed in place by inserting the Distal aiming device bolt (1458-IN-14) through the aligned holes of both Distal Arm Attachment for Distal Aiming Device and Distal aiming device. The Distal arm (1458-IN-18) is attached to the groove on the proximal aiming device and held in place by screwing the locking bolt for Distal arm (1458-IN-19).



The Stabilizing Rod Guide (1458-IN-15) is inserted into the third hole from the Distal side of the Distal aiming device (1458-IN-9). First, the drill for stabilizing rod (1458-IN-29) is passed through the stabilizing rod guide and a hole is drilled until it comes in contact with the nail and the drill is removed.



The Stabilizing Rod (1458-IN-16) is used to push and align the Distal end of nail in position. It is passed through the stabilizing rod guide (1458-IN-15) such that it comes in contact with a groove cut on the nail. Now the stabilizing spacer (1458-IN-17) is inserted along the intersection of the Distal aiming device (1458-IN-9) and the stabilizing rod guide such that it holds the stabilizing rod in place.





The Rod with Threads guide (1458-IN-20) is inserted through the hole in Distal arm (1458-IN-18) such that it aligns with the threaded hole in the Distal part of nail. The Lateral Stabilizing rod with threads (1458-IN-21 to 1458-IN-24) of suitable diameter according to the selected nail size is selected. The Handle with quick coupling (1458-IN-43) is assembled with the lateral stabilizing rod with threads. After drilling the bone, it is then passed through the Rod with threads guide and screwed into the nail threaded hole so that the nail is in correct position for insertion of the Distal screws. Finally the rod with thread spacer (1458-IN-25) is used to hold the lateral stabilizing rod in correct position.



Now that the nail is stabilized from the Distal end, the two 5.0mm locking bolt can be inserted into two Distal non threaded holes using the two holes on the Distal aiming device **(1458-IN-9)** as the guide with technique similar to one used for Proximal locking.



Once these two locking bolts are inserted, the lateral stabilizing rod with threads (1458-IN-21 to 1458-IN-24) is removed and the 5.0mm locking bolt is now inserted in the threaded Distal hole of the nail. As all the 5.0mm locking bolts have been inserted, so now all aiming devices are removed. The Insertion Handle (1458-IN-8) is also nally Āremoved by unscrewing the nail holding bolt (1458-IN-26).





**End Cap Insertion:** The end cap **(1458-01)** is attached to the hexagonal wrench **(1458-IN-54)** and is nally Ainserted and locked into the distal open end of the nail.



Nail Removal: There are two approaches of removing the nail listed below:

• First all the locking bolts and the end cap is removed and the Hammer guide (1458-IN-30) is screwed into the distal open end of the nail. The combined Hammer (1458-IN-55) is placed in line with the hammer guide as shown in the image. Now with reverse hammering, the nail is removed.



According to second approach, rst Āall the locking bolts and the end cap is removed and then the Insertion Handle (1458-IN-8) is attached to the nail. The impactor (1458-IN-28) is screwed on top of the Nail holding guide and on top of which the hammer guide (1458-IN-30) is attached. The combined hammer (1458-IN-55) is placed in line with the hammer guide and with reverse hammering, the nail is removed.





## **Retrograde Femur Nail**

|       | l      | I               | l               |
|-------|--------|-----------------|-----------------|
| Ø Dia | Length | Stainless Steel | Titanium        |
| 9.5mm | 180mm  | 1458-9.5-180    | TI-1458-9.5-180 |
| 9.5mm | 200mm  | 1458-9.5-200    | TI-1458-9.5-200 |
| 9.5mm | 300mm  | 1458-9.5-300    | TI-1458-9.5-300 |
| 9.5mm | 320mm  | 1458-9.5-320    | TI-1458-9.5-320 |
| 9.5mm | 340mm  | 1458-9.5-340    | TI-1458-9.5-340 |
| 9.5mm | 360mm  | 1458-9.5-360    | TI-1458-9.5-360 |
| 10mm  | 180mm  | 1458-10-180     | TI-1458-10-180  |
| 10mm  | 200mm  | 1458-10-200     | TI-1458-10-200  |
| 10mm  | 300mm  | 1458-10-300     | TI-1458-10-300  |
| 10mm  | 320mm  | 1458-10-320     | TI-1458-10-320  |
| 10mm  | 340mm  | 1458-10-340     | TI-1458-10-340  |
| 10mm  | 360mm  | 1458-10-360     | TI-1458-10-360  |
| 11mm  | 180mm  | 1458-11-180     | TI-1458-11-180  |
| 11mm  | 200mm  | 1458-11-200     | TI-1458-11-200  |
| 11mm  | 300mm  | 1458-11-300     | TI-1458-11-300  |
| 11mm  | 320mm  | 1458-11-320     | TI-1458-11-320  |
| 11mm  | 340mm  | 1458-11-340     | TI-1458-11-340  |
| 11mm  | 360mm  | 1458-11-360     | TI-1458-11-360  |
| 12mm  | 180mm  | 1458-12-180     | TI-1458-12-180  |
| 12mm  | 200mm  | 1458-12-200     | TI-1458-12-200  |
| 12mm  | 300mm  | 1458-12-300     | TI-1458-12-300  |
| 12mm  | 320mm  | 1458-12-320     | TI-1458-12-320  |
| 12mm  | 340mm  | 1458-12-340     | TI-1458-12-340  |
| 12mm  | 360mm  | 1458-12-360     | TI-1458-12-360  |



## **5.0mm Locking Screw For Retrograde Femur Nail**

|        | 3               | 3           |
|--------|-----------------|-------------|
| Length | Stainless Steel | Titanium    |
| 32mm   | 1458-032        | TI-1458-032 |
| 34mm   | 1458-034        | TI-1458-034 |
| 36mm   | 1458-036        | TI-1458-036 |
| 38mm   | 1458-038        | TI-1458-038 |
| 40mm   | 1458-040        | TI-1458-040 |
| 42mm   | 1458-042        | TI-1458-042 |
| 44mm   | 1458-044        | TI-1458-044 |
| 46mm   | 1458-046        | TI-1458-046 |
| 48mm   | 1458-048        | TI-1458-048 |
| 50mm   | 1458-050        | TI-1458-050 |
| 52mm   | 1458-052        | TI-1458-052 |
| 54mm   | 1458-054        | TI-1458-054 |
| 56mm   | 1458-056        | TI-1458-056 |
| 58mm   | 1458-058        | TI-1458-058 |
| 60mm   | 1458-060        | TI-1458-060 |
| 62mm   | 1458-062        | TI-1458-062 |
| 64mm   | 1458-064        | TI-1458-064 |
| 66mm   | 1458-066        | TI-1458-066 |
| 68mm   | 1458-068        | TI-1458-068 |
| 70mm   | 1458-070        | TI-1458-070 |
| 72mm   | 1458-072        | TI-1458-072 |
| 74mm   | 1458-074        | TI-1458-074 |
| 76mm   | 1458-076        | TI-1458-076 |
| 78mm   | 1458-078        | TI-1458-078 |
| 80mm   | 1458-080        | TI-1458-080 |



## **End Cap For Retrograde Femur Nail**

| Stainless Steel | Titanium   |
|-----------------|------------|
| 1458-01         | TI-1458-01 |





## 1-019 Implant Box for Retrograde Femur Nail





Tray 1



| Dia    | Length         | Qty  |
|--------|----------------|------|
| Ø9.5mm | 180mm to 360mm | 1pcs |

Stainless Steel or Titanium Implants can be placed as per requirement

Tray 2



| Dia   | Length         | Qty  |
|-------|----------------|------|
| Ø10mm | 180mm to 360mm | 1pcs |

Stainless Steel or Titanium Implants can be placed as per requirement

Tray 3



| Dia   | Length         | Qty  |
|-------|----------------|------|
| Ø11mm | 180mm to 360mm | 1pcs |

Stainless Steel or Titanium Implants can be placed as per requirement

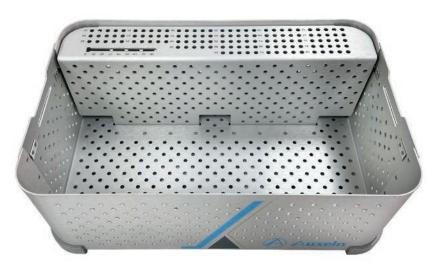
Tray 4



| Dia   | Length         | Qty  |
|-------|----------------|------|
| Ø12mm | 180mm to 360mm | 1pcs |

Stainless Steel or Titanium Implants can be placed as per requirement





## Ø5.0mm Locking Screw For Retrograde Femur Nail

| Dia    | Length       | Qty  |
|--------|--------------|------|
| Ø5.0mm | 32mm to 80mm | 5pcs |

Stainless Steel or Titanium Implants can be placed as per requirement



### End Cap For Retrograde Femur Nail

**Qty** 2pcs

Stainless Steel or Titanium Implants can be placed as per requirement



Guide Wire with Threaded Tip  $\emptyset$ 3.2mm x Thread Length 15mm x Length 400mm 1458-IN-1 1458-IN-2 Tissue Protector for Retrograde Nail Depth Gauge measuring upto 120mm for Retrograde Nail 1458-IN-3 1458-IN-4 Protection Sleve 17/14mm For Entry Reamer/Wire Guide for Retrograde Nail 1458-IN-5 Entry Wire Guide Ø14mm for 3.2mm Guide Wire - Retrograde Nail Entry Reamer Ø13.5mm for Retrograde Nail 1458-IN-6



**1458-IN-7** Cannulated Awl Ø13.5mm for Retrograde Nail



**1458-IN-8** Insertion Handle for Retrograde Nail



**1458-IN-9** Distal Aiming Device for Long Retrograde Nail



**1458-IN-10** Proximal/Distal Aiming Attachment for Retrograde Nail



**1458-IN-11** Proximal Aiming Arm for Retrograde Nail



**1458-IN-12** Distal Arm Attachment for Distal Aiming Device - Retrograde Nail





**1458-IN-13** Proximal/ Distal Short Nail Aiming Device for Retrograde Nail



**1458-IN-14** Distal Aiming Device Bolt for Retrograde Nail



**1458-IN-15** Stabilizing Rod Guide Ø10/8.0mm for Retrograde Nail



**1458-IN-16** Stabilizing Rod With Quick Coupling End for Retrograde Nail



**1458-IN-17** Stabilizing Spacer for Retrograde Nail



**1458-IN-18** Distal Arm for Retrograde Nail





**1458-IN-19** Locking Bolt For Distal Arm for Retrograde Nail



**1458-IN-20** Rod With Thread Guide 11/8.0mm for Retrograde Nail



**1458-IN-21** Threaded Lateral Stabilizing Rod with Quick Coupling End Ø9.5mm, for Retrograde Nail



**1458-IN-22** Threaded Lateral Stabilizing Rod with Quick Coupling End Ø10mm, for Retrograde Nail



1458-IN-23 Threaded Lateral Stabilizing Rod with Quick Coupling End Ø11mm, for Retrograde Nail



1458-IN-24 Threaded Lateral Stabilizing Rod with Quick Coupling End Ø12mm, for Retrograde Nail





**1458-IN-25** Stabilizing Spacer for Threaded Rod, for Retrograde Nail



**1458-IN-26** Nail Holding Bolt for Retrograde Nail



**1458-IN-27** Allen key, Hex 5.0mm for Retrograde Nail



**1458-IN-28** Impactor For Guide Handle for Retrograde Nail



**1458-IN-29** Drill For Stabilizing Rod with Quick Coupling End for Retrograde Nail



**1458-IN-30** Hammer Guide for Retrograde Nail





**1458-IN-31** Extraction Screw for Retrograde Nail



**1458-IN-32** Trocar Nail Ø3.2mm for Retrograde Nail



**1458-IN-33** Position Rod Ø3.8mm x Length 260mm, for Retrograde Nail



#### **Reamer Head**

| Code       | Dia     | Code       | Dia     |
|------------|---------|------------|---------|
| 1458-IN-34 | Ø9mm    | 1458-IN-39 | Ø11.5mm |
| 1458-IN-35 | Ø9.5mm  | 1458-IN-40 | Ø12mm   |
| 1458-IN-36 | Ø10mm   | 1458-IN-41 | Ø12.5mm |
| 1458-IN-37 | Ø10.5mm | 1458-IN-42 | Ø13mm   |
| 1458-IN-38 | Ø11mm   |            |         |



**1458-IN-43** Handle with Quick Coupling for Retrograde Nail





**1458-IN-44** Reducer for Retrograde Nail



**1458-IN-45** Guide Wire with Olive Ø2.5mm x Length 1000mm x Olive Ø3.8mm



**1458-IN-46** Flexible Reamer Shaft with AO Coupling, for Retrograde Nail



**1458-IN-47** Outer Sleeve 11/8mm for Retrograde Nail



**1458-IN-48** Cannulated Sleeve for Drill Bit 8/4mm for Retrograde Nail



**1458-IN-49** Long Trocar Ø4.0mm x Length 205mm for Retrograde Nail





| 1458-IN-50 | Drill Bit Plain Shank/Jacob Chuck End Ø4.0mm x Length 320mm, for Retrograde Nail             |
|------------|--|
| 1458-IN-51 | Stopper for Drill Bit Ø4.0mm, for Retrograde Nail  |
| 1458-IN-52 | Locating Pin Ø4.0mm x Length 320mm, for Retrograde Nail                                      |
| 1458-IN-53 | Reamer For Lateral Cortex with Quick Coupling End for Retrograde Nail                        |
| 1458-IN-54 | Hexagonal Wrench, Hex 4.5mm, for Retrograde Nail   |
| 1458-IN-60 | Threaded Trocar For Hexagonal Wrench Ø2.0mm x Thread 4mm x Length 267mm, for Retrograde Nail |



**1458-IN-55** Combined Hammer for Retrograde Nail



**1458-IN-56** Combined Wrench 11mm for Retrograde Nail



**1458-IN-57** L Handle Pin Wrench Ø4.5mm for Impactor - Retrograde Nail



**1458-IN-61** Instrument Trays for Retrograde Nailing Instrument Set



**1458-IN-59** Container For Retrograde Nailing Instrument Set





**INS-1458** Retrograde Nail Instrument Set





### **INS-1458** Retrograde Nail Instrument Set

| Code       | Set Consisting of  | Units |
|------------|--|-------|
| 1458-IN-1  | Guide Wire with Threaded Tip Ø3.2mm x Thread Length 15mm x Length 400mm              | 2     |
| 1458-IN-2  | Tissue Protector for Retrograde Nail   | 1     |
| 1458-IN-3  | Depth Gauge measuring upto 120mm for Retrograde Nail                                 | 1     |
| 1458-IN-4  | Protection Sleve 17/14mm For Entry Reamer/Wire Guide for Retrograde Nail             | 1     |
| 1458-IN-5  | Entry Wire Guide Ø14mm for 3.2mm Guide Wire - Retrograde Nail                        | 1     |
| 1458-IN-6  | Entry Reamer Ø13.5mm for Retrograde Nail   | 1     |
| 1458-IN-7  | Cannulated Awl Ø13.5mm for Retrograde Nail   | 1     |
| 1458-IN-8  | Insertion Handle for Retrograde Nail   | 1     |
| 1458-IN-9  | Distal Aiming Device for Long Retrograde Nail  | 1     |
| 1458-IN-10 | Proximal/Distal Aiming Attachment for Retrograde Nail                                | 1     |
| 1458-IN-11 | Proximal Aiming Arm for Retrograde Nail  | 1     |
| 1458-IN-12 | Distal Arm Attachment for Distal Aiming Device - Retrograde Nail                     | 1     |
| 1458-IN-13 | Proximal/ Distal Short Nail Aiming Device for Retrograde Nail                        | 1     |
| 1458-IN-14 | Distal Aiming Device Bolt for Retrograde Nail  | 2     |
| 1458-IN-15 | Stabilizing Rod Guide Ø10/8.0mm for Retrograde Nail                                  | 1     |
| 1458-IN-16 | Stabilizing Rod With Quick Coupling End for Retrograde Nail                          | 1     |
| 1458-IN-17 | Stabilizing Spacer for Retrograde Nail   | 1     |
| 1458-IN-18 | Distal Arm for Retrograde Nail   | 1     |
| 1458-IN-19 | Locking Bolt For Distal Arm for Retrograde Nail                                      | 1     |
| 1458-IN-20 | Rod With Thread Guide 11/8.0mm for Retrograde Nail                                   | 1     |
| 1458-IN-21 | Threaded Lateral Stabilizing Rod with Quick Coupling End Ø9.5mm, for Retrograde Nail | 1     |
| 1458-IN-22 | Threaded Lateral Stabilizing Rod with Quick Coupling End Ø10mm, for Retrograde Nail  | 1     |
| 1458-IN-23 | Threaded Lateral Stabilizing Rod with Quick Coupling End Ø11mm, for Retrograde Nail  | 1     |
| 1458-IN-24 | Threaded Lateral Stabilizing Rod with Quick Coupling End Ø12mm, for Retrograde Nail  | 1     |
| 1458-IN-25 | Stabilizing Spacer for Threaded Rod, for Retrograde Nail                             | 1     |
| 1458-IN-26 | Nail Holding Bolt for Retrograde Nail  | 1     |
| 1458-IN-27 | Allen key, Hex 5.0mm for Retrograde Nail   | 1     |
| 1458-IN-28 | Impactor For Guide Handle for Retrograde Nail  | 1     |
| 1458-IN-29 | Drill For Stabilizing Rod with Quick Coupling End for Retrograde Nail                | 1     |
| 1458-IN-30 | Hammer Guide for Retrograde Nail   | 1     |
| 1458-IN-31 | Extraction Screw for Retrograde Nail   | 1     |
| 1458-IN-32 | Trocar Nail Ø3.2mm for Retrograde Nail   | 1     |
| 1458-IN-33 | Position Rod Ø3.8mm x Length 260mm, for Retrograde Nail                              | 1     |
| 1458-IN-34 | Reamer Head Ø9.0mm for Retrograde Nail   | 1     |
| 1458-IN-35 | Reamer Head Ø9.5mm for Retrograde Nail   | 1     |
| 1458-IN-36 | Reamer Head Ø10.0mm for Retrograde Nail  | 1     |



| Code       | Set Consisting of   | Units               |
|------------|---|---------------------|
| 1458-IN-37 | Reamer Head Ø10.5mm for Retrograde Nail   | 1                   |
| 1458-IN-38 | Reamer Head Ø11.0mm for Retrograde Nail   | 1                   |
| 1458-IN-39 | Reamer Head Ø11.5mm for Retrograde Nail   | 1                   |
| 1458-IN-40 | Reamer Head Ø12.0mm for Retrograde Nail   | 1                   |
| 1458-IN-41 | Reamer Head Ø12.5mm for Retrograde Nail   | 1                   |
| 1458-IN-42 | Reamer Head Ø13.0mm for Retrograde Nail   | 1                   |
| 1458-IN-43 | Handle with Quick Coupling for Retrograde Nail                                    | 1                   |
| 1458-IN-44 | Reducer for Retrograde Nail   | 1                   |
| 1458-IN-45 | Guide Wire with Olive Ø2.5mm x Length 1000mm x Olive Ø3.8mm                       | 1                   |
| 1458-IN-46 | Flexible Reamer Shaft with AO Coupling, for Retrograde Nail                       | 1                   |
| 1458-IN-47 | Outer Sleeve 11/8mm for Retrograde Nail   | 2                   |
| 1458-IN-48 | Cannulated Sleeve for Drill Bit 8/4mm for Retrograde Nail                         | 2                   |
| 1458-IN-49 | Long Trocar Ø4.0mm x Length 205mm for Retrograde Nail                             | 1                   |
| 1458-IN-50 | Drill Bit Plain Shank/Jacob Chuck End Ø4.0mm x Length 320mm, for Retrograde Nail  | 3                   |
| 1458-IN-51 | Stopper for Drill Bit Ø4.0mm, for Retrograde Nail                                 | 1                   |
| 1458-IN-52 | Locating Pin Ø4.0mm x Length 320mm, for Retrograde Nail                           | 2                   |
| 1458-IN-53 | Reamer For Lateral Cortex with Quick Coupling End for Retrograde Nail             | 1                   |
| 1458-IN-54 | Hexagonal Wrench, Hex 4.5mm, for Retrograde Nail                                  | 2                   |
| 1458-IN-60 | Threaded Trocar For Hexagonal Wrench Ø2.0mm x Thread 4mm x Length 267mm, for Reti | ograd <b>@</b> Nail |
| 1458-IN-55 | Combined Hammer for Retrograde Nail   | 1                   |
| 1458-IN-56 | Combined Wrench 11mm for Retrograde Nail  | 1                   |
| 1458-IN-57 | L Handle Pin Wrench Ø4.5mm for Impactor - Retrograde Nail                         | 1                   |
| 1458-IN-61 | Instrument Trays for Retrograde Nailing Instrument Set                            | 3                   |
| 1458-IN-59 | Container For Retrograde Nailing Instrument Set                                   | 1                   |



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