# 金属缆索内固定系统介绍
# Metal cable internal fixation introduction

## 适应症 Indications

肱骨近端骨折、尺骨鹰嘴骨折、腓骨远端骨折、髌骨骨折、趾骨骨折、人工关节假体翻修、长骨干粉碎性骨折等、创建张力带。
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 fxation during open reductions. Reattachment of the greater trochanter following osteotomy in total hip arthroplasty or fractures. Create tension band.

## 设计理念 Principle

无论固体还是液体，同样都具有表面张力，有对抗引起断裂的能量，所以钛缆随着所含钛丝股数的增多，表面积增大，具有更为出众的静态强度和更高的疲劳强度
Whether it is solid or liquid, it has surface tension and has the energy to resist fracture. Therefore, the titanium cable increases the surface area with the increase of the number of titanium wires in the cable which will have more outstanding static intensity and higher fatigue strength.

## 产品特点 Product Structure

- 缆索由多根钛合金丝捻制而成，柔韧性好，避免了单根钢丝术中固定以及术后疲劳性折断。
- 带孔穿针，与缆索配合术中固定与传统的克氏针相比，不需折弯，固定方便稳定，并降低对软组织的激惹。
- Each cable has several strands of titanium alloy wire twisted together, better flexibility, greater fatigue esistance, it avoids the fatigue fracture of a single steel wire preoperative and postoperative .
- Cannulated needle, no bending needed, easy fixing and stablizing during surgery. Minimize the irritation of soft tissue.

## 内植入物 Implants

| 金属缆索 Metal cable | 直径 Diameter | 长度 Length | 材质 Material |
|---|---|---|---|
| | Φ1.0 | 520mm | 钛合金 Titanium Alloy |
| | Φ1.7 | 520mm | |

| 锁紧扣 Lock catch | 直径 Diameter | 材质 Material |
|---|---|---|
| | Φ1.1 | 纯钛 Titanium |
| | Φ1.8 | |

# 配套器械
# Instruments


# 金属缆索内固定器使用方法
# Metal cable internal fixation instruction

第1步

将缆索自由端穿过锁紧器
Insert the titanium cable into the cable passer.

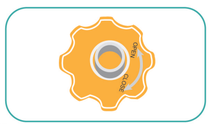
第2步

将锁紧器和收紧器相连
Attach the tensioning devices.

第3步

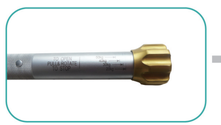
旋转收紧器尾部旋钮收紧缆索，收紧器尾部刻度值为收紧缆索的相应张力
Tension the cable by rotate the tension device, the reading at the end of the tightener is the tension value.

第4步



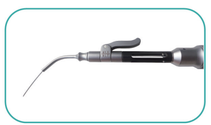
OPEN为松开收紧器，CLOSE为加压收紧器
Open and close are arrowed.

第5步



旋钮转到相应刻度对缆索施加收紧力度，1.0缆索收紧张力不得超过30kg，1.7张力不超过40kg
Tension the cable with related forces, do not over use no more than 30kg for 1.0mm cable, no more than 40kg for 1.7mm cable.

第6步



按下锁紧器扳手锁紧缆索，用于临时固定
Press for temporarily tensioning.

# 金属缆索内固定器手术操作
# Metal cable internal fixation surgical instruction

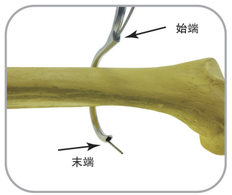
## 1 选择引导器 Insert titaninm cable

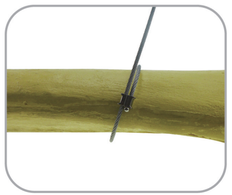
选择合适的线缆引导器，引导器的选择取决于骨骼的周长和手术入路，线缆引导器可以减少对软组织的损伤和减少骨膜的过度剥离。
The size and shape of the cable passer depend on the cirumference of the bone and access to the site.Select a cable passer that will allow passage of the instrument around the bone without causing significant damage to soft tissues or excessive stripping of the periosteum. Place 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.

## 2 穿入引导器 Insert the cable passer

将引导器从后侧紧贴骨面穿到前侧(避免损伤软组织和血管)，将钛缆由引导器头部进入穿过引导器，然后引导器撤出,钛缆穿过锁紧扣另一孔(锁紧扣紧贴骨面)，钛缆自由端指向前方。

Pass the cable passer from the posterior side to the anterior side (to avoid damage to the soft tissue and blood vessels), insert the titanium cable from the cable passer head into the passer, remove the cable passer, the titanium cable passes through two holes of the cable crimp (ensure that the points on the under surface of the cable crimp are in contact with the bone), the free end of the titanium cable points forward.



## 3 拉紧钛缆 Titanium cable tension

将锁紧器和缆索收紧器相连，收紧器尾部的刻度为张力数值，将缆索收紧器尾端旋钮逆时针旋转直至停止然后将缆索穿过收紧器缆索收紧器尾端旋钮顺时针旋转至特定张力数值，定位锁扣时，锁扣底面四个突点必须接触骨面，光滑面向外放置，确保其被软组织覆盖并紧贴骨面

**注意：1.0缆索张力超过30KG，1.7缆索张力超过40KG，可能会导致缆索的磨损或断裂，还可能导致骨碎片的破碎和复位丧失。**

Attach the provisional tensioning device and the attachment bit to the cable tensioner. Turn the fluted knob at the end of the tensioner counter- clockwise until it stops, and thread the cable through the cable tensioner. Turn the knob on the tensioner clockwise until the desired tension is reached.

Note: Applying more than30 kg of tension to the 1.0 mm ，Applying more than40 kg of tension to the 1.7 mmcable may cause fraying or breakage of the cable. It may also cause crushing of bone fragments and loss of reduction

## 4 固定钛缆 Titanium cable fixation

将缆索夹扣放入夹扣钳并将手柄挤压在一起，夹扣钳中的棘轮机构能够准确的控制压接的变形量，从而防止夹扣的欠压和过压，当夹扣压接到位，夹扣钳将自动释放.

**注意：在压接缆索之前，目测检查确保夹扣准确放入夹扣钳中，不正确的放置可能导致缆索的压接滑动和压接失败。**

Use the cable crimper to precisely deform the cable crimp.

Place the jaws of the cable crimper over the cable crimp and squeeze the handles together.

The ratchet mechanism in the crimper precisely controls the amount of crimp deformation, thus preventing under- or overcrimping.

Note: Visually check to ensure that the cable crimp is centered and fully seated in the crimper jaws prior to crimping the cable.

Improper placement may lead to cable slippage or crimp failure

## 5 剪断钛缆 Cut titaninm cable

压接成功后将多余的缆索用缆索剪剪断（尽量一次性剪断，若重复剪缆，需垫纱布防止钛屑散落）

After the crimping is successful, the excess cable need to cut with a cable cutter (try to cut it as soon as possible. If the cable is repeatedly cut, it is necessary to pad the gauze to prevent the titanium chips from scattering)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# METAL CABLE INTERNAL FIXATION SYSTEM

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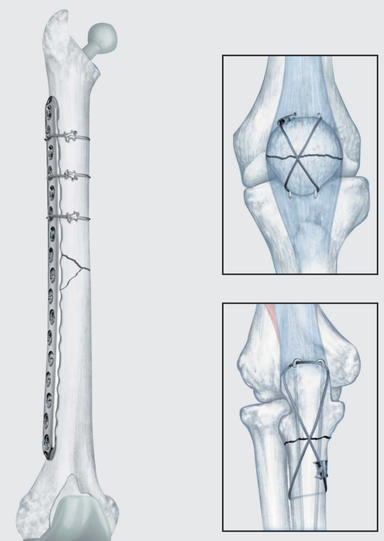


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