



Surgical Technique

Expert Tibia Nailing System

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

The Expert Tibial Nail enables the surgeon to further extend the spectrum of fractures eligible for intramedullary nailing. This nail is indicated for fractures of metaphyseal and certain intra articular fractures of tibial head and pilon tibial Expert Tibia Nail enhances the stability of constructed bone-nail and reduces the risk for secondary misalignment. Multidirectional interlocking screws ensure that alignment can be well maintained and stability preserved in short proximal or distal tibial segments. The end cap achieves angular stability between the proximal oblique screw and nail.



INDICATIONS:

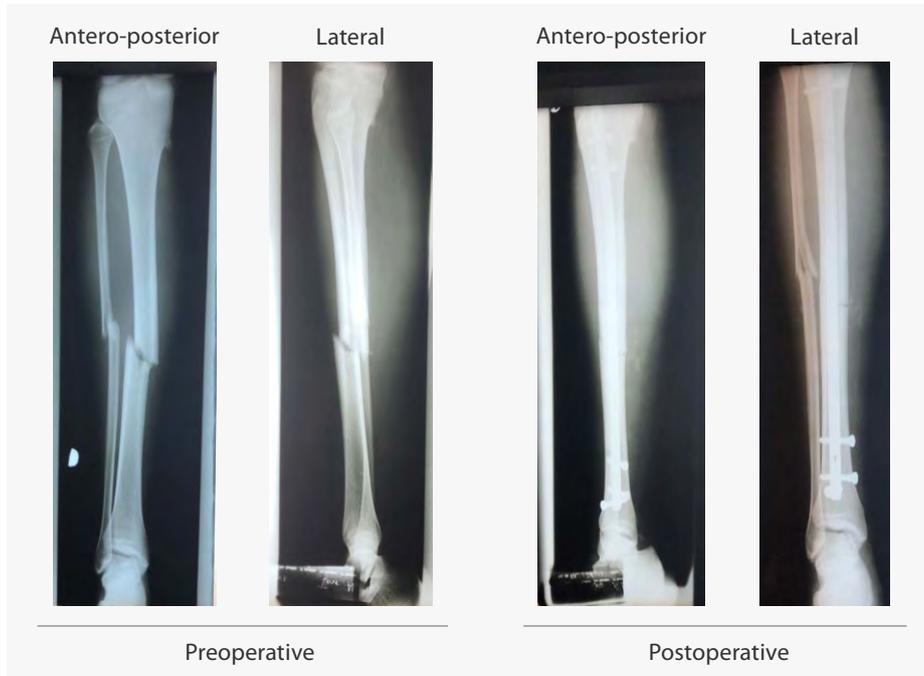
The AUXEIN MEDICAL Expert Tibia nail is indicated for use in a variety of tibial fractures, such as:

- 41-A2/A3
- All shaft fractures
- 43-A1/A2/A3
- Combinations of these fractures

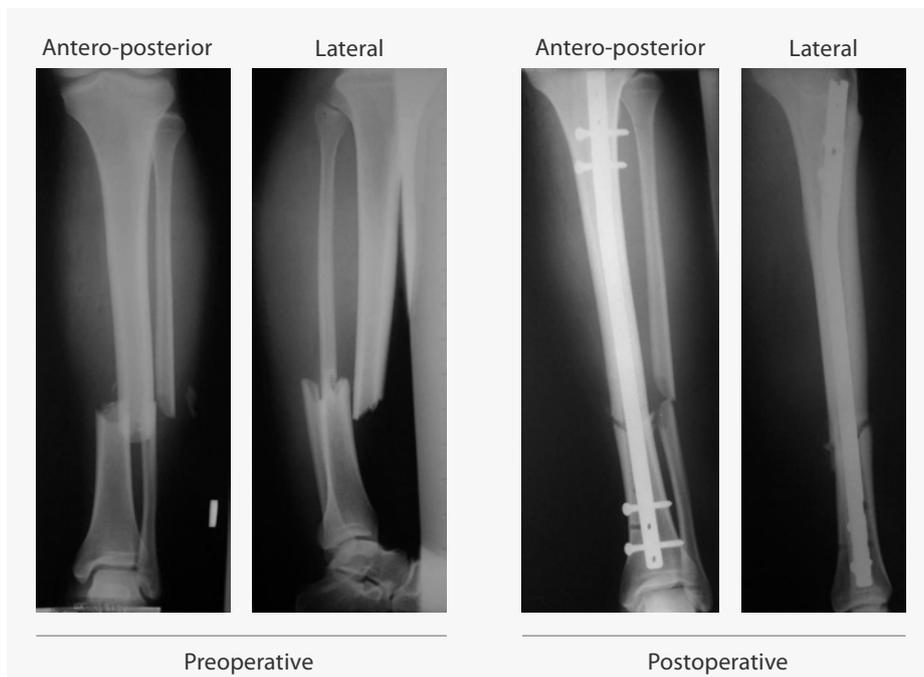


CASES

CASE-1

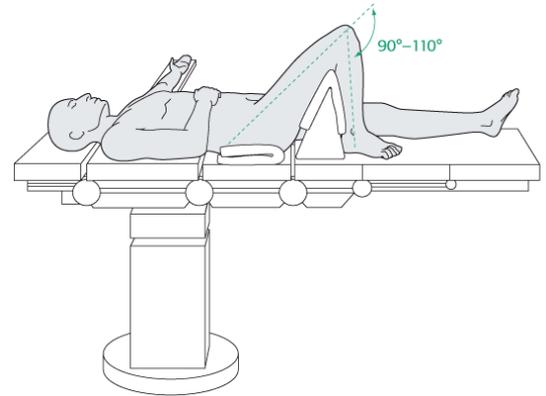


CASE-2



Patient Positioning: The patient is placed in a supine position. For entry site access, a knee flexion of around 90-110 degrees is required.

The angle can be achieved by placing a foam triangle under the knee. While providing the support, care should be taken that it should not press the popliteal fossa to avoid neurovascular compression and allowing better knee flexion.



Measuring Nail length and diameter:

The C-Arm is positioned in such a way to get AP view of the Distal Tibia. The Radiographic ruler (**520-003**) is held parallel to the Tibia bone. The ruler is adjusted until the distal end of ruler is aligned with the desired nail insertion depth.

After finalizing the position of radiographic ruler, the C-Arm is moved to the Proximal Tibia to take an image in AP view. The length of the nail is determined from reading on the ruler pointing in level or just below the tibial plateau.

Under C-Arm, the diameter gauge part of the radiographic ruler is placed over the narrowest part of the Tibia medullary canal in either AP or lateral view. The reading on the diameter gauge coinciding with the canal width is chosen.

Note: All the readings are to be taken only after the compression of the bone has been achieved. As an alternative, these readings can be measured from the uninjured Tibia bone.

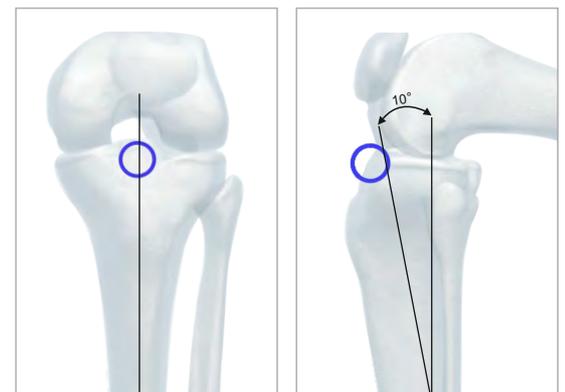


Skin Incision: The skin incision is made in line with center of medullary axis starting proximally at the distal third of the patella down to the tibial tuberosity along the patellar ligament.

Entry point determination: It is important to define the entry point for correct insertion of the expert tibia nail.

The insertion point is determined in both AP and lateral views as below:

- In lateral view, the point is at the ventral edge of tibial plateau.
- In AP view, the point is in line with intramedullary canal axis and with lateral tubercle of the inter-condylar eminence.



Guide wire insertion: The 3.2 mm guide wire (**520-004**) is secured in the guide wire holder (**520-005**). A punch mark is made at the insertion point at an angle of 10° to the tibial shaft axis in the lateral view. The guide wire is inserted 8-10 cm deep. The position of guide wire is finalized under the C-arm in both AP and lateral view.

Precaution: It is advised to dispose of the guide wire after the use and not to reuse it.



Opening the medullary canal:

There are 3 different alternatives for opening the medullary canal as shown below:

1. Using Entry cutter: The Protection sleeve (**520-006**) along with the entry cutter (**520-007**) are placed over the guide wire and the medullary canal is opened to a depth of 8-10 cm. Care should be taken that the cutter and guide wire doesn't touch the posterior cortex. The entry cutter and the guide wire are finally removed along with the protection sleeve.



2. Using Cannulated Awl: The cannulated awl (**520-009**) is placed over the guide wire and the medullary canal is opened. The twisting motion is applied to the awl and a cannulation of 8-10 cm is created in the medullary canal. Care should be taken that the awl doesn't touch the posterior cortex. The cannulated awl and the guide wire are finally removed.



3. **Using entry reamer:** The entry reamer (520-010) along with the protection sleeve (520-006) is placed over the guide wire and the medullary canal is opened to a depth of 8-10 cm. Care should be taken that the entry reamer and guide wire doesn't touch the posterior cortex. The entry reamer and the guide wire along with the protection sleeve are finally removed.



Reaming the Medullary Canal: Prior to reaming, the fractured segment of bone is put back in place by inserting the Reduction device (520-12) into the tibial medullary canal and the Ø2.5mm guide wire with ball tip (520-058) is inserted through the Reduction device (520-012) into the medullary canal. The Flexible reamer shaft (520-014) is then attached to the Reamer Head (520-7.5 to 520-13.0) of suitable diameter. The Tibia will be reamed to a diameter 0.5 to 1.5mm larger than the selected Tibia Nail. The reaming will be performed in 0.5mm increments. Continue reaming with to and fro motion to clear debris from medullary canal.



Jig Assembly: Align the Nail to the insertion Handle (520-15) so that the notch on insertion handle matches with the one on nail. Insert the nail holding bolt (520-016) through the insertion handle into the nail and tighten with the help of Driver for Nail holding bolt (50-053) to secure the assembly.



Nail Insertion: The assembly is advanced over the guide wire through the reamed intramedullary canal. Use twisting motion for further insertion. The nail insertion is controlled under image intensifier in both AP and lateral view to avoid misalignment.



If it is difficult to insert the nail manually into the medullary canal then slide the block for connecting shaft **(520-018)** into the grooves on top of insertion handle and secure it in place by threading the connecting shaft **(520-019)** into the block. Apply slight blows with the Sliding hammer **(520-024)** on top of the connecting shaft to advance the nail into medullary canal for final seating.

Alternatively, the Hammer Guide shaft **(520-022)** can be threaded on top of connecting shaft. Hence, the Sliding hammer can glide over the hammer guide shaft and with slight blows the nail can be finally seated into the medullary canal.

Confirm the final nail position radiographically under the C-arm.

Notes:

- If it is difficult to insert the nail, ream the intramedullary canal to a larger diameter or use a smaller diameter nail.
- After hammering confirm that the nail should be securely connected to the insertion handle.
- It is highly advised not to strike the insertion handle directly.

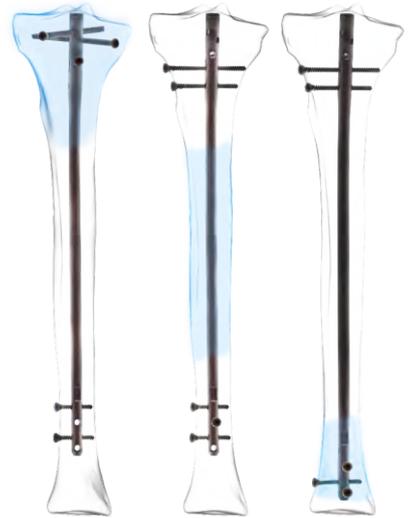


Locking Options:

Proximal Segment Fractures: For proximal fractures it is recommended to lock nail with the knee in extension. This neutralizes the deforming forces on proximal fragments caused by the quadriceps mechanism, and relieves the pressure on the soft tissue usually associated with tibial nail insertion instruments. This position also facilitates assessment of rotational alignment prior to locking.

Diaphyseal Segment Fractures: For diaphyseal fractures, it is recommended to lock distally first to allow intraoperative compression.

Distal Fragment Fractures: For distal fractures, it is recommended to lock distally first to facilitate reduction.



Distal Locking:

For distal locking, the Distal aiming device (520-025) is attached to the insertion handle. The arrow on insertion handle is aligned with the arrow indicating the selected nail length on the distal aiming device and is secure in place by using the bolt for distal aiming device (520-026). The Distal Aiming arm (520-033) is then attached to the distal aiming device and secured using bolt for distal aiming arm (520-034).



Nail repositioning: Pass the Ø5.2mm Drill sleeve (520-028) through the hole in the Distal aiming device for the positioning rod and advance it until it sits flush with the bone. Through the drill sleeve pass the Ø5.2mm Drill with T-Handle (520-030) until it reaches the slot on the nail. Remove drill bit and drill sleeve. Through the positioning rod hole insert the positioning rod (520-031) and secure it in place using the stabilizing device (520-032).



Inserting Distal Medio-lateral screw:

The green Trocar assembly [Protection drill sleeve 10/8.1mm (520-035) & Ø8.0mm Trocar (520-036)] is passed through the holes in distal aiming arm (520-033). A stab incision is made in the skin for passing the trocar assembly. The trocar assembly is advanced through the skin incision until it sits flush with the bone. The trocar is removed.



Insert the Drills sleeve 8/4mm (520-037) into protection sleeve. The Ø4.0mm Drill bit (520-038) is inserted through the drill sleeve and the bone is drilled through both cortices. Remove the Drill bit and drill sleeve.



Insert the Screw measuring gauge (520-041) through the protection sleeve and note down the required Ø4.4mm Locking bolt length as per the marking on the measuring gauge.



Select the Ø4.4mm Locking bolt of predetermined length and insert into the predrilled hole using the Screwdriver with T-handle (520-059). Disassemble and remove the Distal Aiming arm along with the protection sleeve.



Inserting Distal Anteroposterior screw:

If required, the remaining distal anteroposterior Ø4.4mm distal locking bolt can be inserted through the holes in the distal aiming device (520-025). The procedure for drilling and screw insertion would be same as described in the Inserting Distal mediolateral screw procedure.



Proximal Locking: At proximal end of nail there are three different options for locking:

1. **Dynamic Locking:** In order to achieve reduction in the bone shaft, the dynamic locking method is suitable. The dynamic locking could be achieved using the Proximal Aiming device for Ø4.4mm Locking bolt (520-044). Attach the proximal aiming device to the insertion handle and hold it in place with the help of bolt for proximal aiming device (520-045). The green trocar assembly is now inserted through the proximal hole of the aiming arm coinciding with the dynamic hole of the nail and is advanced until it sits flush with the bone.



Remove the trocar (520-036). The Ø4.0mm Drill bit (520-038) is now passed through the Protection sleeve (520-036) and used to drill the bone for screw insertion. Remove the drill bit and the drill sleeve.



Using the screw measuring gauge (520-041) measure the required Ø4.4mm Locking bolt length through the protection sleeve.



Finally insert the Ø4.4mm Locking bolt of selected length using 3.5mm Hex screwdriver through the protection sleeve.



For dynamization of the fracture, the Compression device for Expert Tibia Nail (520-052) is passed through the insertion handle into the proximal end of nail as shown in the adjacent figure. Using the Driver for nail holding bolt (520-053) insert the compression device further inside the nail. This will push the pre-inserted Locking bolt downwards and hence there will be an upward relative motion of the fractured fragment which will in turn reduce the fracture. Remove the compression device.



- 2. Static Locking:** For static locking pass the green trocar assembly through the distal hole of the proximal aiming arm for Ø4.4mm Locking Bolt (520-044). The method for drilling and screw insertion will be same as mentioned in the dynamic locking.



- 3. Oblique Locking:** The 3 most proximal holes in the nail is designed to accommodate Ø4.8mm Locking bolt in them. For oblique locking, the Proximal aiming device for Ø4.8mm Locking bolt (520-046) is attached to the insertion handle and fixed in place with the help of Bolt for proximal aiming device (520-045). The Yellow trocar assembly [Protection sleeve 11/8.6mm (520-047), Drill sleeve 8.5/3.5mm (520-048) & Ø3.2mm Trocar (520-049)] is inserted through the hole in the proximal aiming device and advanced until it sits flush with the bone. The trocar is removed.



The Ø3.2mm Drill bit (**520-050**) is inserted through the drill sleeve and the bone is drilled. After the drilling has been performed, remove both the drill bit and the drill sleeve.



Insert the screw measuring gauge (**520-041**) through the protection sleeve and the required Ø4.8mm Locking bolt length is measured from the marking on the measuring gauge.



Using the 3.5mm Hex screwdriver, finally insert the Ø4.8mm Locking bolt of predetermined length into the predrilled hole.

The two Ø4.8mm Locking bolt can be inserted using the Proximal aiming device for Ø4.8mm locking bolt. The last remaining oblique Ø4.8mm Locking bolt in the A-P direction can be inserted by using the insertion handle as a guide. The yellow trocar assembly is passed through the oblique hole in the insertion handle and the same procedure for drilling and screw insertion is used as described above.



End Cap insertion: In order to prevent tissue growth inside the nail, end cap insertion is required. The insertion handle is detached from the nail and using the 3.5mm Hex screwdriver (**520-042**), advance the end cap into the nail.



Implant Removal:

In case of implant removal firstly remove the end cap with the help of 3.5mm Hex screwdriver. Proceed by removing both Ø4.4mm and Ø4.8mm Locking Bolt from the bone using 3.5mm Hex screwdriver. Attach the connecting shaft (**520-019**) to the open end of nail from where the end cap is removed. On top of connecting shaft attach the Hammer guide shaft (**520-022**) followed by screwing the nut for hammer guide shaft (**520-023**) on top of hammer guide shaft. Unlock the nut on the sliding hammer (**520-024**) for its free movement during nail removal. Now, slide the Sliding Hammer into the hammer guide shaft. Strike the hammer in upward direction to remove the nail from the bone.

Note: It is highly recommended not to remove all the locking bolt as it may cause the nail rotation during attachment of the connecting shaft to the nail. Remove the remaining Locking bolt after the connecting shaft and the hammer guide shaft has been attached.



Expert Tibia Nail

Stainless Steel

	Code	Dia x Length
Ø8mm	520-08-255	Ø8mm x 255mm
	520-08-270	Ø8mm x 270mm
	520-08-285	Ø8mm x 285mm
	520-08-300	Ø8mm x 300mm
	520-08-315	Ø8mm x 315mm
	520-08-330	Ø8mm x 330mm
	520-08-345	Ø8mm x 345mm
	520-08-360	Ø8mm x 360mm
	520-08-375	Ø8mm x 375mm
Ø9mm	520-09-255	Ø9mm x 255mm
	520-09-270	Ø9mm x 270mm
	520-09-285	Ø9mm x 285mm
	520-09-300	Ø9mm x 300mm
	520-09-315	Ø9mm x 315mm
	520-09-330	Ø9mm x 330mm
	520-09-345	Ø9mm x 345mm
	520-09-360	Ø9mm x 360mm
	520-09-375	Ø9mm x 375mm
Ø10mm	520-10-255	Ø10mm x 255mm
	520-10-270	Ø10mm x 270mm
	520-10-285	Ø10mm x 285mm
	520-10-300	Ø10mm x 300mm
	520-10-315	Ø10mm x 315mm
	520-10-330	Ø10mm x 330mm
	520-10-345	Ø10mm x 345mm
	520-10-360	Ø10mm x 360mm
	520-10-375	Ø10mm x 375mm
Ø11mm	520-11-255	Ø11mm x 255mm
	520-11-270	Ø11mm x 270mm
	520-11-285	Ø11mm x 285mm
	520-11-300	Ø11mm x 300mm
	520-11-315	Ø11mm x 315mm
	520-11-330	Ø11mm x 330mm
	520-11-345	Ø11mm x 345mm
	520-11-360	Ø11mm x 360mm
	520-11-375	Ø11mm x 375mm
Ø12mm	520-12-255	Ø12mm x 255mm
	520-12-270	Ø12mm x 270mm
	520-12-285	Ø12mm x 285mm
	520-12-300	Ø12mm x 300mm
	520-12-315	Ø12mm x 315mm
	520-12-330	Ø12mm x 330mm
	520-12-345	Ø12mm x 345mm
	520-12-360	Ø12mm x 360mm
	520-12-375	Ø12mm x 375mm



Titanium

	Code	Dia x Length
Ø8mm	TI-520-08-255	Ø8mm x 255mm
	TI-520-08-270	Ø8mm x 270mm
	TI-520-08-285	Ø8mm x 285mm
	TI-520-08-300	Ø8mm x 300mm
	TI-520-08-315	Ø8mm x 315mm
	TI-520-08-330	Ø8mm x 330mm
	TI-520-08-345	Ø8mm x 345mm
	TI-520-08-360	Ø8mm x 360mm
	TI-520-08-375	Ø8mm x 375mm
Ø9mm	TI-520-09-255	Ø9mm x 255mm
	TI-520-09-270	Ø9mm x 270mm
	TI-520-09-285	Ø9mm x 285mm
	TI-520-09-300	Ø9mm x 300mm
	TI-520-09-315	Ø9mm x 315mm
	TI-520-09-330	Ø9mm x 330mm
	TI-520-09-345	Ø9mm x 345mm
	TI-520-09-360	Ø9mm x 360mm
	TI-520-09-375	Ø9mm x 375mm
Ø10mm	TI-520-10-255	Ø10mm x 255mm
	TI-520-10-270	Ø10mm x 270mm
	TI-520-10-285	Ø10mm x 285mm
	TI-520-10-300	Ø10mm x 300mm
	TI-520-10-315	Ø10mm x 315mm
	TI-520-10-330	Ø10mm x 330mm
	TI-520-10-345	Ø10mm x 345mm
	TI-520-10-360	Ø10mm x 360mm
	TI-520-10-375	Ø10mm x 375mm
Ø11mm	TI-520-11-255	Ø11mm x 255mm
	TI-520-11-270	Ø11mm x 270mm
	TI-520-11-285	Ø11mm x 285mm
	TI-520-11-300	Ø11mm x 300mm
	TI-520-11-315	Ø11mm x 315mm
	TI-520-11-330	Ø11mm x 330mm
	TI-520-11-345	Ø11mm x 345mm
	TI-520-11-360	Ø11mm x 360mm
	TI-520-11-375	Ø11mm x 375mm
Ø12mm	TI-520-12-255	Ø12mm x 255mm
	TI-520-12-270	Ø12mm x 270mm
	TI-520-12-285	Ø12mm x 285mm
	TI-520-12-300	Ø12mm x 300mm
	TI-520-12-315	Ø12mm x 315mm
	TI-520-12-330	Ø12mm x 330mm
	TI-520-12-345	Ø12mm x 345mm
	TI-520-12-360	Ø12mm x 360mm
	TI-520-12-375	Ø12mm x 375mm



End Cap For Expert Tibia Nail



Stainless Steel	Titanium	Length (mm)
520-001	TI-520-001	0
520-001-05	TI-520-001-05	5
520-001-10	TI-520-001-10	10
520-001-15	TI-520-001-15	15

Ø4.8mm Locking Bolt, Self-Tapping, For Expert Tibia Nail



Stainless Steel	Titanium	Length (mm)
520-002-25	TI-520-002-25	25
520-002-30	TI-520-002-30	30
520-002-35	TI-520-002-35	35
520-002-40	TI-520-002-40	40
520-002-45	TI-520-002-45	45
520-002-50	TI-520-002-50	50
520-002-55	TI-520-002-55	55
520-002-60	TI-520-002-60	60
520-002-65	TI-520-002-65	65
520-002-70	TI-520-002-70	70
520-002-75	TI-520-002-75	75
520-002-80	TI-520-002-80	80
520-002-85	TI-520-002-85	85
520-002-90	TI-520-002-90	90

Ø4.4mm Locking Bolt, Self-Tapping, For Expert Tibia Nail

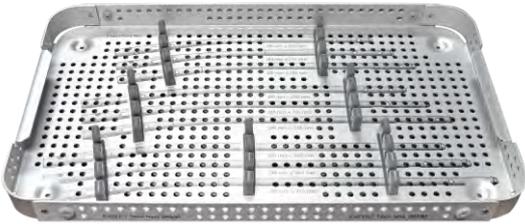


Stainless Steel	Titanium	Length (mm)
520-058-24	TI-520-058-24	24
520-058-26	TI-520-058-26	26
520-058-28	TI-520-058-28	28
520-058-30	TI-520-058-30	30
520-058-32	TI-520-058-32	32
520-058-34	TI-520-058-34	34
520-058-36	TI-520-058-36	36
520-058-38	TI-520-058-38	38
520-058-40	TI-520-058-40	40
520-058-42	TI-520-058-42	42
520-058-44	TI-520-058-44	44
520-058-46	TI-520-058-46	46
520-058-48	TI-520-058-48	48
520-058-50	TI-520-058-50	50
520-058-52	TI-520-058-52	52
520-058-54	TI-520-058-54	54
520-058-56	TI-520-058-56	56
520-058-58	TI-520-058-58	58
520-058-60	TI-520-058-60	60
520-058-62	TI-520-058-62	62
520-058-64	TI-520-058-64	64
520-058-66	TI-520-058-66	66
520-058-68	TI-520-058-68	68
520-058-70	TI-520-058-70	70
520-058-72	TI-520-058-72	72
520-058-74	TI-520-058-74	74
520-058-76	TI-520-058-76	76
520-058-78	TI-520-058-78	78
520-058-80	TI-520-058-80	80
520-058-82	TI-520-058-82	82
520-058-84	TI-520-058-84	84
520-058-86	TI-520-058-86	86
520-058-88	TI-520-058-88	88

1-013 Implant Box for Expert Tibia Nailing



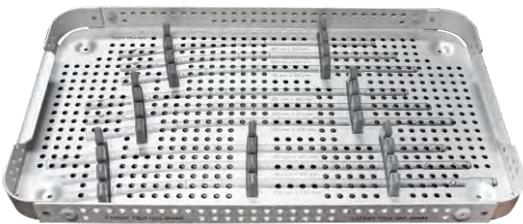
Tray 1



Dia	Length	Qty
Ø8mm	255mm to 375mm	1 pcs

Stainless Steel or Titanium Implants can be placed as per requirement

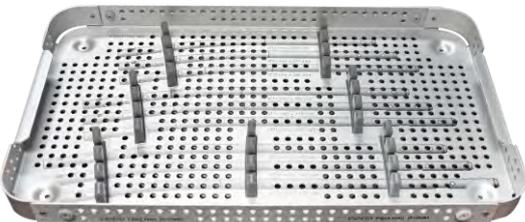
Tray 2



Dia	Length	Qty
Ø9mm	255mm to 375mm	1 pcs

Stainless Steel or Titanium Implants can be placed as per requirement

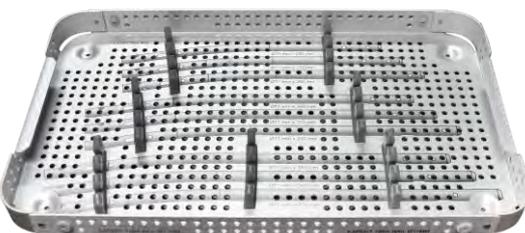
Tray 3



Dia	Length	Qty
Ø10mm	255mm to 375mm	1 pcs

Stainless Steel or Titanium Implants can be placed as per requirement

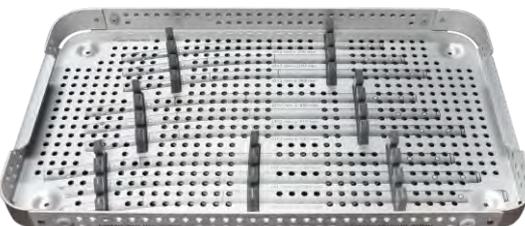
Tray 4



Dia	Length	Qty
Ø11mm	255mm to 375mm	1 pcs

Stainless Steel or Titanium Implants can be placed as per requirement

Tray 5



Dia	Length	Qty
Ø12mm	255mm to 375mm	1 pcs

Stainless Steel or Titanium Implants can be placed as per requirement



Ø4.8mm Locking Bolt, Self-Tapping, For Expert Tibia Nail

Dia	Length	Qty
Ø4.8mm	25mm to 90mm	3pcs

Stainless Steel or Titanium Implants can be placed as per requirement

Ø4.4mm Locking Bolt, Self-Tapping, For Expert Tibia Nail

Dia	Length	Qty
Ø4.4mm	24mm to 88mm	6pcs

Stainless Steel or Titanium Implants can be placed as per requirement

End Cap For Expert Tibia Nail

Length	Qty
0mm to 15mm	2pcs

Stainless Steel or Titanium Implants can be placed as per requirement

Expert Tibia

Nail Instrument Set

520-003 Radiographic Ruler for Expert Tibia Nail



520-004 Guide Wire With Threaded Tip \varnothing 3.2mm x Thread Length 10mm x Length 300mm



520-005 Guide Wire Holder for Expert Tibia Nail



520-006 Protection Sleeve 14/12mm for Expert Tibia Nail



520-007 Entry Cutter \varnothing 12mm for Expert Tibia Nail



520-008 Tissue Protector for Expert Tibia Nail



520-009 Cannulated Awl for Expert Tibia Nail



520-010 Entry Reamer Ø12mm for Expert Tibia Nail



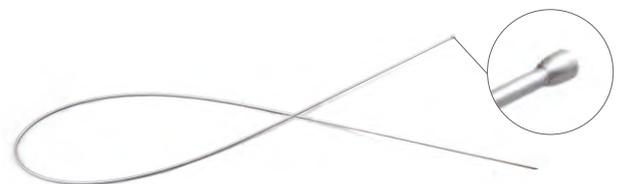
520-011 T- Handle for Entry Reamer - Expert Tibia Nail



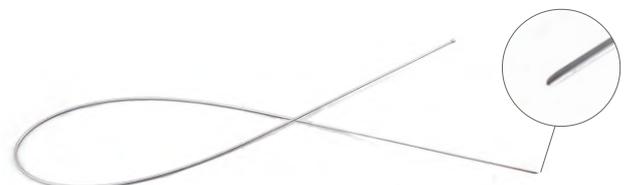
520-012 Reduction Device for Expert Tibia Nail



520-013 Guide wire with Ball Tip Ø2.5/3.65mm x Length 1000mm - Nitinol, for Expert Tibia Nail



520-058 Guide wire without Ball Tip Ø2.5mm x Length 1000mm - Nitinol, for Expert Tibia Nail



520-014 Flexible Reamer Shaft (AO Connection) for Expert Tibia Nail



Reamer Head

Code	Dia	Code	Dia
520-7.5	Ø7.5mm	520-10.5	Ø10.5mm
520-8.0	Ø8mm	520-11.0	Ø11mm
520-8.5	Ø8.5mm	520-11.5	Ø11.5mm
520-9.0	Ø9mm	520-12.0	Ø12mm
520-9.5	Ø9.5mm	520-12.5	Ø12.5mm
520-10.0	Ø10mm	520-13.0	Ø13mm



520-015 Insertion Handle for Expert Tibia Nail



520-016 Nail Holding Bolt for Expert Tibia Nail



520-018 Block for Connecting Shaft - Expert Tibia Nail



520-019 Connecting Shaft, M10 for Hammering Device - Expert Tibia Nail



520-020 Combination Wrench 11mm for Expert Tibia Nail



520-022 Hammer Guide Shaft for Expert Tibia Nail



520-023 Nut for Hammer Guide Shaft - Expert Tibia Nail



520-024 Sliding Hammer for Expert Tibia Nail



520-025 Distal Aiming Device for Expert Tibia Nail



520-026 Bolt for Distal Aiming Device - Expert Femur Nail



520-027 Allen Key, Hex 5mm for Expert Tibia Nail



520-028 Drill Sleeve, Ø5.2mm for Positioning Rod - Expert Tibia Nail



520-029 Drill Bit Plain Shank/ Jacob Chuck End Ø5.2mm x Length 250mm for Expert Tibia Nail



520-030 Ø5.2mm T-Handle Drill Bit with Flat End for Expert Tibia Nail



520-031 Positioning Rod for Expert Tibia Nail



520-032 Stabilizing Device for Expert Tibia Nail



520-033 Distal Aiming Arm for Expert Tibia Nail



520-034 Bolt for Distal Aiming Arm - Expert Tibia Nail



520-035 Protection Drill Sleeve 10/8mm for Expert Tibia Nail



520-036 Trocar Ø8mm for Expert Tibia Nail



520-037 Drill Sleeve 8/4mm for Ø4mm Drill Bit - Expert Tibia Nail



520-038

Drill Bit Plain Shank/Jacob Chuck End Ø4.0mm x Length 300mm for Expert Tibia Nail

**520-039**

Stopper for Ø4.0mm Drill Bit - Expert Tibia Nail

**520-040**

Allen Key, Hex 3mm for Expert Tibia Nail

**520-041**

Depth Gauge measuring upto 90mm for Expert Tibia Nail

**520-059**

Screwdriver with T-Handle, Hex 3.5mm for Expert Tibia Nail

**520-044**

Proximal Aiming Device for Ø4.4mm Locking Bolt - Expert Tibia Nail



520-045 Bolt for Proximal Aiming Device - Expert Tibia Nail



520-046 Proximal Aiming Device for Ø4.8mm Locking Bolt - Expert Tibia Nail



520-047 Protection Sleeve 11/8.6mm for Ø4.8mm Locking Bolt - Expert Tibia Nail



520-048 Drill Sleeve 8.5/3.2mm for Ø3.2mm Drill Bit - Expert Tibia Nail



520-049 Trocar Ø3.2mm for Expert Tibia Nail



520-050 Drill Bit Plain Shank/Jacob Chuck End Ø3.2mm x Length 250mm for Expert Tibia Nail



520-051 Stopper for Ø3.2mm Drill Bit - Expert Tibia Nail



520-052 Compression Device for Expert Tibia Nail



520-053 Universal Driver for Nail Holding Bolt - Expert Tibia Nail



520-042 Universal Screwdriver, Hex 3.5mm for Expert Tibia Nail



520-060 Depth Gauge measuring upto 100mm for Expert Tibia Nail



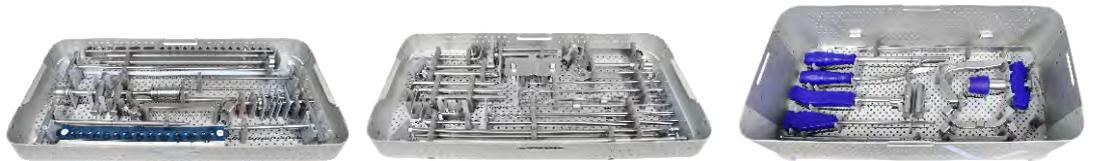
7-010-02 Medullary Exchange Tube



7-010-03 T-Handle for Flexible Reamer (AO Connection)



520-056 Instrument Trays For Expert Tibia Nailing Instrument Set

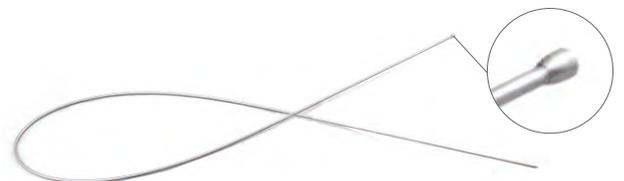


520-057 Container with PPSU Lid for Expert Tibia Nailing Instrument Set

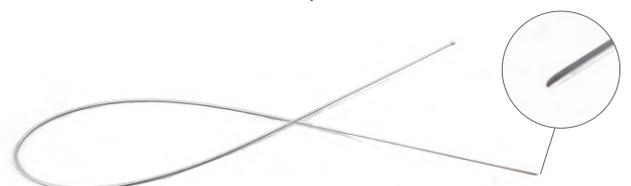


Optional Instruments

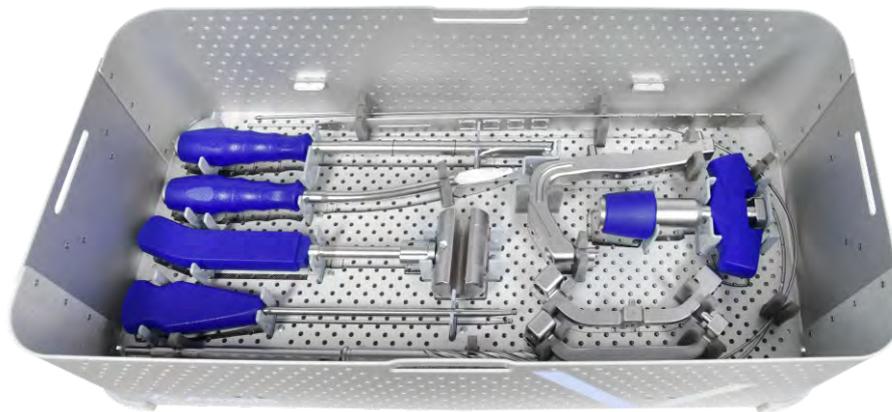
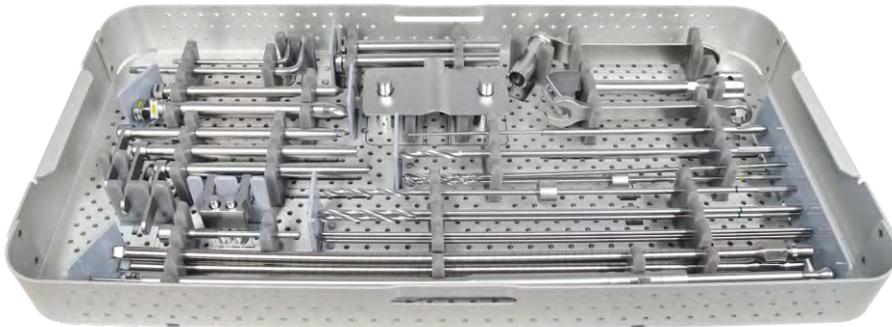
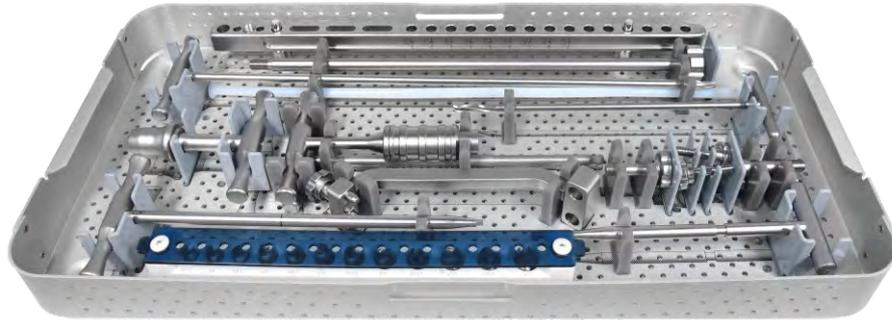
520-013S Guide Wire With Ball Tip $\varnothing 2.5/3.65\text{mm}$ x Length 1000mm - Stainless Steel, for Expert Tibia Nail



520-058S Guide Wire Without Ball Tip $\varnothing 2.5\text{mm}$ x Length 1000mm - Stainless Steel, for Expert Tibia Nail



INS-520 Expert Tibia Nailing Instrument Set



INS-520 Expert Tibia Nailing Instrument Set

Code	Set Consisting of	Units
520-003	Radiographic Ruler for Expert Tibia Nail	1
520-004	Guide Wire With Threaded Tip Ø3.2mm x Thread Length 10mm x Length 300mm	3
520-005	Guide Wire Holder for Expert Tibia Nail	1
520-006	Protection Sleeve 14/12mm for Expert Tibia Nail	1
520-007	Entry Cutter Ø12mm for Expert Tibia Nail	1
520-008	Tissue Protector for Expert Tibia Nail	1
520-009	Cannulated Awl for Expert Tibia Nail	1
520-010	Entry Reamer Ø12mm for Expert Tibia Nail	1
520-011	T- Handle for Entry Reamer - Expert Tibia Nail	1
520-012	Reduction Device for Expert Tibia Nail	1
520-013	Guide wire with Ball Tip Ø2.5/3.65mm x Length 1000mm - Nitinol, for Expert Tibia Nail	1
520-058	Guide wire without Ball Tip Ø2.5mm x Length 1000mm - Nitinol, for Expert Tibia Nail	1
520-014	Flexible Reamer Shaft (AO Connection) for Expert Tibia Nail	2
520-7.5	Reamer Head, Ø7.5mm for Expert Tibia Nail	1
520-8.0	Reamer Head, Ø8.0mm for Expert Tibia Nail	1
520-8.5	Reamer Head, Ø8.5mm for Expert Tibia Nail	1
520-9.0	Reamer Head, Ø9.0mm for Expert Tibia Nail	1
520-9.5	Reamer Head, Ø9.5mm for Expert Tibia Nail	1
520-10.0	Reamer Head, Ø10.0mm for Expert Tibia Nail	1
520-10.5	Reamer Head, Ø10.5mm for Expert Tibia Nail	1
520-11.0	Reamer Head, Ø11.0mm for Expert Tibia Nail	1
520-11.5	Reamer Head, Ø11.5mm for Expert Tibia Nail	1
520-12.0	Reamer Head, Ø12.0mm for Expert Tibia Nail	1
520-12.5	Reamer Head, Ø12.5mm for Expert Tibia Nail	1
520-13.0	Reamer Head, Ø13.0mm for Expert Tibia Nail	1
520-015	Insertion Handle for Expert Tibia Nail	1
520-016	Nail Holding Bolt for Expert Tibia Nail	2
520-018	Block for Connecting Shaft - Expert Tibia Nail	1
520-019	Connecting Shaft, M10 for Hammering Device - Expert Tibia Nail	1
520-020	Combination Wrench 11mm for Expert Tibia Nail	1
520-022	Hammer Guide Shaft for Expert Tibia Nail	1
520-023	Nut for Hammer Guide Shaft - Expert Tibia Nail	1
520-024	Sliding Hammer for Expert Tibia Nail	1
520-025	Distal Aiming Device for Expert Tibia Nail	1
520-026	Bolt for Distal Aiming Device - Expert Femur Nail	1
520-027	Allen Key, Hex 5mm for Expert Tibia Nail	1

Code	Set Consisting of	Units
520-028	Drill Sleeve, Ø5.2mm for Positioning Rod - Expert Tibia Nail	1
520-029	Drill Bit Plain Shank/ Jacob Chuck End Ø5.2mm x Length 250mm for Expert Tibia Nail	1
520-030	Ø5.2mm T-Handle Drill Bit with Flat End for Expert Tibia Nail	1
520-031	Positioning Rod for Expert Tibia Nail	1
520-032	Stabilizing Device for Expert Tibia Nail	1
520-033	Distal Aiming Arm for Expert Tibia Nail	1
520-034	Bolt for Distal Aiming Arm - Expert Tibia Nail	1
520-035	Protection Drill Sleeve 10/8mm for Expert Tibia Nail	2
520-036	Trocar Ø8mm for Expert Tibia Nail	1
520-037	Drill Sleeve 8/4mm for Ø4mm Drill Bit - Expert Tibia Nail	2
520-038	Drill Bit Plain Shank/Jacob Chuck End Ø4.0mm x Length 300mm for Expert Tibia Nail	3
520-039	Stopper for Ø4.0mm Drill Bit - Expert Tibia Nail	1
520-040	Allen Key, Hex 3mm for Expert Tibia Nail	1
520-041	Depth Gauge measuring upto 90mm for Expert Tibia Nail	1
520-059	Screwdriver with T-Handle, Hex 3.5mm for Expert Tibia Nail	1
520-044	Proximal Aiming Device for Ø4.4mm Locking Bolt - Expert Tibia Nail	1
520-045	Bolt for Proximal Aiming Device - Expert Tibia Nail	2
520-046	Proximal Aiming Device for Ø4.8mm Locking Bolt - Expert Tibia Nail	1
520-047	Protection Sleeve 11/8.6mm for Ø4.8mm Locking Bolt - Expert Tibia Nail	1
520-048	Drill Sleeve 8.5/3.2mm for Ø3.2mm Drill Bit - Expert Tibia Nail	1
520-049	Trocar Ø3.2mm for Expert Tibia Nail	1
520-050	Drill Bit Plain Shank/Jacob Chuck End Ø3.2mm x Length 250mm for Expert Tibia Nail	2
520-051	Stopper for Ø3.2mm Drill Bit - Expert Tibia Nail	1
520-052	Compression Device for Expert Tibia Nail	1
520-053	Universal Driver for Nail Holding Bolt - Expert Tibia Nail	1
520-042	Universal Screwdriver, Hex 3.5mm for Expert Tibia Nail	1
520-060	Depth Gauge measuring upto 100mm for Expert Tibia Nail	1
7-010-02	Medullary Exchange Tube	1
7-010-03	T-Handle for Flexible Reamer (AO Connection)	1
520-056	Instrument Trays For Expert Tibia Nailing Instrument Set	3
520-057	Container with PPSU Lid for Expert Tibia Nailing Instrument Set	1

Expert Tibia

Nail Instrument Set (Suprapatellar Insertion)

7-112-01 Insertion Handle for Expert Tibia Nail - Suprapatellar Insertion



7-112-02 Protection Sleeve Handle for Expert Tibia Nail - Suprapatellar Insertion



7-112-03 Outer Protection Sleeve for Expert Tibia Nail - Suprapatellar Insertion



7-112-04 Protection Sleeve 16/14.5mm for Expert Tibia Nail - Suprapatellar Insertion



7-112-05 Trocar Ø14.5mm, PEEK, for Expert Tibia Nail - Suprapatellar Insertion



7-112-06 Centering Sleeve 14.5/3.2mm for Expert Tibia Nail - Suprapatellar Insertion



7-112-07 Proximal Aiming Device for Ø4.4mm Locking Bolt - Expert Tibia Nail (Suprapatellar Insertion)



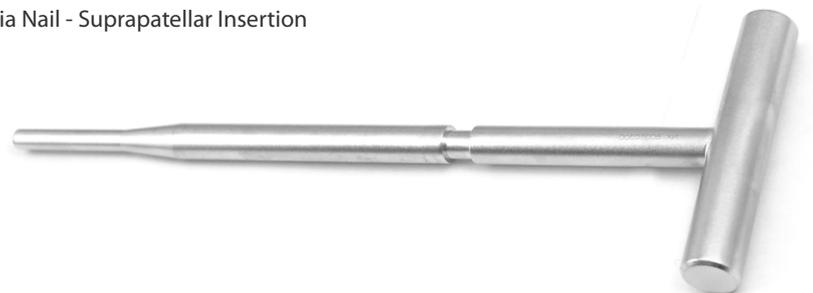
7-112-08 Bolt for Proximal Aiming Device - Expert Tibia Nail (Suprapatellar Insertion)



7-112-09 Proximal Aiming Device for Ø4.8mm Locking Bolt - Expert Tibia Nail (Suprapatellar Insertion)



7-112-10 Positioning Rod For Expert Tibia Nail - Suprapatellar Insertion



7-112-11 Stabilizing Device for Expert Tibia Nail - Suprapatellar Insertion



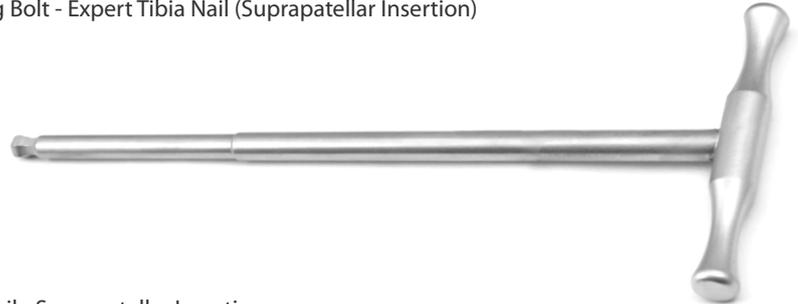
7-112-12 Distal Aiming Arm for Expert Tibia Nail - Suprapatellar Insertion



7-112-13 Bolt for Distal Targeting Device, for Expert Tibia Nail - Suprapatellar Insertion



7-112-14 Universal Driver for Nail Holding Bolt - Expert Tibia Nail (Suprapatellar Insertion)



7-112-15 Entry Reamer for Expert Tibia Nail - Suprapatellar Insertion



7-112-16 Compression Device for Expert Tibia Nail - Suprapatellar Insertion



7-112-17 Extraction Screw for Expert Tibia Nail - Suprapatellar Insertion



7-112-18 Connecting Shaft for Expert Tibia Nail - Suprapatellar Insertion



7-112-19 Nail Holding Bolt, Long, for Expert Tibia Nail - Suprapatellar Insertion



7-112-20 Combination Wrench 11mm for Expert Tibia Nail - Suprapatellar Insertion



7-112-21 Sliding Hammer for Expert Tibia Nail - Suprapatellar Insertion



7-112-22 Hammer Guide Shaft for Expert Tibia Nail - Suprapatellar Insertion



7-112-23 Nut for Hammer Guide Shaft - Expert Tibia Nail - Suprapatellar Insertion



7-112-24 Radiographic Ruler for Expert Tibia Nail - Suprapatellar Insertion



520-004 Guide Wire With Threaded Tip Ø3.2mm x Thread Length 10mm x Length 300mm



7-112-25 Entry Cutter for Expert Tibia Nail - Suprapatellar Insertion



7-112-26 Quick Coupling T Handle for Expert Tibia Nail - Suprapatellar Insertion



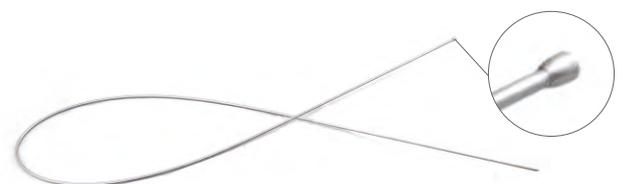
7-112-27 Cannulated Awl for Expert Tibia Nail - Suprapatellar Insertion



7-112-28 Reduction Device for Expert Tibia Nail - Suprapatellar Insertion

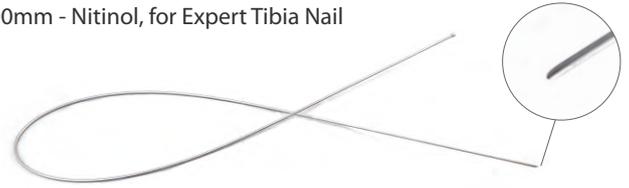


520-013 Guide wire with Ball Tip Ø2.5/3.65mm x Length 1000mm - Nitinol, for Expert Tibia Nail



520-058

Guide wire without Ball Tip Ø2.5mm x Length 1000mm - Nitinol, for Expert Tibia Nail



7-112-29

Guide Wire Holder for Expert Tibia Nail - Suprapatellar Insertion



7-112-30

Flexible Reamer Shaft (Jacob Connection) for Expert Tibia Nail - Suprapatellar Insertion



Reamer Head

Code	Dia	Code	Dia
7-112-31	Ø7.5mm	7-112-37	Ø10.5mm
7-112-32	Ø8mm	7-112-38	Ø11mm
7-112-33	Ø8.5mm	7-112-39	Ø11.5mm
7-112-34	Ø9mm	7-112-40	Ø12mm
7-112-35	Ø9.5mm	7-112-41	Ø12.5mm
7-112-36	Ø10mm	7-112-42	Ø13mm



7-112-43

Distal Aiming Device for Expert Tibia Nail - Suprapatellar Insertion



7-112-44

Ø5.2mm T-Handle Drill Bit with Flat End for Expert Tibia Nail - Suprapatellar Insertion



7-112-45 Bolt for Distal Aiming Arm - Expert Tibia Nail (Suprapatellar Insertion)



7-112-46 Allen Key, Hex 5mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-47 Drill Sleeve, Ø5.2mm for Positioning Rod - Expert Tibia Nail (Suprapatellar Insertion)



7-112-48 Drill Bit Plain Shank/ Jacob Chuck End Ø5.2mm x Length 250mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-49 Protection Drill Sleeve 10/8mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-50 Trocar Ø8mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-51 Drill Sleeve 8/4mm for Ø4mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)



7-112-52 Drill Bit Plain Shank/Jacob Chuck End Ø4.0mm x Length 300mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-53 Stopper for Ø4.0mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)



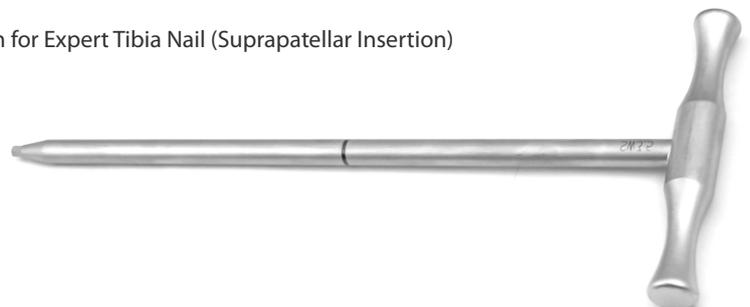
7-112-54 Allen Key, Hex 3mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-55 Depth Gauge measuring upto 90mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-56 Screwdriver with T-Handle, Hex 3.5mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-57 Protection Sleeve 11/8.6mm for Ø4.8mm Locking Bolt - Expert Tibia Nail (Suprapatellar Insertion)



7-112-58 Drill Sleeve 8.5/3.2mm for Ø3.2mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)



7-112-59 Trocar Ø3.2mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-60 Drill Bit Plain Shank/Jacob Chuck End Ø3.2mm x Length 250mm for Expert Tibia Nail (Suprapatellar Insertion)



7-112-61 Stopper for Ø3.2mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)



7-112-62 Instrument Trays for Expert Tibia Nailing Instrument Set (Suprapatellar Insertion)



7-112-63 Container with PPSU lid for Expert Tibia Nailing Instrument Set (Suprapatellar Insertion)



7-112 Expert Tibia Nailing Instrument Set (Suprapatellar Insertion)



7-112 Expert Tibia Nailing Instrument Set (Suprapatellar Insertion)

Code	Set Consisting of	Units
7-112-01	Insertion Handle for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-02	Protection Sleeve Handle for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-03	Outer Protection Sleeve for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-04	Protection Sleeve 16/14.5mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-05	Trocar Ø14.5mm, PEEK, for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-06	Centering Sleeve 14.5/3.2mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-07	Proximal Aiming Device for Ø4.4mm Locking Bolt - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-08	Bolt for Proximal Aiming Device - Expert Tibia Nail (Suprapatellar Insertion)	2
7-112-09	Proximal Aiming Device for Ø4.8mm Locking Bolt - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-10	Positioning Rod For Expert Tibia Nail - Suprapatellar Insertion	1
7-112-11	Stabilizing Device for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-12	Distal Aiming Arm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-13	Bolt for Distal Targeting Device, for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-14	Universal Driver for Nail Holding Bolt - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-15	Entry Reamer for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-16	Compression Device for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-17	Extraction Screw for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-18	Connecting Shaft for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-19	Nail Holding Bolt, Long, for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-20	Combination Wrench 11mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-21	Sliding Hammer for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-22	Hammer Guide Shaft for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-23	Nut for Hammer Guide Shaft - Expert Tibia Nail - Suprapatellar Insertion	1
7-112-24	Radiographic Ruler for Expert Tibia Nail - Suprapatellar Insertion	1
520-004	Guide Wire With Threaded Tip Ø3.2mm x Thread Length 10mm x Length 300mm	3
7-112-25	Entry Cutter for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-26	Quick Coupling T Handle for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-27	Cannulated Awl for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-28	Reduction Device for Expert Tibia Nail - Suprapatellar Insertion	1
520-013	Guide wire with Ball Tip Ø2.5/3.65mm x Length 1000mm - Nitinol, for Expert Tibia Nail	1
520-058	Guide wire without Ball Tip Ø2.5mm x Length 1000mm - Nitinol, for Expert Tibia Nail	1
7-112-29	Guide Wire Holder for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-30	Flexible Reamer Shaft (Jacob Connection) for Expert Tibia Nail - Suprapatellar Insertion	2

Code	Set Consisting of	Units
7-112-31	Reamer Head, Ø7.5mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-32	Reamer Head, Ø8.0mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-33	Reamer Head, Ø8.5mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-34	Reamer Head, Ø9.0mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-35	Reamer Head, Ø9.5mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-36	Reamer Head, Ø10.0mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-37	Reamer Head, Ø10.5mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-38	Reamer Head, Ø11.0mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-39	Reamer Head, Ø11.5mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-40	Reamer Head, Ø12.0mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-41	Reamer Head, Ø12.5mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-42	Reamer Head, Ø13.0mm for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-43	Distal Aiming Device for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-44	Ø5.2mm T-Handle Drill Bit with Flat End for Expert Tibia Nail - Suprapatellar Insertion	1
7-112-45	Bolt for Distal Aiming Arm - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-46	Allen Key, Hex 5mm for Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-47	Drill Sleeve, Ø5.2mm for Positioning Rod - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-48	Drill Bit Plain Shank/ Jacob Chuck End Ø5.2mm x Length 250mm for Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-49	Protection Drill Sleeve 10/8mm for Expert Tibia Nail (Suprapatellar Insertion)	2
7-112-50	Trocar Ø8mm for Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-51	Drill Sleeve 8/4mm for Ø4mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)	2
7-112-52	Drill Bit Plain Shank/Jacob Chuck End Ø4.0mm x Length 300mm for Expert Tibia Nail (Suprapatellar Insertion)	3
7-112-53	Stopper for Ø4.0mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-54	Allen Key, Hex 3mm for Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-55	Depth Gauge measuring upto 90mm for Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-56	Screwdriver with T-Handle, Hex 3.5mm for Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-57	Protection Sleeve 11/8.6mm for Ø4.8mm Locking Bolt - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-58	Drill Sleeve 8.5/3.2mm for Ø3.2mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-59	Trocar Ø3.2mm for Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-60	Drill Bit Plain Shank/Jacob Chuck End Ø3.2mm x Length 250mm for Expert Tibia Nail (Suprapatellar Insertion)	2
7-112-61	Stopper for Ø3.2mm Drill Bit - Expert Tibia Nail (Suprapatellar Insertion)	1
7-112-62	Instrument Trays for Expert Tibia Nailing Instrument Set (Suprapatellar Insertion)	3
7-112-63	Container with PPSU lid for Expert Tibia Nailing Instrument Set (Suprapatellar Insertion)	1



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