

7 p. d.

Konstrukcijas šoukaulīz u kūtīnkaulīz  
fiksacīzai

## STRACOS

STRASBOURG  
COSTALE  
OSTEOSYNTHESE

### Trauma Fractures



# SO EASY! SO STABLE!

Costal fractures and sternal fractures are frequent injuries in the case of blunt thoracic traumas that occur as a result of external violence.

Blunt trauma to the chest usually occurs in the case of traffic accidents, falls from a considerable height, occupational accidents, household accidents, during sporting activities or due to targeted physical violence. Patients usually suffer from severe pain and, as a result, consciously avoid breathing in deeply, coughing and movements that intensify the pain.

Surgical stabilization of costal and sternal fractures can reduce pain and tends to speed up patient mobilization.

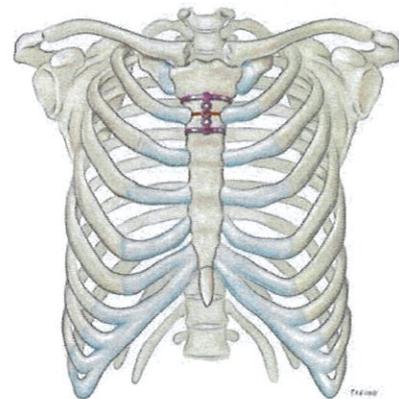
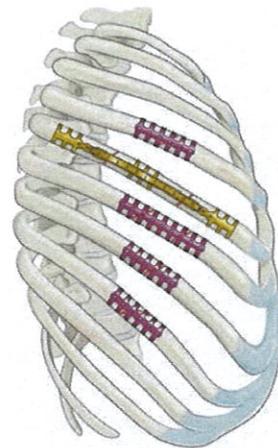
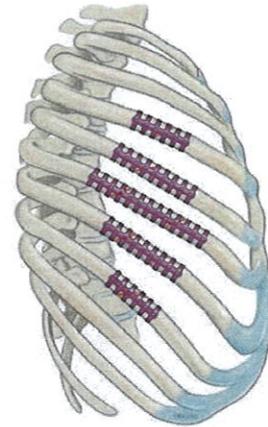
**Technical advantages:**

- The Titanium 3D rib clip and the sternal clip are one item so time-consuming intraoperative configuration is eliminated
- Three-dimensional formability of the Titanium clips, axial torquing and / or horizontal bending for precision adaptation to the anatomical situation
- Functionally stable, flexible costal and sternal osteosynthesis, no rigid fixation
- Only one pair of fixation pliers is required to affix the Titanium 3D rib clip

**Clinical benefits:**

- Shortened intensive care, e.g. artificial ventilation
- Shortened clinic stay
- Low complication rate
- Rapid pain control and pain reduction
- Good long-term outcomes

Stabilization normally leads to rapid, complication-free orthotopic healing of the rib and sternum since the Titanium clips fix the fracture fragments in place in their anatomical position and help to reduce pain considerably.



# COSTAL FRACTURES – IMPLANTS

## STANDARD



### 014-01006

Titanium 3D rib clip, 6 segments



### 014-01009

Titanium 3D rib clip, 9 segments



### 014-01013

Titanium 3D rib clip, 13 segments

## XL



### 014-02006

Titanium 3D rib clip, 6 segments, XL



### 014-02009

Titanium 3D rib clip, 9 segments, XL



### 014-02013

Titanium 3D rib clip, 13 segments, XL

### Application:

- 3D rib clip with 6 segments: for fractures that are at right angles to the longitudinal axis of the rib.
- 3D rib clip with 9 segments: for oblique fractures.
- 3D rib clip with 13 segments: for comminuted fractures, spiral fractures, very oblique fractures.

### CAUTION:

Avoid cutting the 3D rib clips with 6, 9, 13 segments to size by removing one or more clip segments because it would then not be possible to ensure stable fixation.



### 014-01000

Titanium rib clip, straight, Standard



### 014-01001

Titanium rib clip, straight, XL



### 014-10190

Titanium connecting bar, completely serrated, 190 mm



### 014-10230

Titanium connecting bar, completely serrated, 230 mm

### Application:

- Implant bridge for comminuted fractures or defects where fusion of the bone fragments is not possible on account of distance or missing fragments (reconstruction).
- An implant bridge comprises of two Titanium rib clips and one Titanium connecting bar
- after precise positioning and alignment of the Titanium rib clips the Titanium connecting bar is shortened to the particular length and introduced to the connectors of the Titanium rib clips
- the Titanium rib clips are fixed in place on the rib
- the Titanium connecting bar is crimped onto the connectors of the Titanium rib clips

The titanium rib clips and titanium connecting bars are made of grade 2 pure titanium. The material designation of the material is 3.7035 / ASTM B 265 Gr. 2 / ASTM F 67, in accordance with DIN EN ISO 5832-2.

## INSTRUMENTS

The MedXpert instrument set has been specially developed for the use of the MedXpert implants and is matched to the products. MedXpert implants may only be used with the instruments specified by MedXpert.

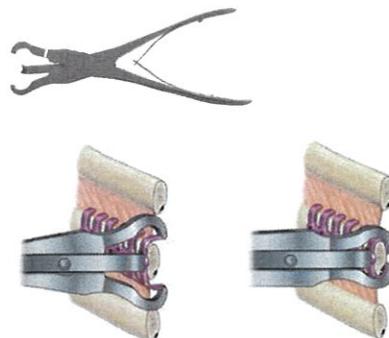
**010-00050** 4.3

### Rib clip fixation pliers, Universal

Pliers for affixing the titanium rib clip to the rib.

The pliers is placed vertically on the Titanium rib clip to be closed and then closed completely.

In this procedure the hold-down device presses on the Titanium rib clip and keeps it in position whilst the lateral jaws shape and fix the Titanium rib clip segments around the rib. With this instrument it is possible to affix not only standard Titanium rib clips but also XL ones.



**010-00010**

### Implant cutting pliers with exchangeable jaw inserts, 22cm

Pliers for cutting the titanium connecting bars.

After deciding on the individual length the Titanium connecting bars are shortened using the implant cutting pliers. „Completely serrated“ titanium connecting bars can be shortened without any limitations.

„Partially serrated“ Titanium connecting bars may only be shortened on the left and right to such an extent that at least one serrated length of 15 mm remains on both sides, in order to enable secure crimping to the connectors of the titanium rib clips.

The rubber jaw inserts collect disconnected Titanium connecting segments.

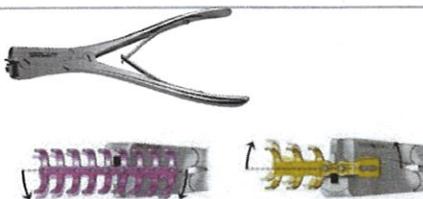


**010-00020** 7.2

### Three-point bending pliers for rib clips, 18 cm

Pliers for longitudinal axis-adjustment of the angle of the Titanium rib clip

The two pins on the jaws of the pliers are inserted in the two drillholes of the Titanium rib clip. Longitudinal axis-alignment of the Titanium rib clip is altered by closing the pliers. Subsequent shaping is possible even if the Titanium rib clip has already been fixed in place on the rib.



**010-00030**

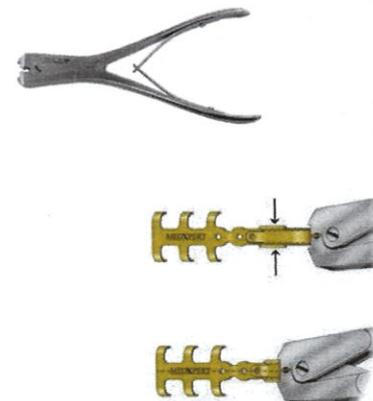
### Implant crimping pliers, 18 cm

**010-00032**

### Implant crimping pliers, angled 100°, 20.5 cm

Pliers for final closure (crimping) of the connection between titanium rib clip and Titanium connecting bar.

The jaw of the pliers is provided with 100° angulation in order to be able to connect the rib clips to the connecting bars even at virtually inaccessible sites. The jaw of this pliers is placed on the connector at an angle of 90° and closed. In this procedure the connector is crimped to the connecting bar and the connection is made irreversible. The pliers is provided with a stop that prevents the connection from being over-pressed. The pressing action must be repeated in at least three work steps (on the left, in the middle and on the right) over the entire length of the connector.



**All bending procedures must be carried out slowly. Repeated bending of the implants must be avoided at all costs in order to prevent structural changes in the implant material.**