



# Surgical Technique

## Cable Plate System

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# 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



# Guidelines

This publication sets forth detailed recommended procedures for using Auxein Medical devices and instruments.

It offers guidance that needs to be heeded. However, with any such technical guide, each surgeon must consider the unique needs of each patient and make appropriate adjustments when and as required.

A workshop training under DAIS Academy by Auxein will provide assistance prior to first surgery. It is vital to know that all non-sterile devices must be cleaned and sterilized before use.

Moreover, multi-component instruments must be disassembled for cleaning. The surgeon must discuss all relevant risks, including the finite lifetime of the device, with the patient, when necessary.

**Please NOTE** that all the bone screws referenced in this document here are not approved for screw attachment or fixation in the areas not mentioned in this publication.

## **Warning:**

This description is not sufficient for immediate application of the instrumentation. Instruction by a surgeon experienced in handling this instrumentation is highly recommended.



## PRODUCT OVERVIEW

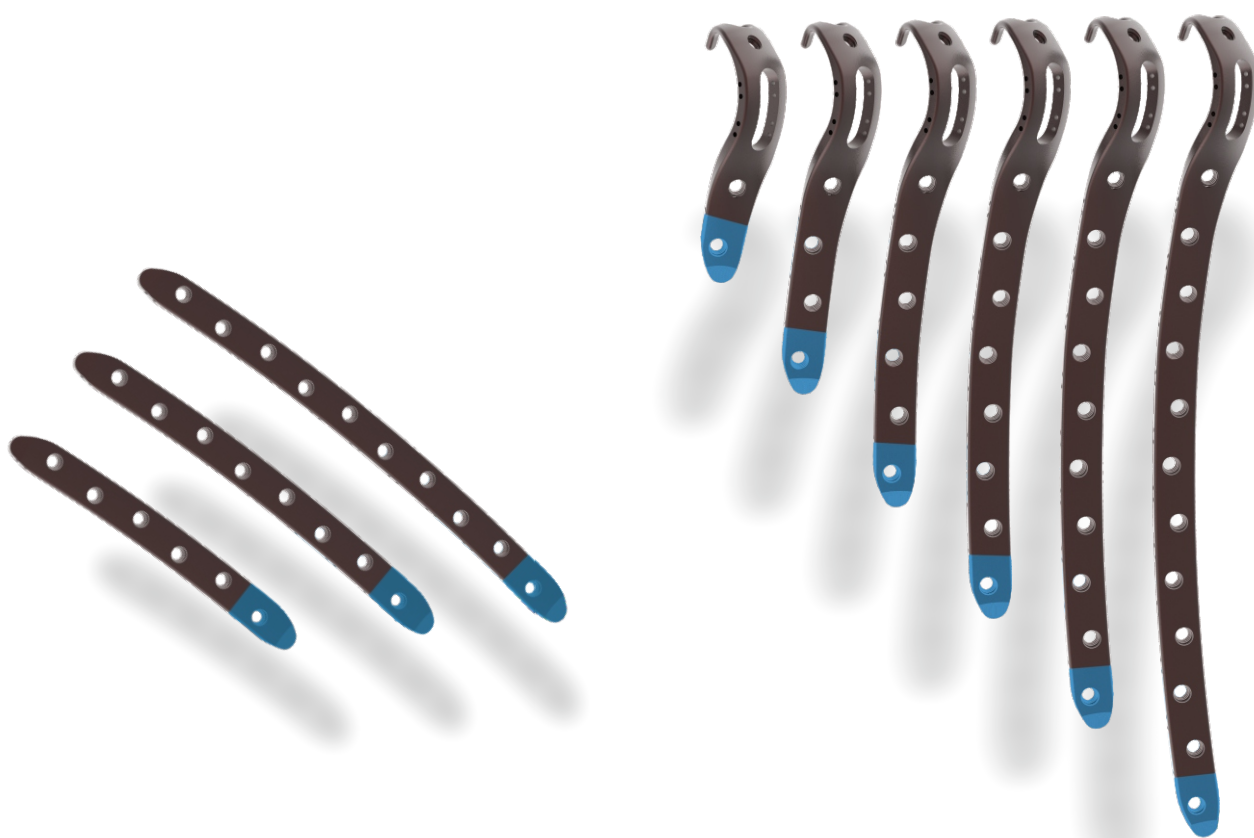
The Wise-Lock Cable System has a primary goal of development was an ergonomic, compact instrument design which simplifies handling and decreases application errors.

### **Multifunctional:**

A variety of articles (implants and instruments) make the cable system a very versatile system, enabling it to be used for a wide range of applications (e.g. periprosthetic fractures, temporary reduction). All implants and instruments were optimized without compromise for the specific tasks of a cable system. This simplifies the surgical technique (e.g. no contouring of plates necessary)

### **Compatible with Auxein implants:**

The Wise-Lock Cable system is compatible with the existing Auxein Medical plates and screws, both in stainless steel and titanium. The cable assemblies are available for stainless steel and titanium implant indications



**Note:** The technical details mentioned above are specifically based on the standard Wise-Lock Cable System

## INDICATION

- Orthopaedic trauma surgery (incl. periprosthetic fractures, femur fractures, olecranon fractures, patella fractures, humerus and ankle fractures)
- Acromioclavicular dislocation
- Hip and acetabular fractures
- Prophylactic banding in total joint replacements
- Temporary fixation during open reductions
- Reattachment of the greater trochanter following osteotomy in total hip arthroplasty or fractures

# Shaft

## **Cable Plate Surgical Technique**

## 1. Position patient and reduce fracture

Position the patient for the respective surgical approach, and reduce the fracture.

## 2. Choose the appropriate cable passer

Select the appropriate cable passer (**7-035-09**). The size and shape of the cable passer depends upon the circumference of the bone and access to the site. Select a cable passer that will allow the instrument to pass around the bone without causing significant damage to soft tissues or excessive stripping of the periosteum.

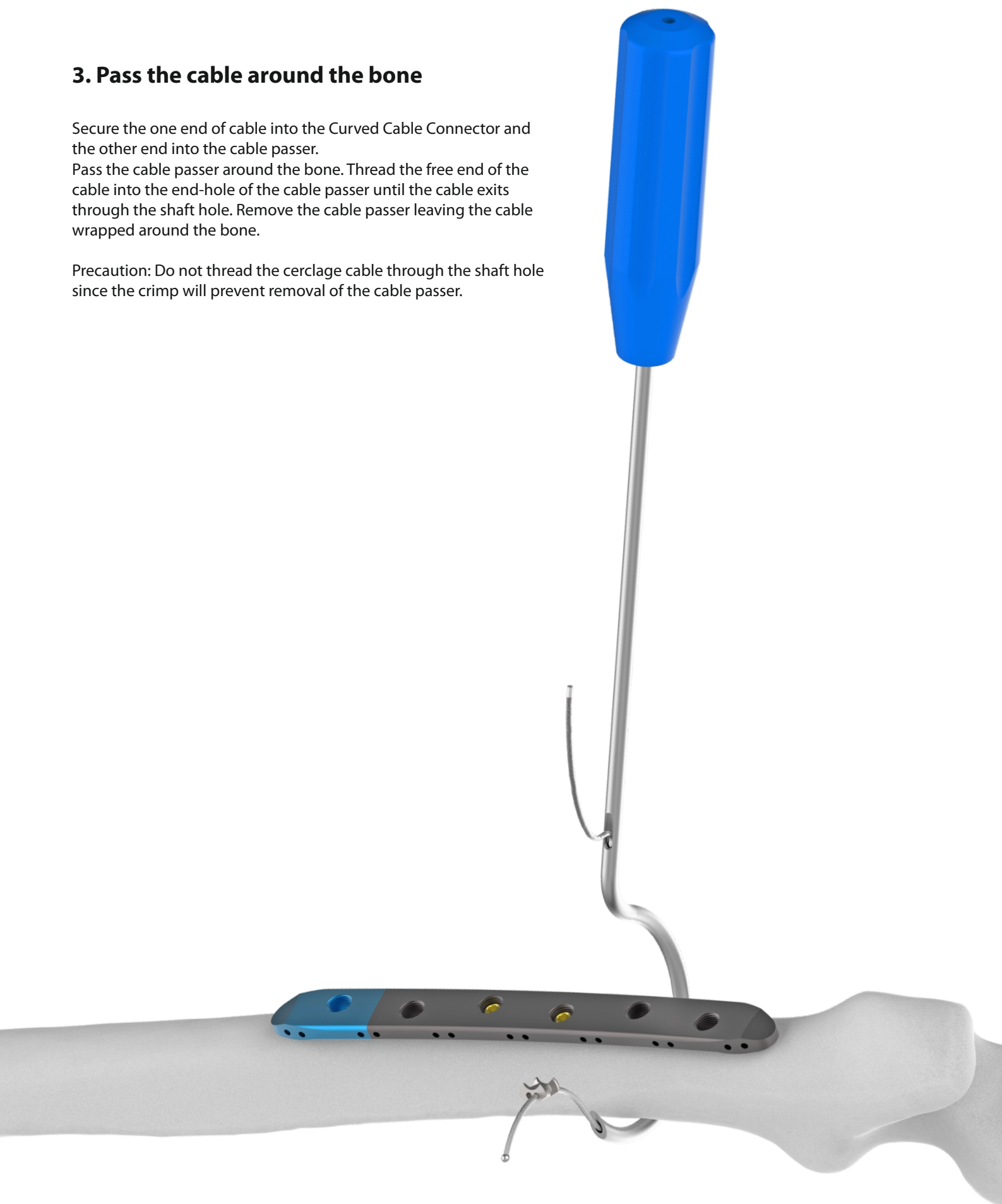


### 3. Pass the cable around the bone

Secure the one end of cable into the Curved Cable Connector and the other end into the cable passer.

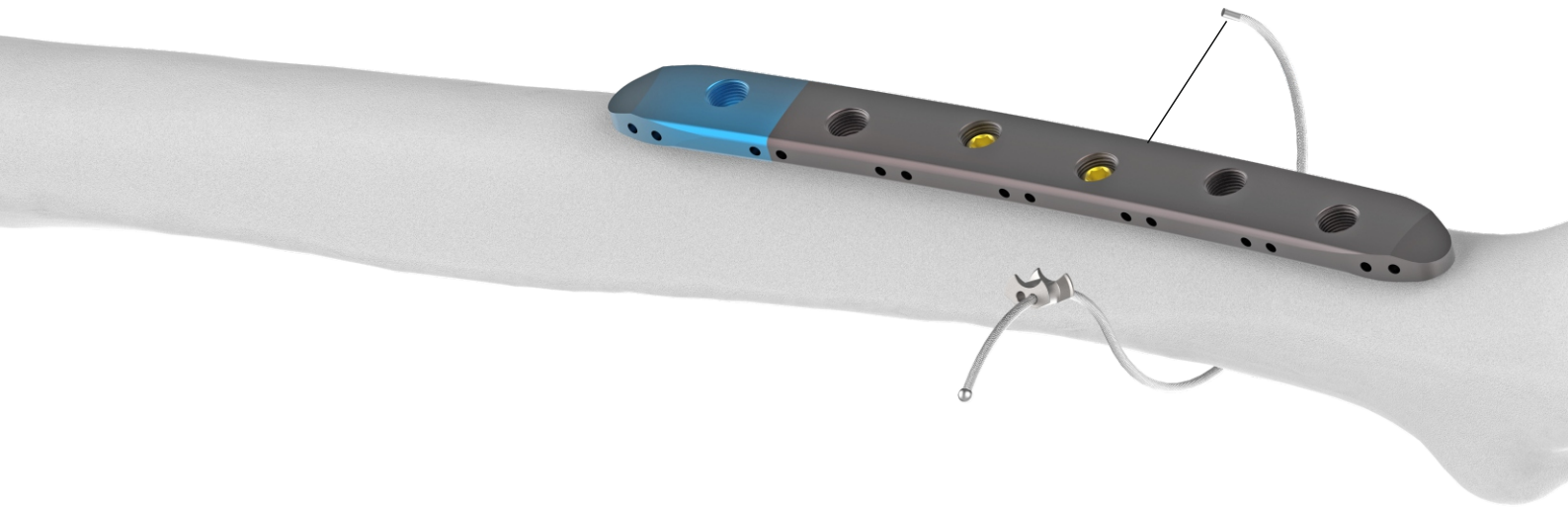
Pass the cable passer around the bone. Thread the free end of the cable into the end-hole of the cable passer until the cable exits through the shaft hole. Remove the cable passer leaving the cable wrapped around the bone.

Precaution: Do not thread the cerclage cable through the shaft hole since the crimp will prevent removal of the cable passer.



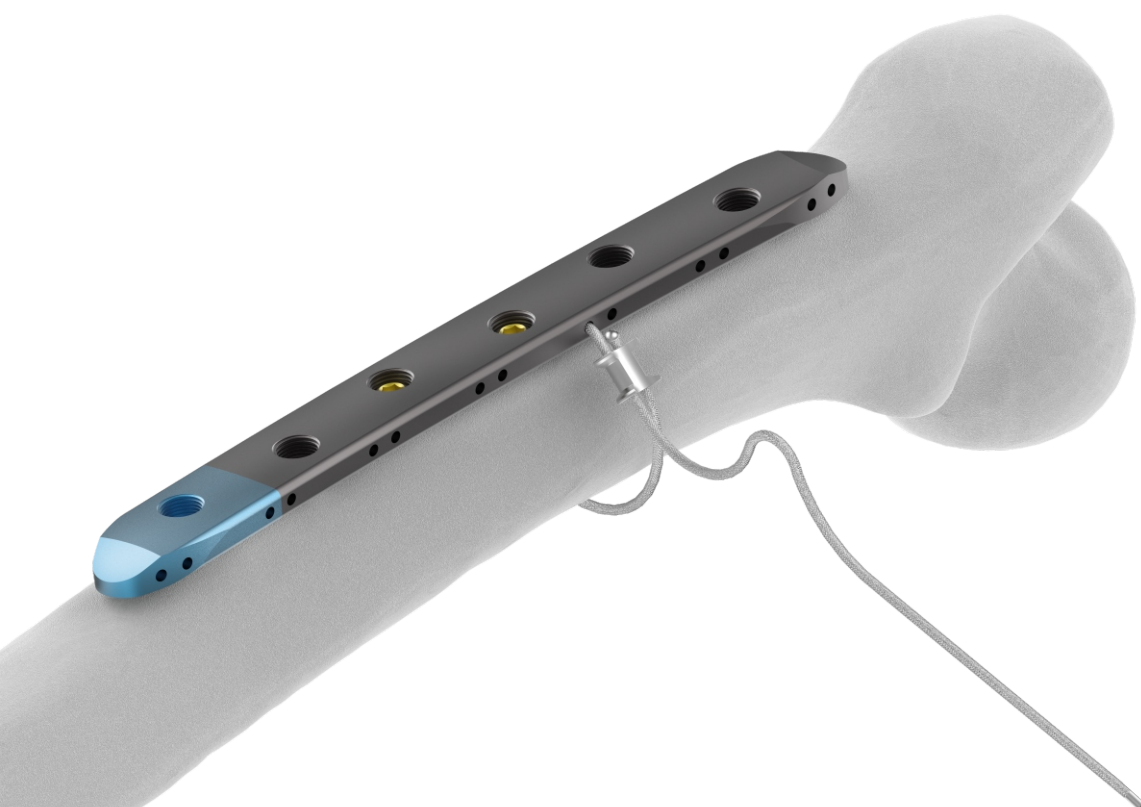
#### 4a. Removal of Cable Passer

The Cable Passer is withdrawn leaving the cable on the other side of plate to be threaded and secure into the Curved Cable Connector.



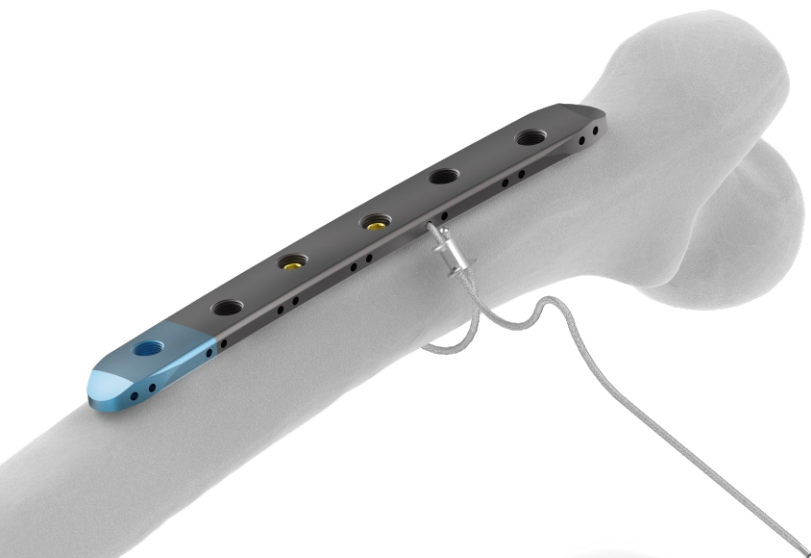
#### 4b. Wrapping of Cable around the Plate and the Bone

Thread and secure the free end of the cable into the Curved Cable Connector passing through the plate.



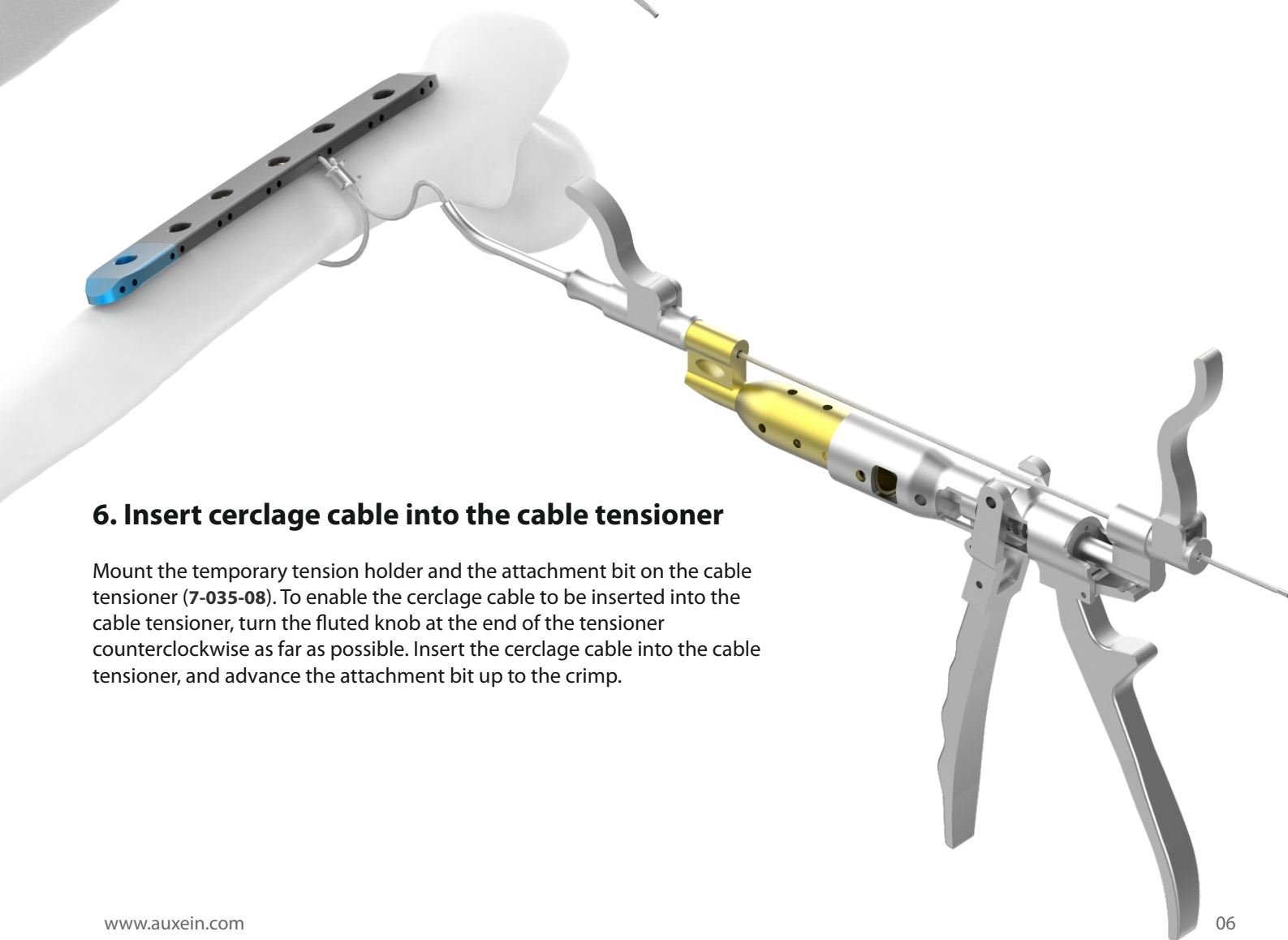
## 5. Position cable crimp

Insert the end of the cable through the free hole of the crimp, and place the crimp in the desired position on the bone. When placing the crimp, ensure that it is covered by soft tissue and securely anchored in the bone. The four points on the underside of the crimp must contact the bone, and the smooth side must face upwards.



## 6. Insert cerclage cable into the cable tensioner

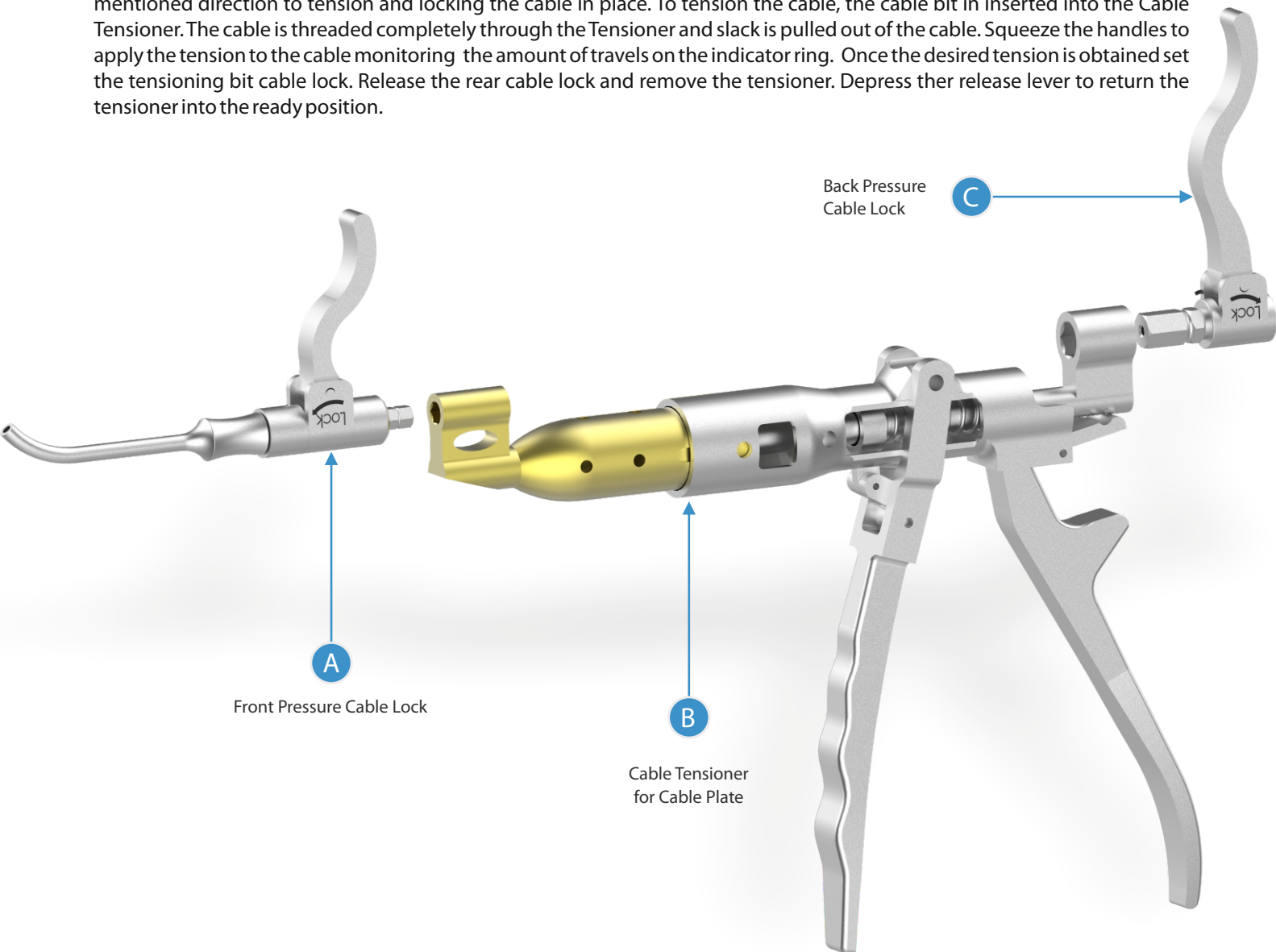
Mount the temporary tension holder and the attachment bit on the cable tensioner (7-035-08). To enable the cerclage cable to be inserted into the cable tensioner, turn the fluted knob at the end of the tensioner counterclockwise as far as possible. Insert the cerclage cable into the cable tensioner, and advance the attachment bit up to the crimp.



## Assembling & Functioning of Cable Tensioner

Cable tensioning in cable plating system can be carried out after assembling the below listed three individual components/ instruments together. The name of the instruments are mentioned below. The front pressure cable lock is secure into the front portion of the cable tensioner and the back pressure cable lock is secure into the back of Cable tensioner.

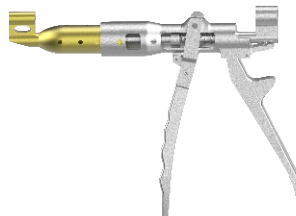
After assembling of the cable tensioner we can lock the front and back pressure cable lock instrument according to the mentioned direction to tension and locking the cable in place. To tension the cable, the cable bit is inserted into the Cable Tensioner. The cable is threaded completely through the Tensioner and slack is pulled out of the cable. Squeeze the handles to apply the tension to the cable monitoring the amount of travels on the indicator ring. Once the desired tension is obtained set the tensioning bit cable lock. Release the rear cable lock and remove the tensioner. Depress the release lever to return the tensioner into the ready position.



**A** Front Pressure Cable Lock



**B** Cable Tensioner for Cable Plate



**C** Back Pressure Cable Lock

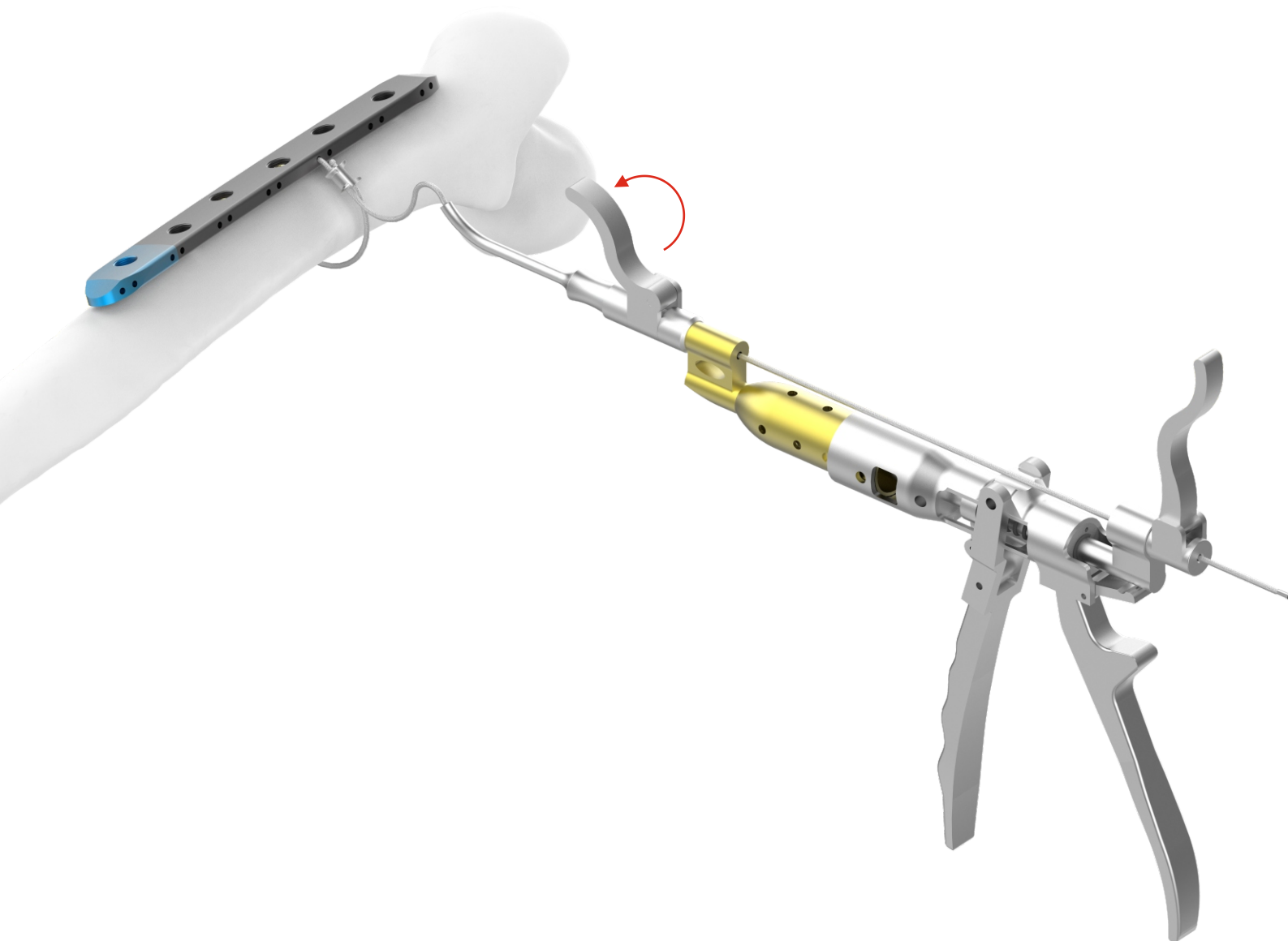


## 7. Tension cerclage cable

To tension the cable, the cable bit is inserted into the Cable Tensioner (7-035-08). The cable is threaded completely through the Tensioner and slack is pulled out of the cable. Squeeze the handles to apply the tension to the cable monitoring the amount of travels on the indicator ring. Once the desired tension is obtained set the tensioning bit cable lock. Release the rear cable lock and remove the tensioner. Depress the release lever to return the tensioner into the ready position.

If the cerclage cable is tensioned above the specified level, it may tear out of the crimp or cut through or crush osteoporotic bone.

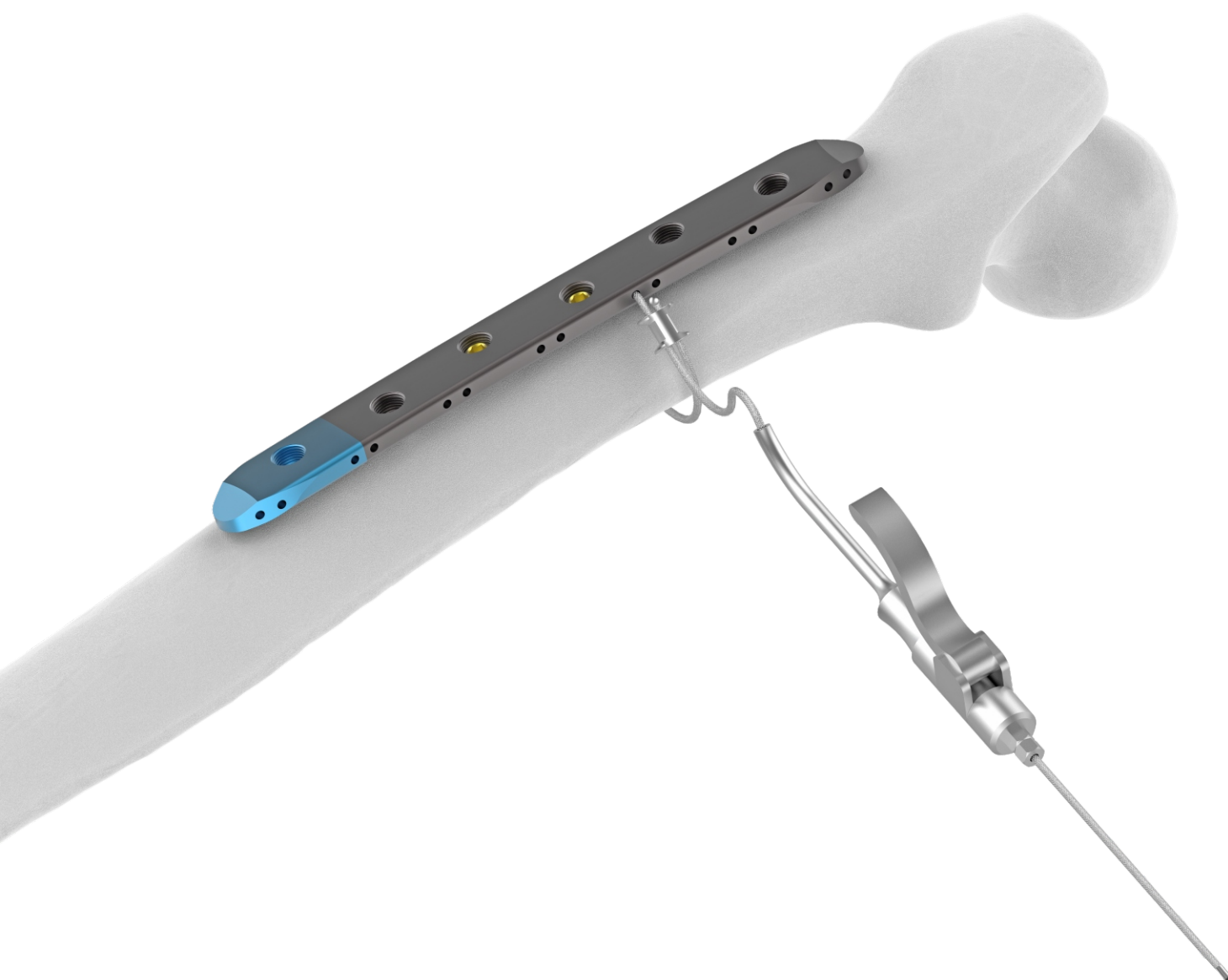
Warning: The tension of the cerclage cable should not exceed 40 kg (for the cable 1.0 mm) and 50 kg (for the cable 1.7 mm).



## 8. Temporary fixation (optional)

To temporarily fix a cerclage cable, the cable tensioner can be removed without causing loss of tension thanks to the temporary tension holder

Pull back the lever of the cam lock on the Front Pressure Cable Lock, ID: Ø1.0mm, for Cable Plate **(7-035-04)**, and loosen and remove the cable tensioner. Using this procedure, any cerclage cable can be retensioned and/or repositioned before definitive fixation.



## 9. Secure cerclage cable with cable crimp

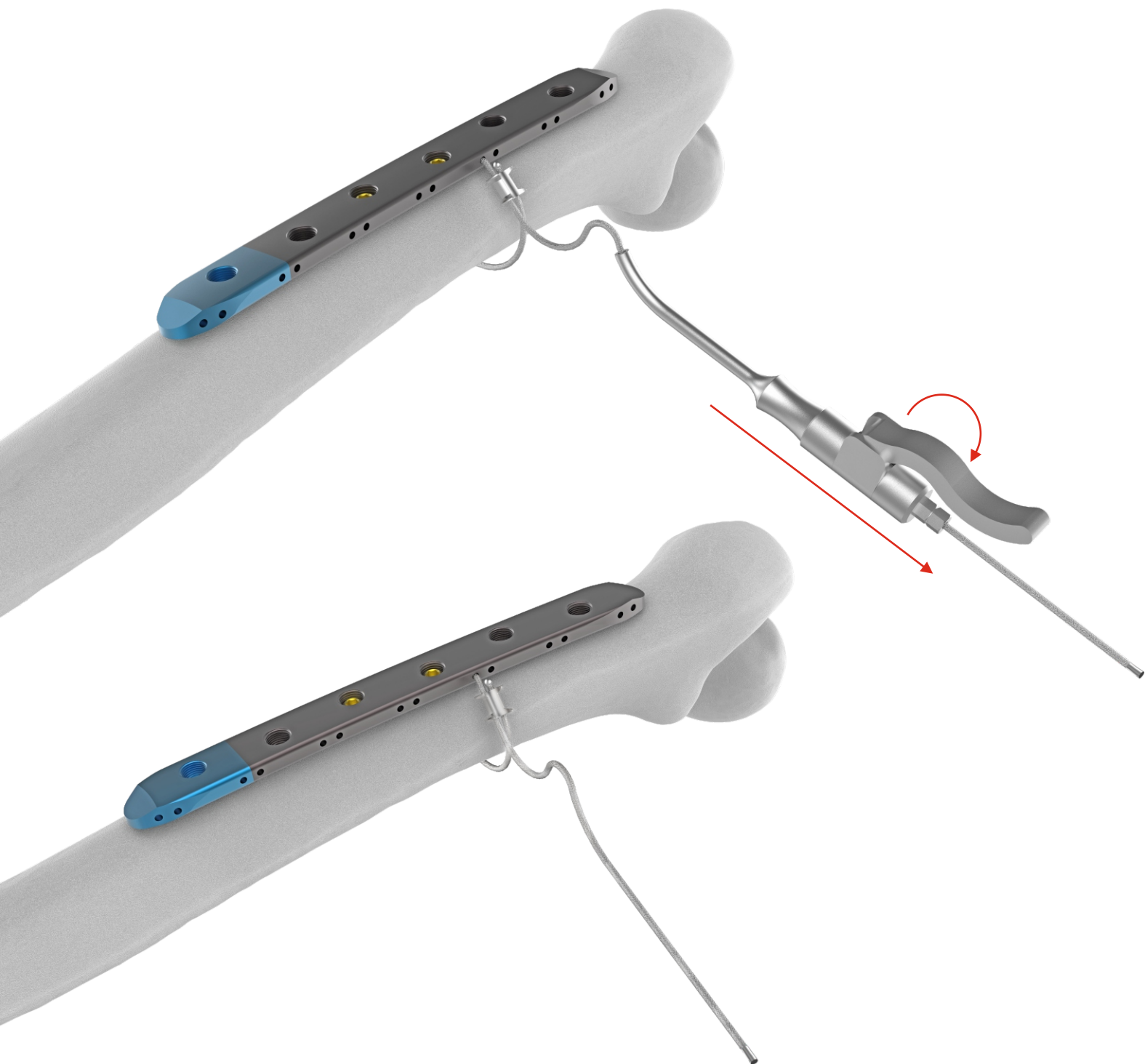
When the desired cable tension is reached, the cerclage cable can be secured with the crimp. Place the jaws of the Flat Connector Crimper for Cable Plate (**7-035-01**) on the crimp, ensuring that the crimp is centred and is correctly held in the crimper jaws. Pull the inner start lever first, then squeeze the outer handles to complete crimping. The toothed mechanism of the cable crimper establishes the appropriate compression pressure for securing the crimp.

Precaution: Incorrectly placing the cable crimper can lead to crimp failure.



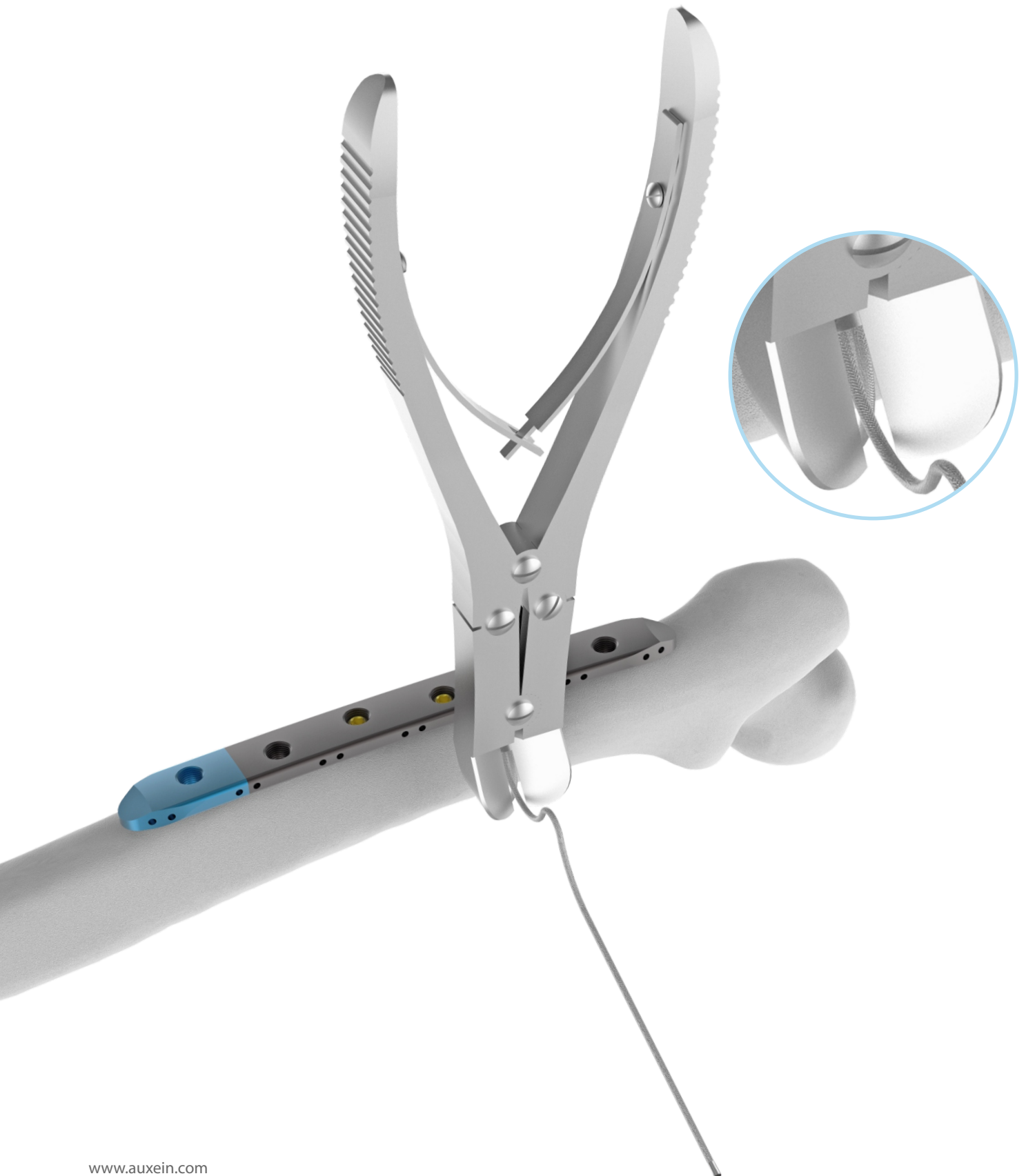
## 10. Remove Temporary fixation

When the cerclage cable is secured and crimped into the curved cable connector turn the fluted knob on of the Flat Connector Crimper for Cable Plate (**7-035-01**) as far as possible, and remove the temporary tension holders are wed, push the lever of the cam lock backward, and pull the holder off the cable.



## 11. Cut cable

Cut the loose end of the cable using the Spicule Cutter for Cable Plate (**7-035-02**). Position the cutting jaws very close to the crimp, and make the cut in one action to produce a clean cut. Ensure that the adjacent cerclage cables do not get damaged.





## Implant Removal

In case the physician decides to remove the implants, implants can be removed by using general surgical instruments

# Femur

## **Cable Plating Surgical Technique**

## 1. Position patient and reduce fracture

Position the patient for the respective surgical approach, and reduce the fracture.

## 2. Choose the appropriate cable passer

Select the appropriate cable passer (**7-035-09**). The size and shape of the cable passer depends upon the circumference of the bone and access to the site. Select a cable passer that will allow the instrument to pass around the bone without causing significant damage to soft tissues or excessive stripping of the periosteum.

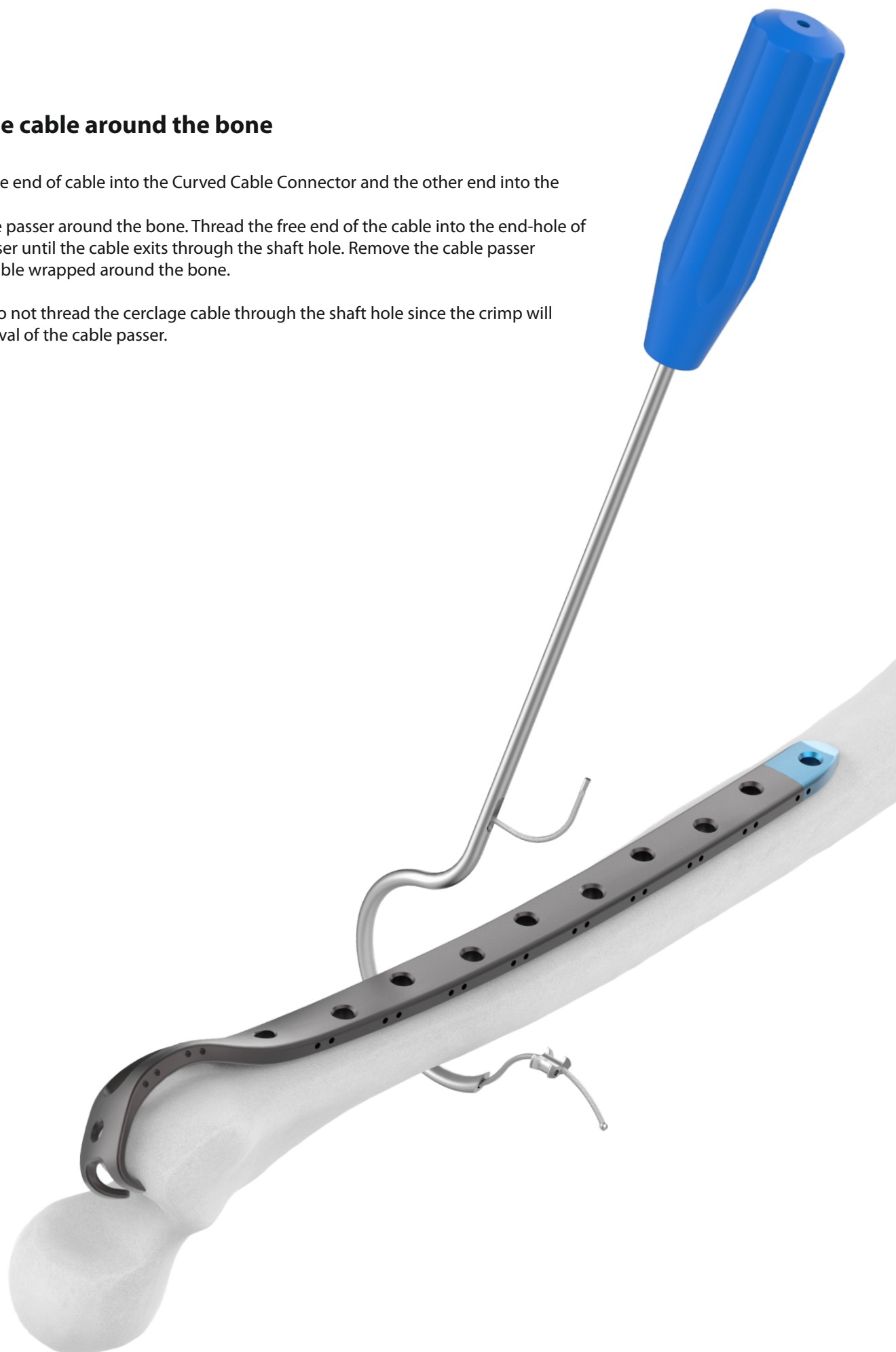


### 3. Pass the cable around the bone

Secure the one end of cable into the Curved Cable Connector and the other end into the cable passer.

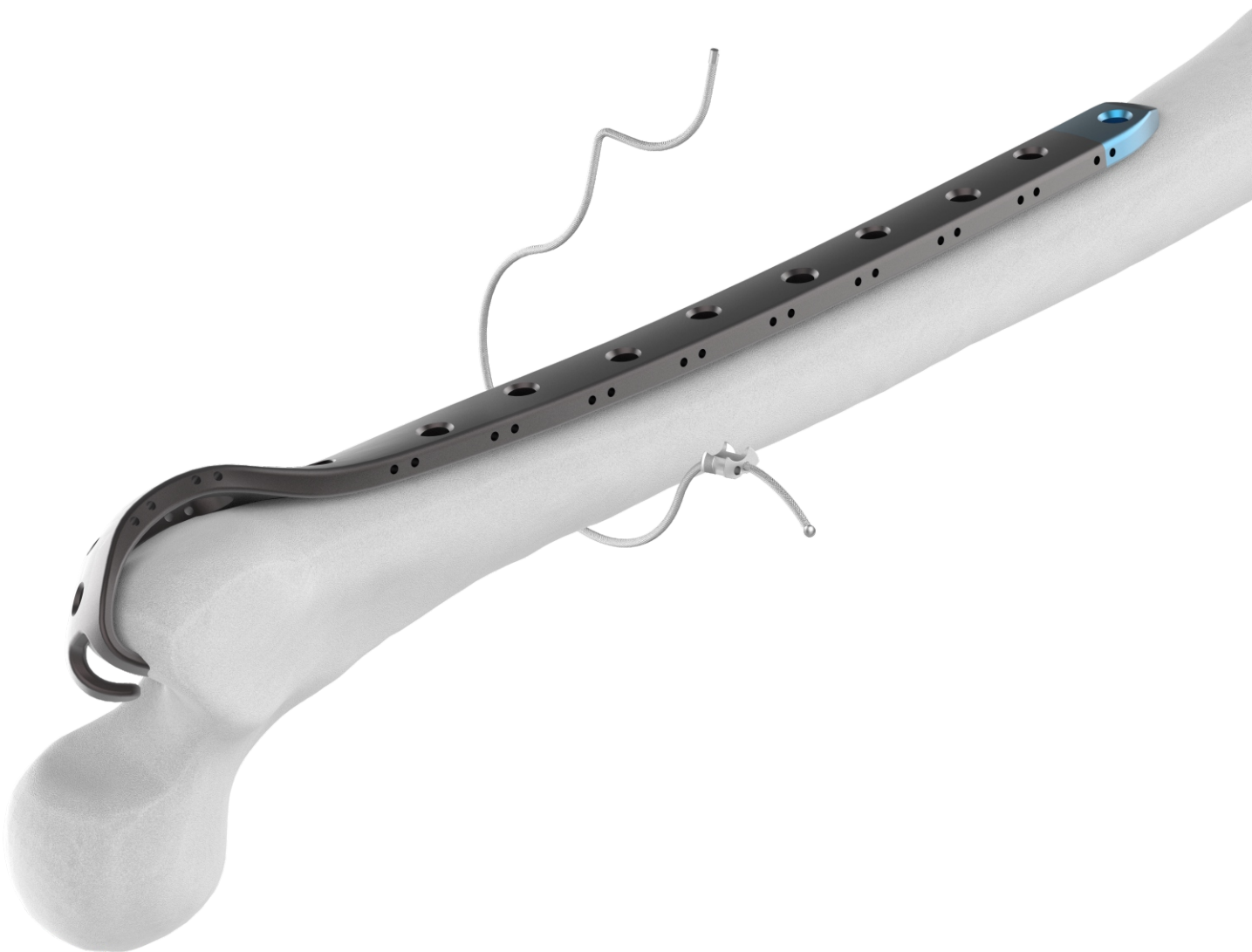
Pass the cable passer around the bone. Thread the free end of the cable into the end-hole of the cable passer until the cable exits through the shaft hole. Remove the cable passer leaving the cable wrapped around the bone.

Precaution: Do not thread the cerclage cable through the shaft hole since the crimp will prevent removal of the cable passer.



#### **4a. Removal of Cable Passer**

The Cable Passer is withdrawn leaving the cable on the other side of plate to be threaded and secure into the Curved Cable Connector.



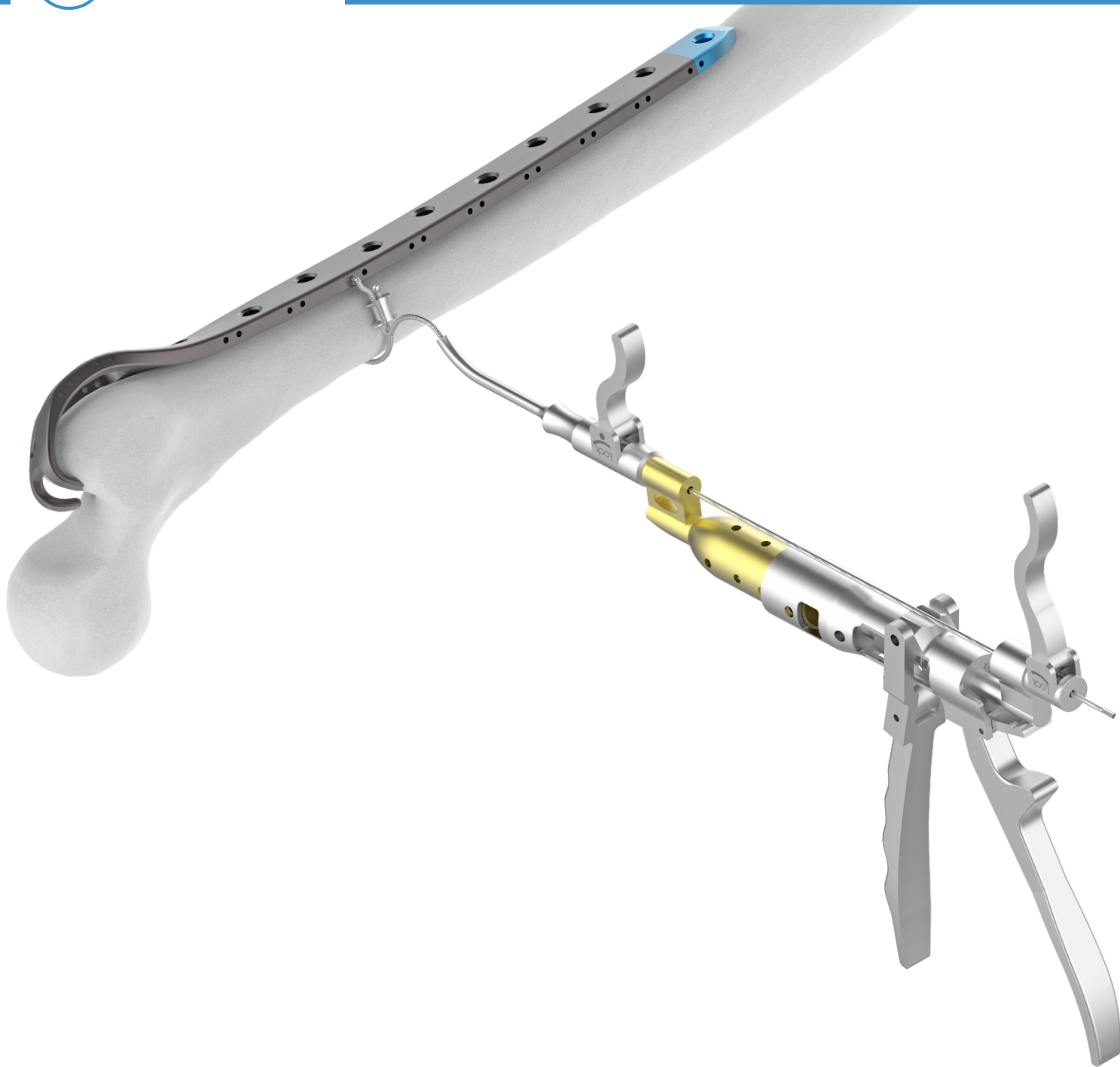
#### **4b. Wrapping of Cable around the Plate and the Bone**

Thread and secure the free end of the cable into the Curved Cable Connector passing through the plate.

## 5. Position cable crimp

Insert the end of the cable through the free hole of the crimp, and place the crimp in the desired position on the bone. When placing the crimp, ensure that it is covered by soft tissue and securely anchored in the bone. The four points on the underside of the crimp must contact the bone, and the smooth side must face upwards.





## 6. Insert cerclage cable into the cable tensioner

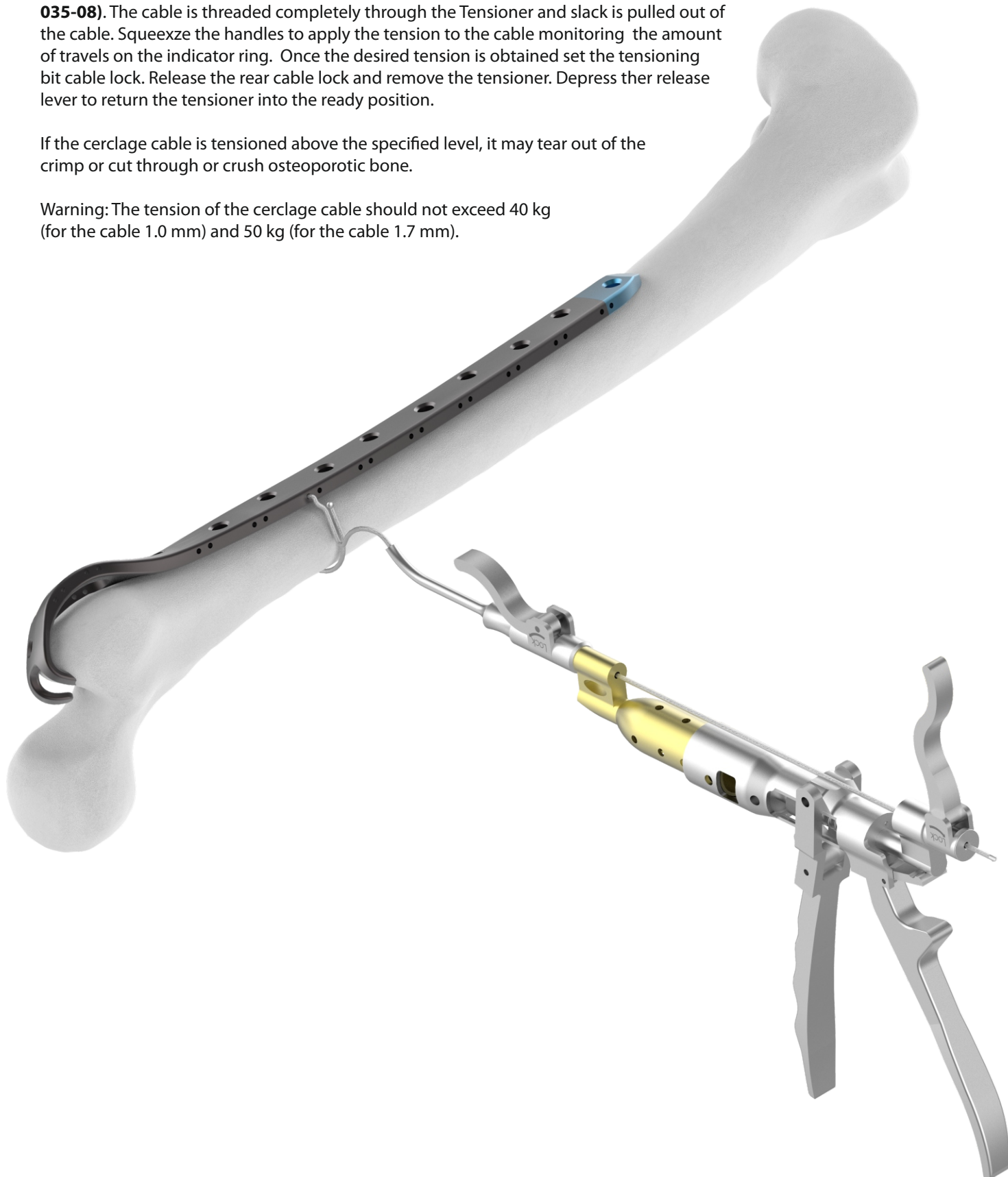
Mount the temporary tension holder and the attachment bit on the Cable Tensioner for Cable Plate (**7-035-08**). To enable the cerclage cable to be inserted into the cable tensioner, turn the fluted knob at the end of the tensioner counterclockwise as far as possible. Insert the cerclage cable into the cable tensioner, and advance the attachment bit up to the crimp.

## 7. Tension cerclage cable

To tension the cable, the cable bit is inserted into the Cable Tensioner for Cable Plate (**7-035-08**). The cable is threaded completely through the Tensioner and slack is pulled out of the cable. Squeeze the handles to apply the tension to the cable monitoring the amount of travels on the indicator ring. Once the desired tension is obtained set the tensioning bit cable lock. Release the rear cable lock and remove the tensioner. Depress the release lever to return the tensioner into the ready position.

If the cerclage cable is tensioned above the specified level, it may tear out of the crimp or cut through or crush osteoporotic bone.

Warning: The tension of the cerclage cable should not exceed 40 kg (for the cable 1.0 mm) and 50 kg (for the cable 1.7 mm).



## 8. Temporary fixation (optional)

To temporarily fix a cerclage cable, the cable tensioner can be removed without causing loss of tension thanks to the temporary tension holder

Pull back the lever of the cam lock on the Front Pressure Cable Lock, ID: Ø1.0mm, for Cable Plate **(7-035-04)** holder, and loosen and remove the cable tensioner. Using this procedure, any cerclage cable can be retensioned and/or repositioned before definitive fixation.



## 9. Secure cerclage cable with cable crimp

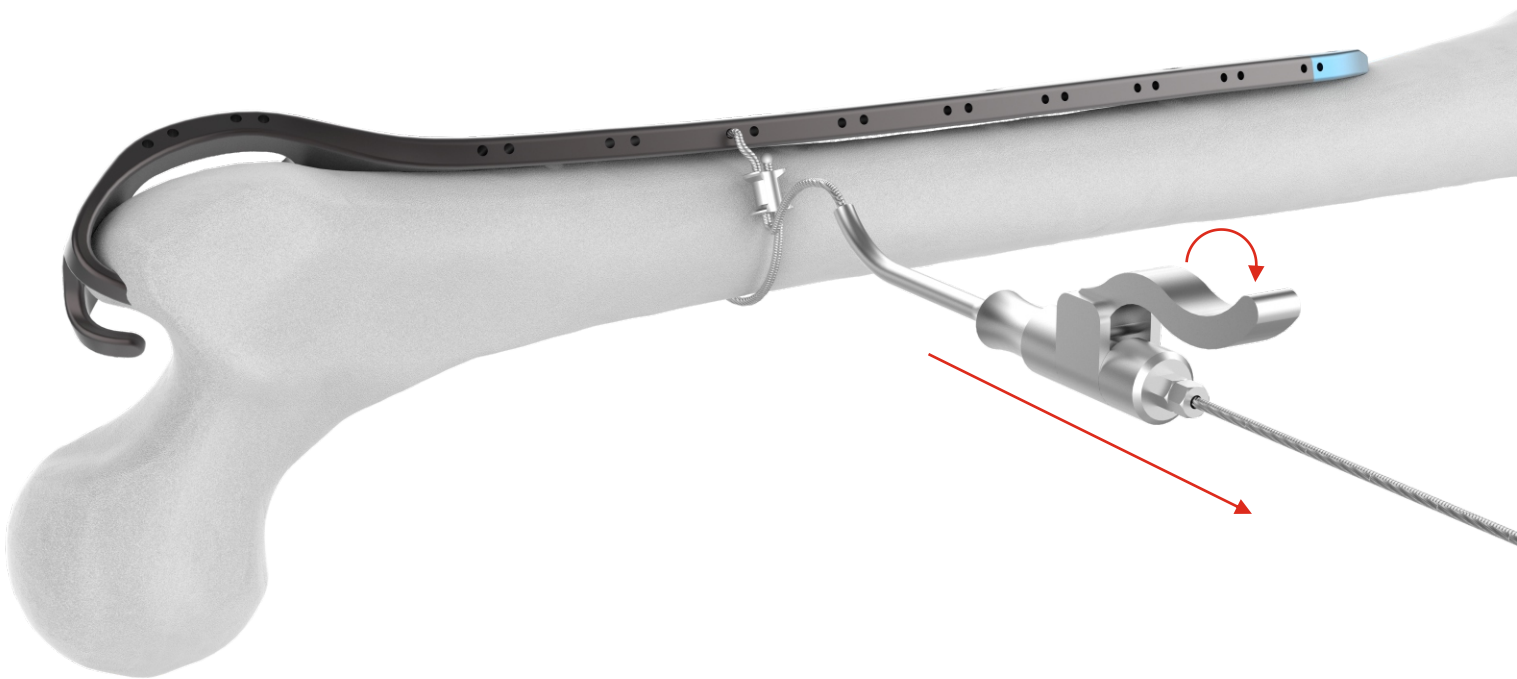
When the desired cable tension is reached, the cerclage cable can be secured with the Flat Connector Crimper for Cable Plate (**7-035-01**). Place the jaws of the cable crimper on the crimp, ensuring that the crimp is centred and is correctly held in the crimper jaws. Pull the inner start lever first, then squeeze the outer handles to complete crimping. The toothed mechanism of the cable crimper establishes the appropriate compression pressure for securing the crimp.

Precaution: Incorrectly placing the cable crimper can lead to crimp failure.



## 10. Remove Temporary fixation

When the cerclage cable is secured and crimped into the curved cable connector turn the fluted knob on of the Flat Connector Crimper for Cable Plate (**7-035-01**) as far as possible, and remove the temporary tension holders are wed, push the lever of the cam lock backward, and pull the holder off the cable.



## 11. Cut cable

Cut the loose end of the cable using the Spicule Cutter for Cable Plate (**7-035-02**). Position the cutting jaws very close to the crimp, and make the cut in one action to produce a clean cut. Ensure that the adjacent cerclage cables do not get damaged.





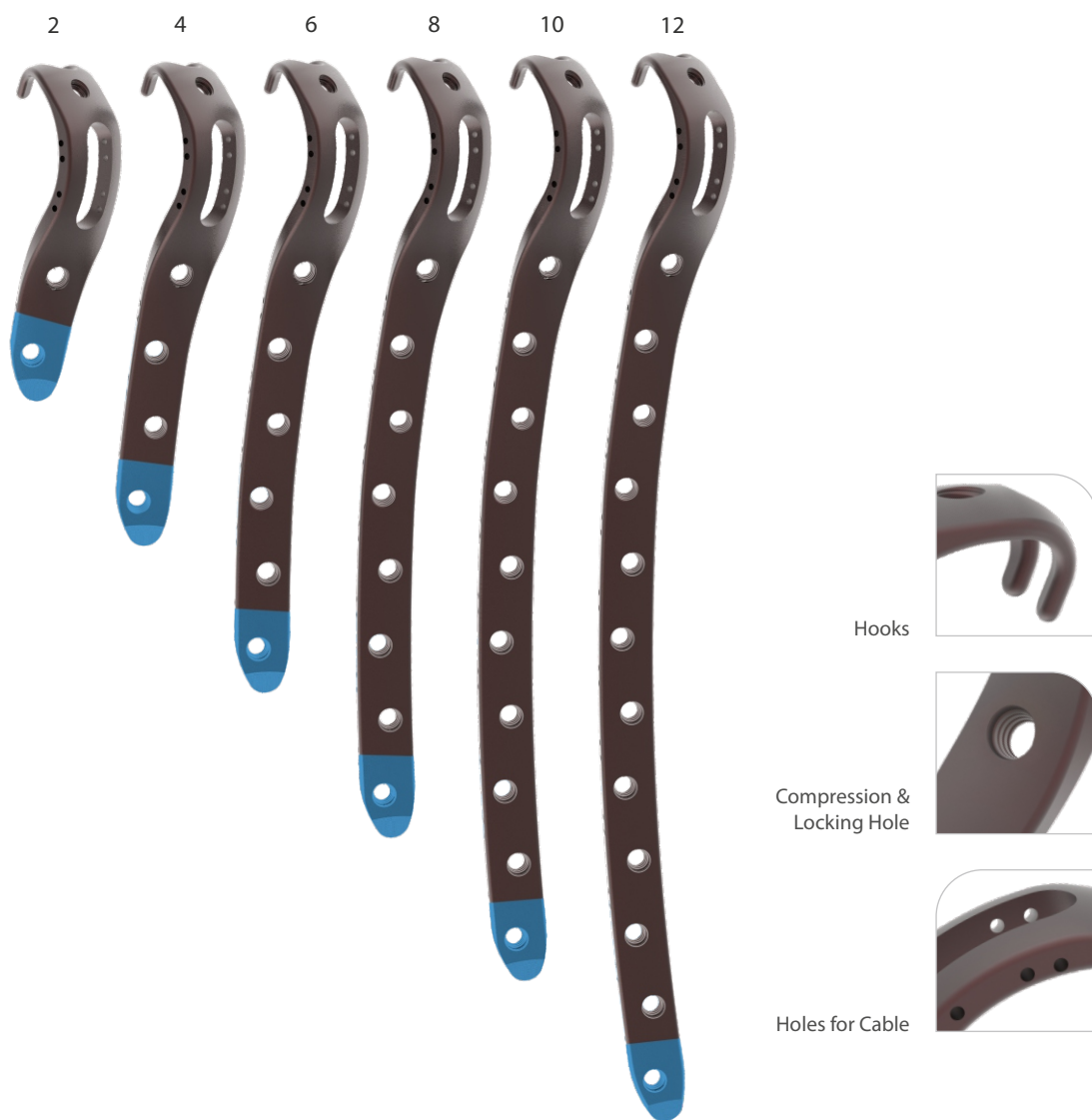
## **Implant Removal**

In case the physician decides to remove the implants, implants can be removed by using general surgical instruments

**5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Titanium**



## 5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate

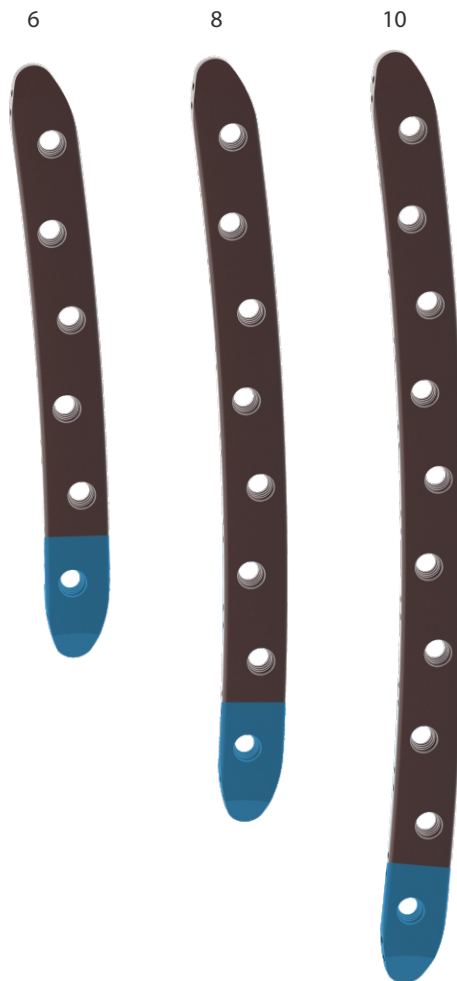


Holes	Left Direction	Right Direction
2	<b>10-018-02LTI</b>	<b>10-018-02RTI</b>
4	<b>10-018-04LTI</b>	<b>10-018-04RTI</b>
6	<b>10-018-06LTI</b>	<b>10-018-06RTI</b>
8	<b>10-018-08LTI</b>	<b>10-018-08RTI</b>
10	<b>10-018-10LTI</b>	<b>10-018-10RTI</b>
12	<b>10-018-12LTI</b>	<b>10-018-12RTI</b>

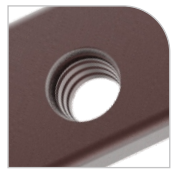
**5.0mm Wise-Lock Cable Straight Plate, Titanium**



## 5.0mm Wise-Lock Cable Straight Plate



Compression &  
Locking Hole



Holes for Cable



Holes	Code
6	<b>10-043-06TI</b>
8	<b>10-043-08TI</b>
10	<b>10-043-10TI</b>

## Cable

Codes	Dia	Length
<b>10-019-500TI</b>	1.0mm	500mm
<b>10-020-500TI</b>	1.7mm	500mm



## Cable Connector Curved

Codes	Dia
<b>10-062-1.0TI</b>	1.0mm
<b>10-062-1.7TI</b>	1.7mm



## Bone Needle

Codes	Dia	Length
<b>10-022-150SS</b>	1.5mm	150mm
<b>10-022-250SS</b>	1.5mm	250mm
<b>10-023-400SS</b>	1.8mm	400mm
<b>10-024-150SS</b>	2.0mm	150mm
<b>10-024-400SS</b>	2.0mm	400mm
<b>10-024-450SS</b>	2.0mm	450mm



## Bone Needle with Hole

Codes	Dia	Length
<b>10-025-100SS</b>	1.6mm	100mm
<b>10-025-140SS</b>	1.6mm	140mm
<b>10-026-100SS</b>	2.0mm	100mm
<b>10-026-120SS</b>	2.0mm	120mm
<b>10-026-140SS</b>	2.0mm	140mm
<b>10-027-120SS</b>	2.5mm	120mm
<b>10-027-140SS</b>	2.5mm	140mm

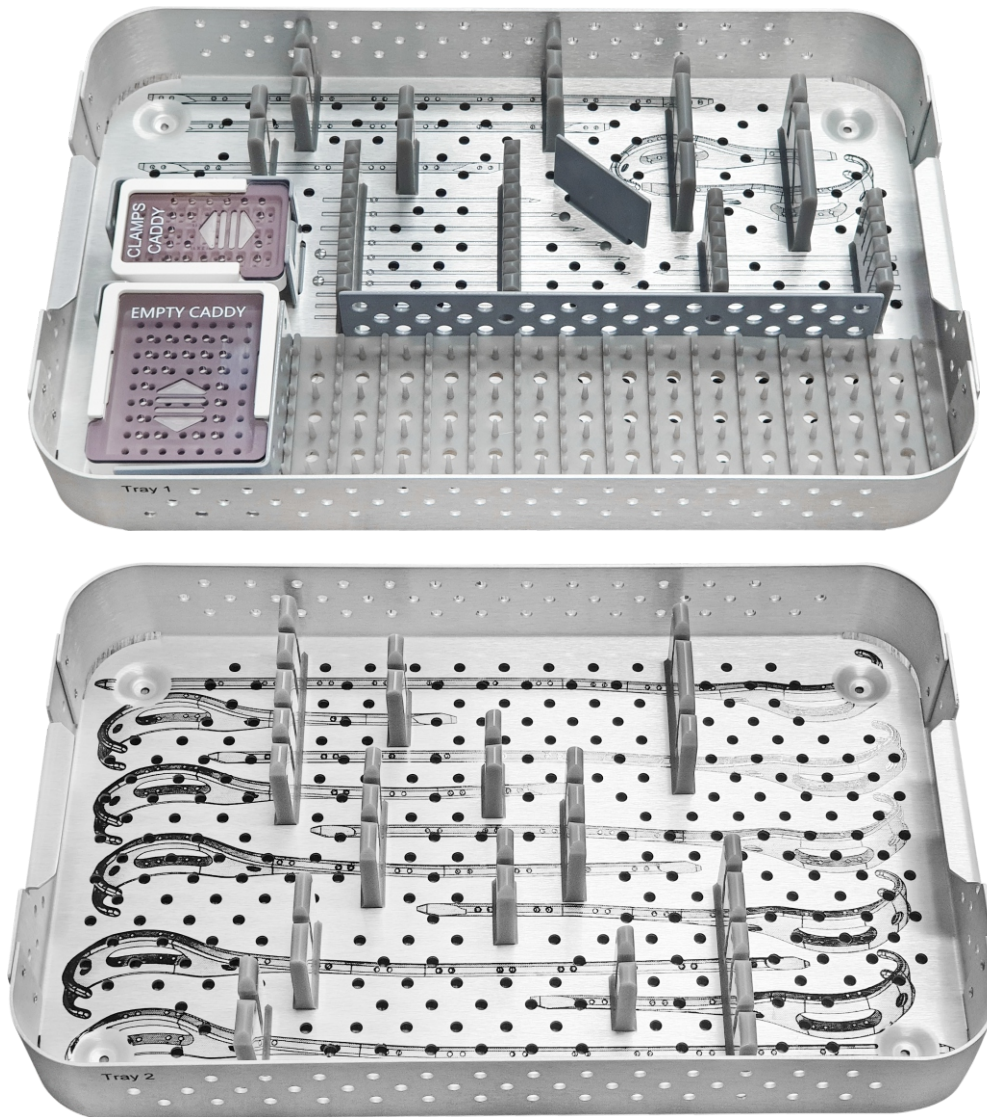


### 5.0mm Wise-Lock Screw, Self-Tapping, (Hex Head)

Length (mm)	Codes
12	<b>TI-119.012</b>
14	<b>TI-119.014</b>
16	<b>TI-119.016</b>
18	<b>TI-119.018</b>
20	<b>TI-119.020</b>
22	<b>TI-119.022</b>
24	<b>TI-119.024</b>
26	<b>TI-119.026</b>
28	<b>TI-119.028</b>
30	<b>TI-119.030</b>
32	<b>TI-119.032</b>
34	<b>TI-119.034</b>
36	<b>TI-119.036</b>
38	<b>TI-119.038</b>
40	<b>TI-119.040</b>
42	<b>TI-119.042</b>
44	<b>TI-119.044</b>
46	<b>TI-119.046</b>
48	<b>TI-119.048</b>
50	<b>TI-119.050</b>
52	<b>TI-119.052</b>
54	<b>TI-119.054</b>
56	<b>TI-119.056</b>
58	<b>TI-119.058</b>
60	<b>TI-119.060</b>
65	<b>TI-119.065</b>
70	<b>TI-119.070</b>
75	<b>TI-119.075</b>
80	<b>TI-119.080</b>
85	<b>TI-119.085</b>
90	<b>TI-119.090</b>



**10-049 Implant Box for 5.0mm Wise-Lock Cable Plate Implant Set**



## 10-049 5.0mm Wise-Lock Cable Plate Implant Set

Codes	Set Consisting of:	Units
<b>10-018-02LTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Left, 2 Holes, Titanium	1
<b>10-018-04LTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Left, 4 Holes, Titanium	1
<b>10-018-06LTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Left, 6 Holes, Titanium	1
<b>10-018-08LTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Left, 8 Holes, Titanium	1
<b>10-018-10LTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Left, 10 Holes, Titanium	1
<b>10-018-12LTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Left, 12 Holes, Titanium	1
<b>10-018-02RTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Right, 2 Holes, Titanium	1
<b>10-018-04RTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Right, 4 Holes, Titanium	1
<b>10-018-06RTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Right, 6 Holes, Titanium	1
<b>10-018-08RTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Right, 8 Holes, Titanium	1
<b>10-018-10RTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Right, 10 Holes, Titanium	1
<b>10-018-12RTI</b>	5.0mm Wise-Lock Cable Prosthesis and Revision Femur Plate, Right, 12 Holes, Titanium	1
<b>10-043-06TI</b>	5.0mm Wise-Lock Cable Straight Plate, 6 Holes, Titanium	1
<b>10-043-08TI</b>	5.0mm Wise-Lock Cable Straight Plate, 8 Holes, Titanium	1
<b>10-043-10TI</b>	5.0mm Wise-Lock Cable Straight Plate, 10 Holes, Titanium	1
<b>10-062-1.0TI</b>	Cable Connector, Curved, Ø1.0mm, Titanium	1
<b>10-062-1.7TI</b>	Cable Connector, Curved, Ø1.7mm, Titanium	1
<b>10-022-150SS</b>	Bone Needle, Ø1.5mm x Length 150mm, Stainless Steel	2
<b>10-022-250SS</b>	Bone Needle, Ø1.5mm x Length 250mm, Stainless Steel	2
<b>10-023-400SS</b>	Bone Needle, Ø1.8mm x Length 400mm, Stainless Steel	2
<b>10-024-150SS</b>	Bone Needle, Ø2.0mm x Length 150mm, Stainless Steel	2
<b>10-024-400SS</b>	Bone Needle, Ø2.0mm x Length 400mm, Stainless Steel	2
<b>10-024-450SS</b>	Bone Needle, Ø2.0mm x Length 450mm, Stainless Steel	2
<b>10-025-100SS</b>	Bone Needle with Hole, Ø1.6mm x Length 100mm, Stainless Steel	2
<b>10-025-140SS</b>	Bone Needle with Hole, Ø1.6mm x Length 140mm, Stainless Steel	2
<b>10-026-100SS</b>	Bone Needle with Hole, Ø2.0mm x Length 100mm, Stainless Steel	2
<b>10-026-120SS</b>	Bone Needle with Hole, Ø2.0mm x Length 120mm, Stainless Steel	2
<b>10-026-140SS</b>	Bone Needle with Hole, Ø2.0mm x Length 140mm, Stainless Steel	2
<b>10-027-120SS</b>	Bone Needle with Hole, Ø2.5mm x Length 120mm, Stainless Steel	2
<b>10-027-140SS</b>	Bone Needle with Hole, Ø2.5mm x Length 140mm, Stainless Steel	2

**7-035-01** Flat Connector Crimper for Cable Plate



**7-035-02** Spicule Cutter for Cable Plate



**7-035-03** Cable Cutter for Cable Plate



**7-035-04** Front Pressure Cable Lock, ID: Ø1.0mm, for Cable Plate



**7-035-05** Back Pressure Cable Lock, ID: Ø1.0mm, for Cable Plate



**7-035-06** Front Pressure Cable Lock, ID: Ø1.7mm, for Cable Plate



**7-035-07** Back Pressure Cable Lock, ID: Ø1.7mm, for Cable Plate



**7-035-08** Cable Tensioner for Cable Plate



**7-035-09** Cable Passer for Cable Plate



**7-035-10** Spicule Bender for Cable Plate



**7-035-11** Curved Needle Guide for Cable Plate



**7-035-12** Straight Needle Guide for Cable Plate



**7-035-13**      Impactor for Cable Plate



**7-035-14**      Trays for Cable Plate Instrument Set



**7-035-15**      Container for Cable Plate Instrument Set



**7-035 Cable Plate Instrument Set**



## 7-035 Cable Plate Instrument Set

Codes	Set Consisting of:	Units
<b>7-035-01</b>	Flat Connector Crimper for Cable Plate	1
<b>7-035-02</b>	Spicule Cutter for Cable Plate	1
<b>7-035-03</b>	Cable Cutter for Cable Plate	1
<b>7-035-04</b>	Front Pressure Cable Lock, ID: Ø1.0mm, for Cable Plate	1
<b>7-035-05</b>	Back Pressure Cable Lock, ID: Ø1.0mm, for Cable Plate	1
<b>7-035-06</b>	Front Pressure Cable Lock, ID: Ø1.7mm, for Cable Plate	3
<b>7-035-07</b>	Back Pressure Cable Lock, ID: Ø1.7mm, for Cable Plate	1
<b>7-035-08</b>	Cable Tensioner for Cable Plate	1
<b>7-035-09</b>	Cable Passer for Cable Plate	1
<b>7-035-10</b>	Spicule Bender for Cable Plate	1
<b>7-035-11</b>	Curved Needle Guide for Cable Plate	1
<b>7-035-12</b>	Straight Needle Guide for Cable Plate	1
<b>7-035-13</b>	Impactor for Cable Plate	1
<b>7-035-14</b>	Trays for Cable Plate Instrument Set	2
<b>7-035-15</b>	Container for Cable Plate Instrument Set	1



**USA**

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