Auxein

KONZEPT FIBULA & FOREARM

Surgical Technique

NEXT-LEVEL CARE

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 endeavour 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.

IMPACTING HEALTHCARE GLOBALLY

Our Reach & Influence

500+
Employees Worldwide

75+
Operations in Countries

150+
Distributors Worldwide

20M+
Patients Cured

200+
FDA Approved Products

250+
Machines Worldwide

3000+
Orthopedic Solutions

Auxein is dedicated to advancing medical technology through innovative orthopedic solutions, including **Trauma, Arthroscopy, and Reconstructive Procedures**, with a commitment to improving patient outcomes worldwide. Our approach integrates advanced research, precision engineering, and high-quality manufacturing to develop reliable implants and surgical instruments that address the evolving needs of modern orthopedic practice.

OUR ACHIEVEMENTS



OVER THE YEARS

Disclaimer: Not all products in this catalogue are covered by European CE, US FDA, or other certifications. Please contact our Sales Team for product-specific certification details.


HAAS
HAAS
POWER ON
POWER OFF
EMERGENCY STOP
HANDLE JOG
RESET
OVERRIDES
CYCLE START
STOP
REV
SPINDLE



At Auxein, it is our goal to provide the best in class quality and value to every individual. Consistency is a virtue we pursue with a passion. From the procurement of raw materials to the manufacturing of our range of 1200+ orthopaedic implant products, we employee world-class systems and technology at par with the highest standards of globally recognized evaluation systems. The Konzept Fibula & Forearm is part of our orthopedic trauma portfolio designed for the intramedullary fixation of femoral fractures. Developed with input from global experts, the system provides reliable stabilization, helping achieve stable fixation, proper load sharing, and accurate anatomical alignment during fracture management.

KONZEPT FIBULA & FOREARM

Konzept Fibula & Forearm Nail



Introduction:

The Konzept Fibula & Forearm Nailing System is designed for intramedullary osteosynthesis of fibula and forearm fractures. The system provides stable fixation through intramedullary support, facilitating accurate fracture reduction and maintenance of anatomical alignment of the radius, ulna, and fibula. Its design allows minimally invasive surgical implantation while preserving surrounding soft tissues and periosteal blood supply, thereby promoting biological fracture healing and reliable mechanical stability.

Key Features:

- **Two Nail Options:** Available as Konzept Fibula & Forearm Nail and Konzept Fibula & Forearm Nail with Compression.
- **Compression Capability:** Compression variant allows controlled interfragmentary compression at the fracture site.
- **Diameter Options:** Available in 4.0 mm and 5.0 mm diameters.
- **Length Range:** Available in lengths from 180 mm to 260 mm in 20 mm increments.
- **Stable Fixation:** Designed to provide reliable intramedullary stabilization for fibula and forearm fractures.
- **Material:** Manufactured from Titanium alloy for high strength, corrosion resistance, and biocompatibility.

Indications:

- The Konzept Fibula & Forearm Nailing System is indicated for the treatment of:·

- Transverse, short oblique, and comminuted fractures of the radius, ulna,
- and fibular shaft.
- Diaphyseal fractures of the forearm bones (radius and ulna).
- Fibular fractures associated with ankle joint injuries.
- Fractures requiring intramedullary stabilization with minimal soft tissue disruption.



Examples of forearm and fibula fractures treated with intramedullary nails include
a). Comminuted fractures of the ulnar shaft.
b). Oblique fractures of the shafts of the ulna and radius.
c). Fibular fractures in the ankle joint region associated with simultaneous transverse shaft fractures.

WARNING:

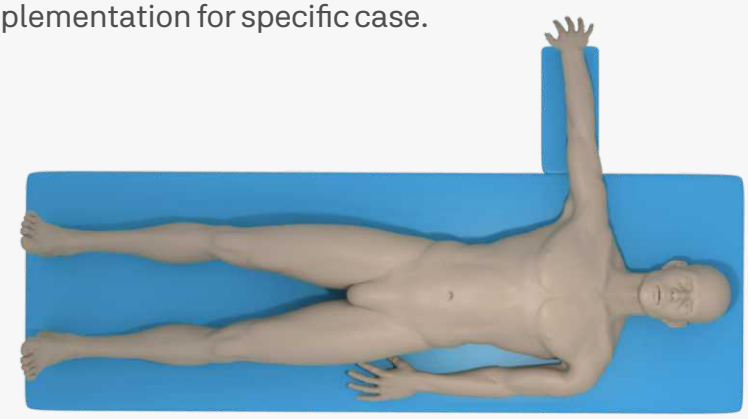
Given description contains the most important stages of the forearm and fibula bones intramedullary nailing procedure, but does not form strict directions for use. A surgeon decides about the surgical technique and its implementation for specific case.

1. SURGERY PLANNING

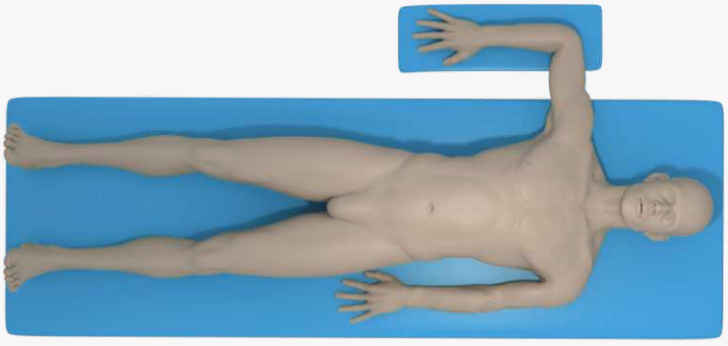
Every surgical procedure has to be planned in an appropriate way. X-Ray of the fractured bone in AP and lateral position shall be performed before starting the operation in order to define the fracture type as well as intramedullary nail size and bending.

Given description contains the most important stages of the forearm and fibula bones through advance nailing procedure, but does not form strict directions for use. A surgeon decides about the surgical technique and its implementation for specific case.

Patient positioning for radius operation
In case of radius operation, the patient should be positioned supine. The fractured limb should be abducted in humerus joint at an angle of 90°, bent in wrist by free fall of the hand and fixed in a traction clamp.



Patient positioning for ulna operation
In case of ulna fracture treatments, the patient should be positioned supine. The fractured limb should be abducted in humerus joint at the angle of 90° and bent in elbow joint at the angle of 90° and fixed in a traction clamp. X-Ray set with display monitor should be located perpendicular to the anterior area of forearm.



Patient positioning for fibula operation
In case of fibula operation the patient should be positioned supine. Internal rotation of the limb improves access to the place of nail insertion. It is important to place surgery pillows under the pelvis and the leg to allow easier surgical approach and X-Ray control during the operation. Fix the limb in a traction clamp.



2. NAILING POINT

Preparation of surgical approach for ulna operation and setting the entry point for nail insertion

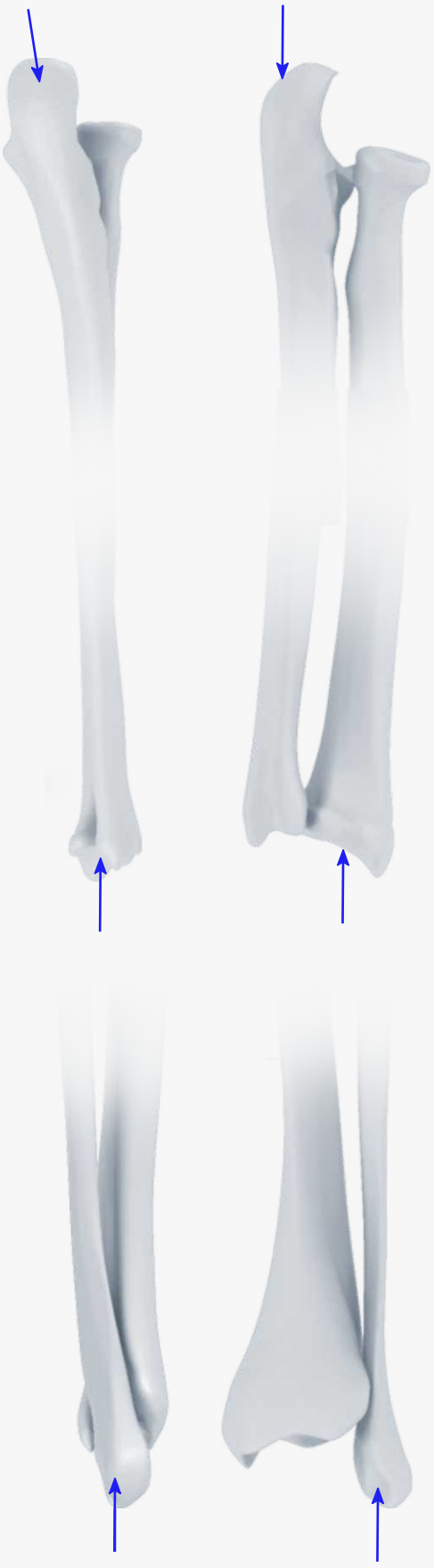
To prepare surgical approach for ulna nailing, uncover the olecranon process by making longitudinal 1cm skin incision above the olecranon tip (proximal part of ulna). The entry point for intramedullary nail is in line with the centre of the medullary canal and in the centre of the upper olecranon process. Care should be taken of the rotation of fragments of fractured bone (coronoid process of the ulna should be positioned at an angle of 180° against the styloid process of ulna).

Preparation of surgical approach for radius operation and setting the entry point for nail insertion

Make 2.5-3cm longitudinal skin incision over the area of distal wrist above the fourth extensor compartment (distal part of radius)to prepare surgical approach for radius nailing. Make blunt dissection of subcutaneous tissues to avoid injury to the dorsal radial nerve branches. The extensor digitorum tendons are retracted to the direction of the ulna. The entry point for intramedullary nail is located 5 mm from the articular space, on the elbow side of Lister tubercle. Care should be taken of the anatomical position of deep radial nerve branch and the rotation of fragments of fractured bone (tuberosity of the radius should be positioned at an angle of 180° against the styloid process of radius).

Preparation of surgical approach for fibula operation and setting the entry point for nail insertion

Make 2cm longitudinal skin incision in the area of ankle joint (distal part of fibula) to prepare surgical approach for fibula nailing. The incision should be performed posterior to the distal fibula anteriorly directed to the fourth metatarsal, between the sural and superficial peroneal nerve branches. The entry point for intramedullary nail is in line with the centre of the medullary canal, at the medial line of lateral ankle.

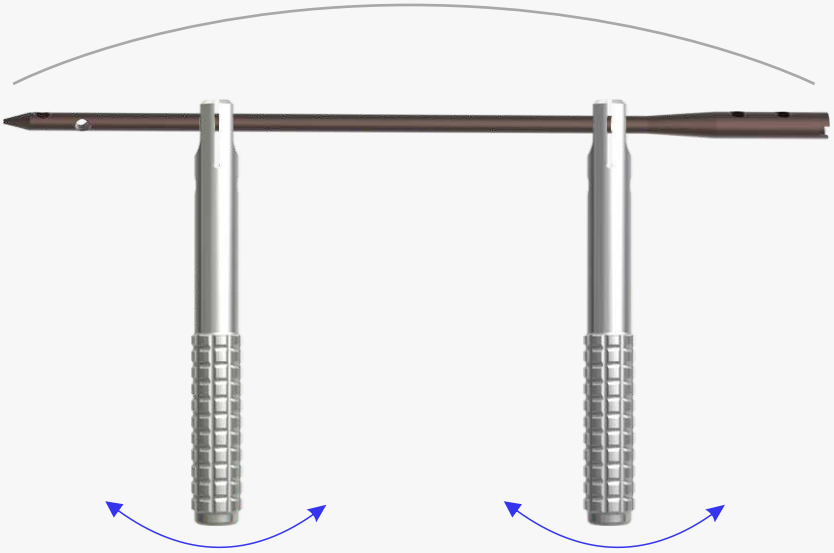


3. PREPARATION OF THE INTRAMEDULLARY NAIL

1. After X-Ray of fractured bone (also X-Ray of healthy limb is recommended), define the length and diameter of nail and its shape using the nail trial **(7-130-12).** The bending is carried out with use of two benders **(7-130-13).** Hold the nail using the benders and bend the nail applying hand force. Do not hold the nail ends (outside the holes), as it could cause damage in holes area.


7-130-12

7-130-13





2. Fix the intramedullary nail to the proximal targeter B **(7-130-01)** with the clamping screw M4 **(7-130-02)** using the socket wrench S6 **(7-130-03).**


7-130-02


7-130-03


7-130-01

4. OPENING THE MEDULLARY CANAL

3. After preparing the surgical approach and locating the entry point for the nail, use the electric drive to insert Kirschner wire **(7-130-14)** into the medullary canal.

Image intensifier should be used to control the process.

The Kirchner wire acts as a guide for cannulated drill.
The Kirchner wire is a single use instrument.

7-130-14

4. Open the medullary canal using the cannulated drill 6/2.2/150 **(7-130-15)** mounted on the surgical drive, and led via Kirschner wire. remove the cannulated drill and Kirschner wire.



7-130-15
7-130-14



5. NAIL INSERTION INTO MEDULLARY CANAL

5. Connect the impactor-extractor **(7-130-04)** to the proximal targeter B **(7-130-01)** (insert it onto the threaded top). Carefully insert the nail into medullary canal using the mallet **(7-130-09).**



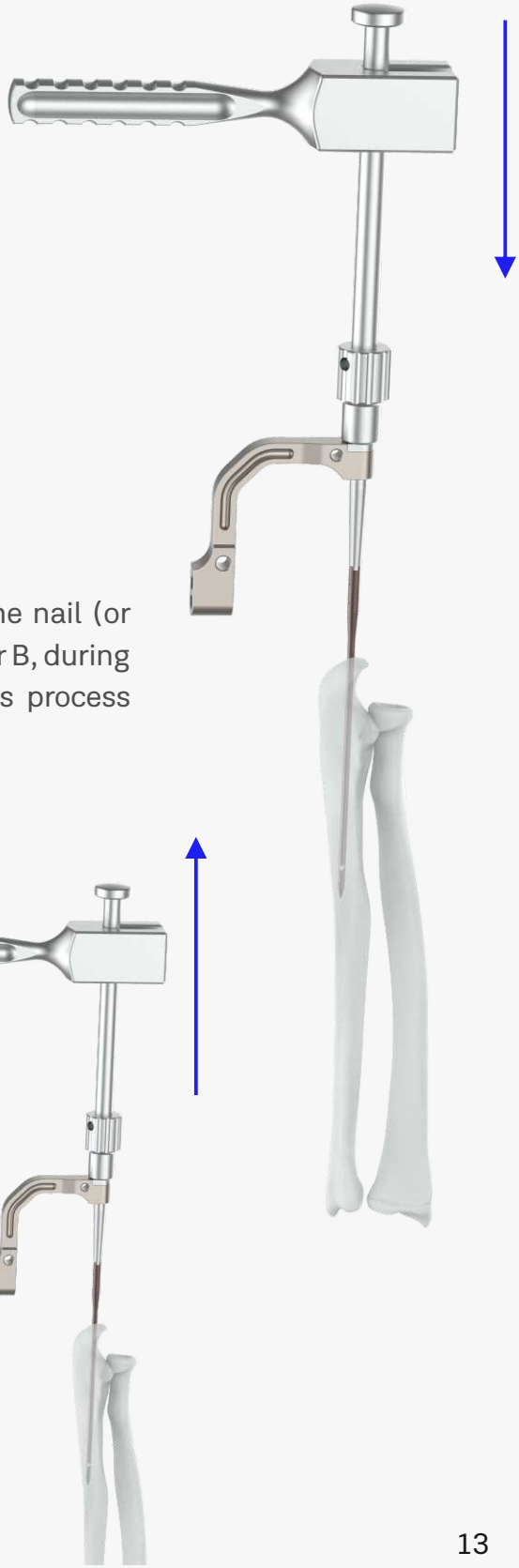
7-130-04



7-130-01



7-130-09



6. Some circumstances may force the surgeon to extract the nail (or remove it partially) without its disconnecting from the targeter B, during the intramedullary nail insertion into medullary canal. This process shall be done with use of mallet **(7-130-09).**



7-130-09

6. DISTAL LOCKING OF THE INTRAMEDULLARY NAIL

Distal locking of the intramedullary nail in the ulna is made using one locking screw (there is a possibility to use two locking screws) by so-called “freehand” technique.

With this technique an image intensifier is used to determine the drilling point and to drill the hole.

It is recommended to use angular attachment with the surgical drive when drilling the holes, so that surgeon’s hands are not directly exposed to X-Rays. After marking the entry point on the skin for drilling the hole in the bone, 1.5cm long incision shall be made through the soft tissues.



7. Using X-Ray machine, place the targeter D **(7-130-08)** in line with the nail hole. The hole in the nail and in the targeter D have to correspond. The teeth of the targeter D have to be inserted into the ulnar cortex. Introduce the protective guide 7/5 **(7-130-05)** and the Kirschner guide B 5/2 **(7-130-06)** into the hole in the targeter D. Mount Kirschner wire **(7-130-14)** in the electric drive and leading through the Kirschner guide , drill the hole in the bone through both cortices.

Use the image intensifier to control drilling process.

Leave Kirschner wire, guides and the targeter in place.



7-130-08



7-130-05

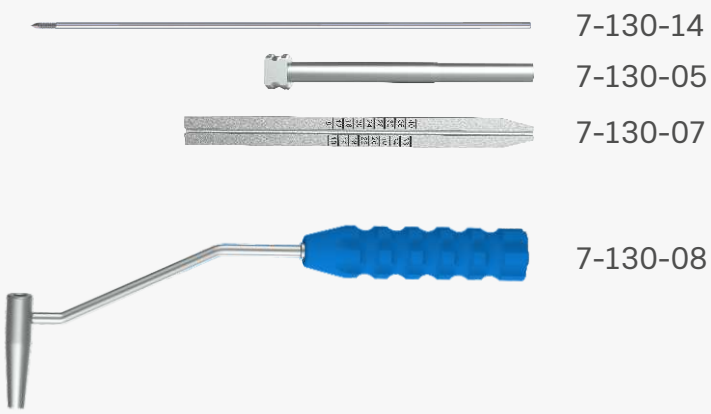


7-130-06

7-130-14

8. Place the screw length measure **(7-130-07)** onto the Kirschner wire **(7-130-14) (left in the Kirschner guide B 5/2 (7-130-05))** until its tip rests on the guide . Read the length of the locking screw on the scale indicated by the end of the Kirschner wire.

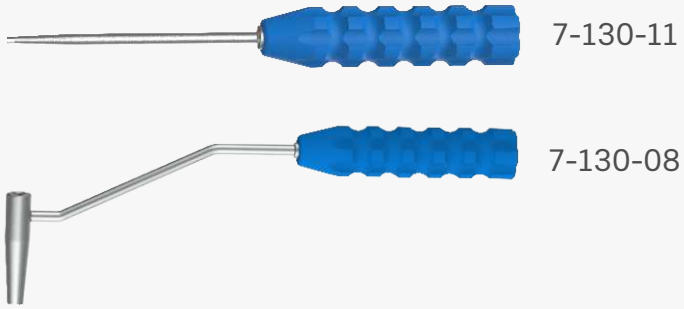
Remove the measure, Kirschner wire and both guides.
Leave the targeter D in place.





9. Introduce the tip of the hexagonal screwdriver S2.5 **(7-130-11)** into the hexagonal socket of the selected locking screw. Then advance both into the targeter D **(7-130-08)** and insert the locking screw in the prepared hole until the head of the screw reaches the bone cortex.

Remove the screwdriver and the targeter D.





7. PROXIMAL LOCKING OF THE INTRAMEDULLARY NAIL

Proximal locking of the intramedullary nail in the ulna is made using two locking screws.



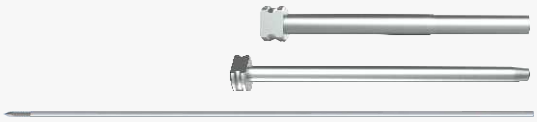
10. Insert the protective guide 7/5**(7-130-05)** with the Kirschner guide B 5/2 **(7-130-06)** into the distal hole in the proximal targeter B **(7-130-01)**. Mount Kirschner wire **(7-130-14)** in the electric drive and leading through the Kirschner guide , drill the hole in the bone through both cortices.

Image intensifier should be used to control the drilling process.

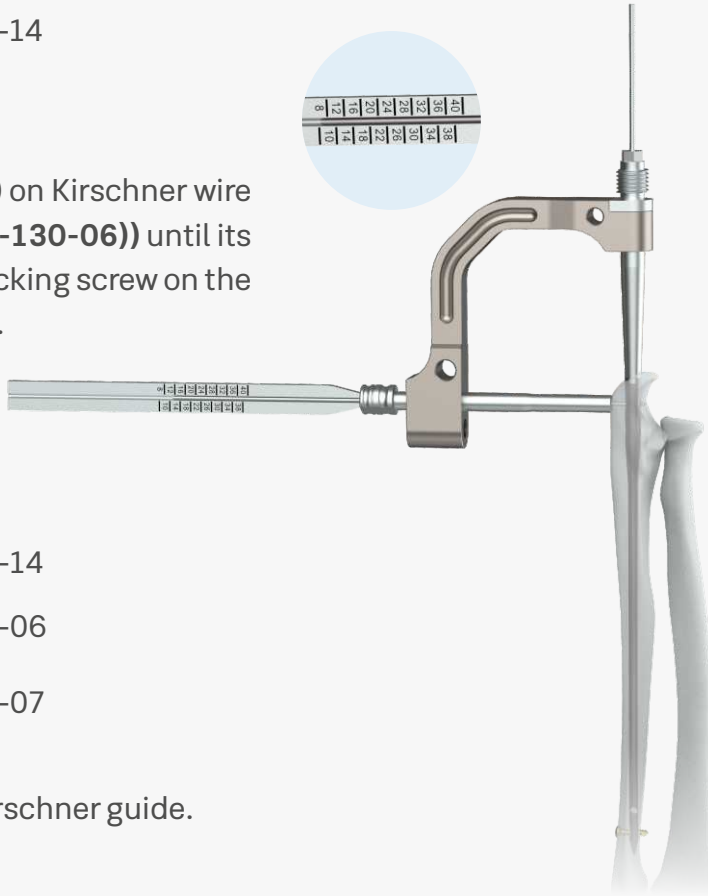
Leave the Kirschner wire and the guides in place.



7-130-01



7-130-05
7-130-06
7-130-14



11. Place the screw length measure **(7-130-07)** on Kirschner wire **(7-130-14)** (left in the Kirschner guide B 5/2 **(7-130-06))** until its tip rests on the guide . Read the length of the locking screw on the scale indicated by the end of the Kirschner wire.



7-130-14
7-130-06
7-130-07

Remove the measure, Kirschner wire and the Kirschner guide.

12. Insert the tip of the hexagonal screwdriver S2.5 **(7-130-11)** into the hexagonal socket of the selected locking screw. Then advance both into the protective guide 7/5 **(7-130-05)** and insert the locking screw in the prepared hole until the head of the screw reaches the bone cortex.

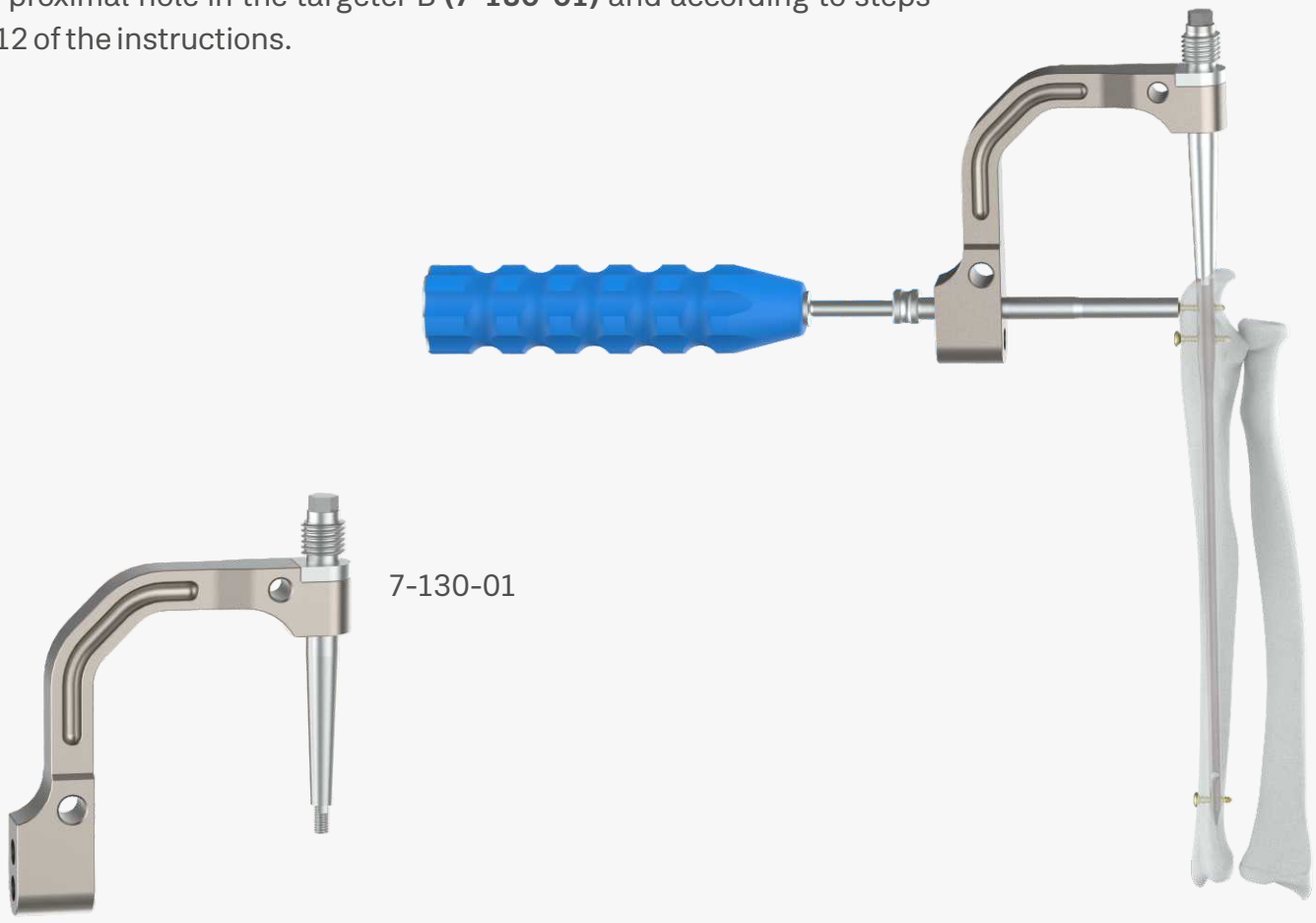
Remove the screwdriver and the protective guide.



7-130-05

7-130-11

13. Locking the nail with the other locking screw should be performed using proximal hole in the targeter B **(7-130-01)** and according to steps 10 to 12 of the instructions.



7-130-01

8. PLACEMENT OF END CAP

14. Unscrew the clamping screw M4 **(7-130-02)** from the shaft of the intramedullary nail with use of the socket wrench S6 **(7-130-03).** Remove the targeter B **(7-130-01)** from the nail locked in the medullary canal.



7-130-03



7-130-02



7-130-01



15. In order to secure the inner thread of the nail against bone in-growth, insert KONZEPT FIBULA & FOREARM NAIL End cap M4x0.7 **(1-042-01TI).** (implant) into the threaded hole using the hexagonal screwdriver S2.5 **(7-130-11).**



7-130-11



9. INTRAMEDULLARY NAIL EXTRACTION

Use the hexagonal screwdriver S2.5 **(7-130-11)** to remove KONZEPT FIBULA & FOREARM NAIL End cap M4x0.7 **(1-042-01TI).** from the nail shaft. Using the socket wrench S6 **(7-130-03)** insert the connector M4 **(7-130-10)** into the threaded hole in the nail shaft.


7-130-11


7-130-03


7-130-10


7-130-04


7-130-09



Unscrew all the locking screws using the screwdriver.

Attach the impactor-extractor **(7-130-04)** to the connector and with help of the mallet **(7-130-09)** remove the nail from the medullary canal.

Konzept Fibula & Forearm Nail with Compression

NON STERILE

	ØDia	Length	Titanium
Ø4mm	Ø4mm	180mm	1-040-001TI
	Ø4mm	200mm	1-040-002TI
	Ø4mm	220mm	1-040-003TI
	Ø4mm	240mm	1-040-004TI
	Ø4mm	260mm	1-040-005TI
Ø5mm	Ø5mm	180mm	1-041-001TI
	Ø5mm	200mm	1-041-002TI
	Ø5mm	220mm	1-041-003TI
	Ø5mm	240mm	1-041-004TI
	Ø5mm	260mm	1-041-005TI

	ØDia	Length	Titanium
Ø4mm	Ø4mm	180mm	1-040-001TI-S
	Ø4mm	200mm	1-040-002TI-S
	Ø4mm	220mm	1-040-003TI-S
	Ø4mm	240mm	1-040-004TI-S
	Ø4mm	260mm	1-040-005TI-S
Ø5mm	Ø5mm	180mm	1-041-001TI-S
	Ø5mm	200mm	1-041-002TI-S
	Ø5mm	220mm	1-041-003TI-S
	Ø5mm	240mm	1-041-004TI-S
	Ø5mm	260mm	1-041-005TI-S



End Cap, M4

NON STERILE

Titanium
1-042-01TI



STERILE

Titanium
1-042-01TI-S

Compression End Cap, M4

NON STERILE

Titanium
1-043-02TI



STERILE

Titanium
1-043-02TI-S

SCREWS

Cortical Screw, Self-Tapping (Hex Head)



NON STERILE

ØDia	Length	Titanium
Ø1.5/2.7mm	16mm	1-044-01TI
Ø1.5/2.7mm	18mm	1-044-02TI
Ø1.5/2.7mm	20mm	1-044-03TI
Ø1.5/2.7mm	22mm	1-044-04TI
Ø1.5/2.7mm	24mm	1-044-05TI
Ø1.5/2.7mm	26mm	1-044-06TI

STERILE

ØDia	Length	Titanium
Ø1.5/2.7mm	16mm	1-044-01TI-S
Ø1.5/2.7mm	18mm	1-044-02TI-S
Ø1.5/2.7mm	20mm	1-044-03TI-S
Ø1.5/2.7mm	22mm	1-044-04TI-S
Ø1.5/2.7mm	24mm	1-044-05TI-S
Ø1.5/2.7mm	26mm	1-044-06TI-S

2.7mm Cortical Screw, Self Tapping (Hex Head)



NON STERILE

Length	Titanium
16	TI-103.216
18	TI-103.218
20	TI-103.220
22	TI-103.222
24	TI-103.224
26	TI-103.226
28	TI-103.228
30	TI-103.230
32	TI-103.232
34	TI-103.234

STERILE

Length	Titanium
16	TI-103.216-S
18	TI-103.218-S
20	TI-103.220-S
22	TI-103.222-S
24	TI-103.224-S
26	TI-103.226-S
28	TI-103.228-S
30	TI-103.230-S
32	TI-103.232-S
34	TI-103.234-S

IMPLANT ORDER INFORMATION

Code	Set Consisting Of	Units
1-040-001TI	Konzept Fibula & Forearm Nail with Compression, Ø4mm x Length 180mm, Titanium	1
1-040-002TI	Konzept Fibula & Forearm Nail with Compression, Ø4mm x Length 200mm, Titanium	1
1-040-003TI	Konzept Fibula & Forearm Nail with Compression, Ø4mm x Length 220mm, Titanium	1
1-040-004TI	Konzept Fibula & Forearm Nail with Compression, Ø4mm x Length 240mm, Titanium	1
1-040-005TI	Konzept Fibula & Forearm Nail with Compression, Ø4mm x Length 260mm, Titanium	1
1-041-001TI	Konzept Fibula & Forearm Nail with Compression, Ø5mm x Length 180mm, Titanium	1
1-041-002TI	Konzept Fibula & Forearm Nail with Compression, Ø5mm x Length 200mm, Titanium	1
1-041-003TI	Konzept Fibula & Forearm Nail with Compression, Ø5mm x Length 220mm, Titanium	1
1-041-004TI	Konzept Fibula & Forearm Nail with Compression, Ø5mm x Length 240mm, Titanium	1
1-041-005TI	Konzept Fibula & Forearm Nail with Compression, Ø5mm x Length 260mm, Titanium	1
1-042-01TI	End Cap, M4	2
1-043-02TI	Compression End Cap, M4	2

SCREWS ORDER INFORMATION

Code	Set Consisting Of	Unit
1-044-01TI	Cortical Screw, Self-Tapping (Hex Head), Ø1.5/2.7mm, Length 16mm, Titanium	2
1-044-02TI	Cortical Screw, Self-Tapping (Hex Head), Ø1.5/2.7mm, Length 18mm, Titanium	2
1-044-03TI	Cortical Screw, Self-Tapping (Hex Head), Ø1.5/2.7mm, Length 20mm, Titanium	2
1-044-04TI	Cortical Screw, Self-Tapping (Hex Head), Ø1.5/2.7mm, Length 22mm, Titanium	2
1-044-05TI	Cortical Screw, Self-Tapping (Hex Head), Ø1.5/2.7mm, Length 24mm, Titanium	2
1-044-06TI	Cortical Screw, Self-Tapping (Hex Head), Ø1.5/2.7mm, Length 26mm, Titanium	2
TI-103.216	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 16mm, Titanium	2
TI-103.218	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 18mm, Titanium	2
TI-103.220	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 20mm, Titanium	2
TI-103.222	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 22mm, Titanium	2
TI-103.224	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 24mm, Titanium	2
TI-103.226	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 26mm, Titanium	2
TI-103.228	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 28mm, Titanium	2
TI-103.230	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 30mm, Titanium	2
TI-103.232	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 32mm, Titanium	2
TI-103.234	2.7mm Cortical Screw, Self Tapping (Hex Head), Length 34mm, Titanium	2

INSTRUMENTS

7-130-01 Proximal Targeter B for Knozept Fibula & Forearm Nail



7-130-02 Clamping Screw M4



7-130-03 Socket Wrench, Hex 7mm



7-130-04 Impactor - Extractor for Konzept Fibula & Forearm Nail



7-130-05 Protective Guide Ø7/5mm



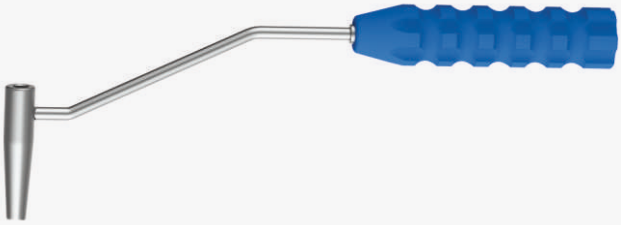
7-130-06 Kirschner Wire Guide B Ø5/2mm



7-130-07 Screw Length Measure upto 40mm



7-130-08 Targeter D for Konzept Fibula & Forearm Nail



7-130-09 Mallet for Konzept Fibula & Forearm Nail



7-130-10 Connector M4



7-130-11 Screwdriver, Hex 2.0mm for Konzept Fibula & Forearm Nail



7-130-12 Nail Trial

7-130-13

Nail Bender Pair



7-130-14

Kirschner Wire one side Trocar Tip, Ø2.0mm x Length 200mm

7-130-15

Cannulated Drill, Ø6.0 x 2.2 x 150mm



7-130-16

Kirschner Wire Threaded Ti, Ø1.5mm x Thread Length 7.5mm x Length 180mm

7-130-17

Instrument Tray for Konzept Fibula & Forearm Nail Instrument Set



7-130-18

Container with Lid for Konzept Fibula & Forearm Nail Instrument Set



KONZEPT FIBULA AND FOREARM NAILING SYETEM

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The implants and instruments in this catalogue are intended for use by qualified orthopedic trauma surgeons trained in fracture fixation and intramedullary nailing procedures. Improper selection of the implant, incorrect surgical technique, misuse, or insufficient surgical experience may result in implant failure or other complications.

REGULATORY COMPLIANCE CERTIFIED

CE Approved (EUMDR-2017/745)
USFDA 510(k)
ISO 13485:2016
CDSCO
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