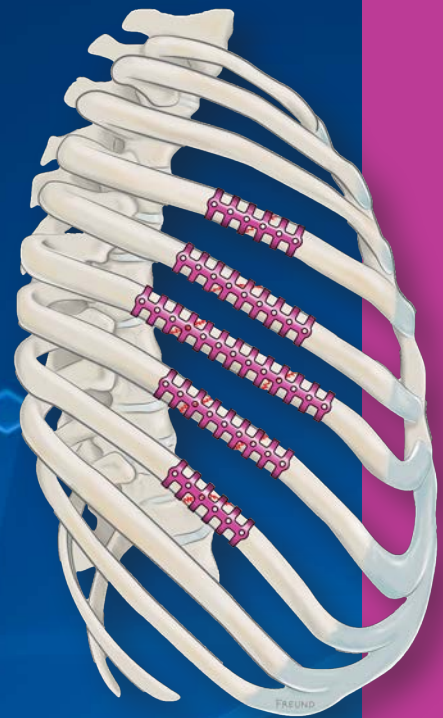


STRACOS



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.

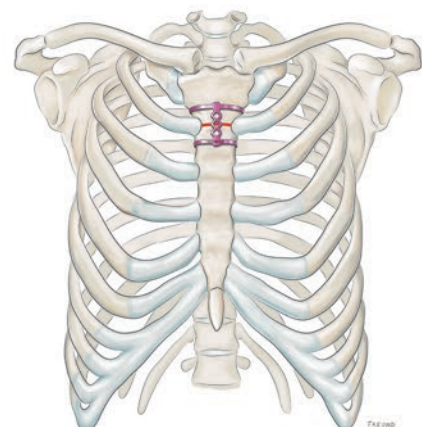
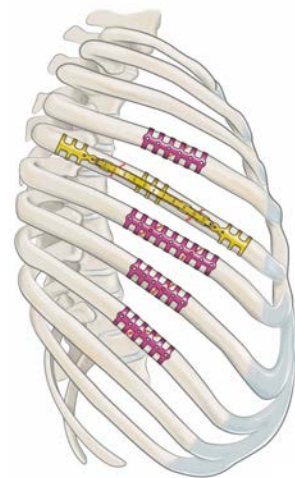
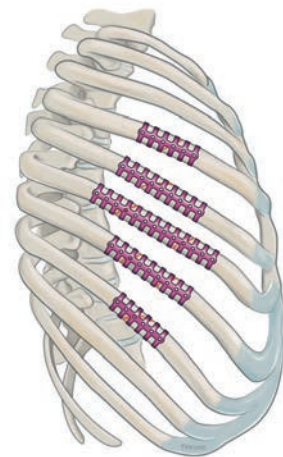
Technical advantages:

- 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

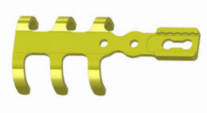



STANDARD	 21 mm	XL	 25,4 mm
 <p>014-01006 Titanium 3D rib clip, 6 segments</p>	 <p>014-02006 Titanium 3D rib clip, 6 segments, XL</p>		
 <p>014-01009 Titanium 3D rib clip, 9 segments</p>	 <p>014-02009 Titanium 3D rib clip, 9 segments, XL</p>		
 <p>014-01013 Titanium 3D rib clip, 13 segments</p>	 <p>014-02013 Titanium 3D rib clip, 13 segments, XL</p>		

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.

 <p>014-01000 Titanium rib clip, straight, Standard</p>	 <p>014-01001 Titanium rib clip, straight, XL</p>	 <p>014-10190 Titanium connecting bar, completely serrated, 190 mm</p>  <p>014-10230 Titanium connecting bar, completely serrated, 230 mm</p>
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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.

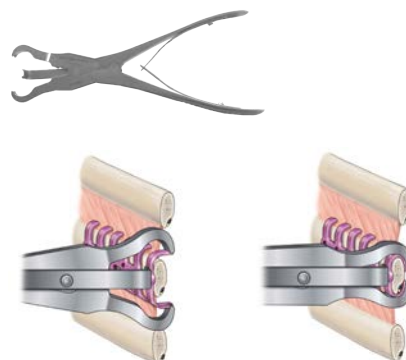
010-00050

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.

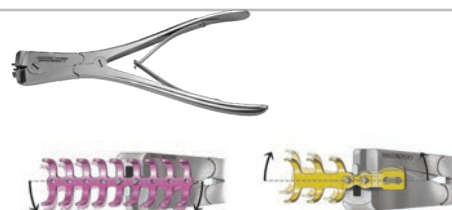


010-00020

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

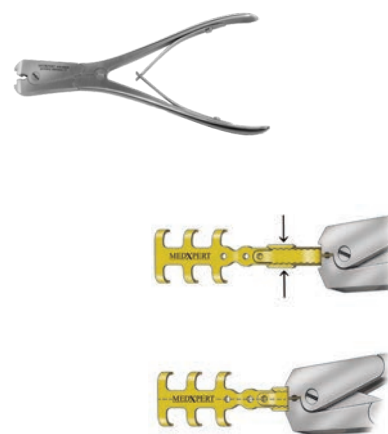
010-00032

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.

STERNAL FRACTURES – IMPLANTS

S	29 mm	M	36 mm	L	43 mm
 <p>015-01110 Titanium Sternum Double-clip S</p>		 <p>015-01120 Titanium Sternum Double-clip M</p>		 <p>015-01130 Titanium Sternum Double-clip L</p>	
 <p>015-01310 Titanium Sternum Triple-clip S</p>		 <p>015-01320 Titanium Sternum Triple-clip M</p>		 <p>015-01330 Titanium Sternum Triple-clip L</p>	
 <p>015-01210 Titanium Sternum Double-clip S/M</p>		 <p>015-01220 Titanium Sternum Double-clip M/L</p>			
 <p>015-01410 Titanium Sternum Triple-clip S/S/M</p>		 <p>015-01420 Titanium Sternum Triple-clip M/M/L</p>			

Application:

Transverse fractures, oblique fractures and multi-fragment fractures of the sternal body require use of 3 clip segments in order to ensure secure stabilisation.

Titanium sternal double-clips are recommended solely for the management of „Angle of Louis“ fractures.

The clip segments of the sternal clip grip the sternum by applying the clip segments in the intercostal spaces. The rombus-shaped centre bar, which connects the clip segments to one another, dissipates compressive forces and tensile forces of the sternum via the clip segments.

The sternal clips 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.

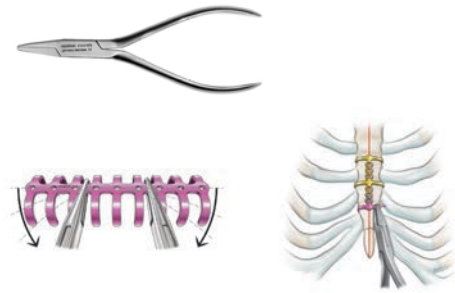
INSTRUMENTS

010-00025

Flat-nosed bending pliers for rib clips and connecting bars, 13.5 cm

Pliers for horizontal bending and axial torquing of the rib clips. In this procedure the pliers are used in pairs.

Removal of the implants can be performed with these pliers because the jaws are flattened on one side. The flattened jaw is slipped under the implant to be removed and then the segment is lifted and bent open carefully.

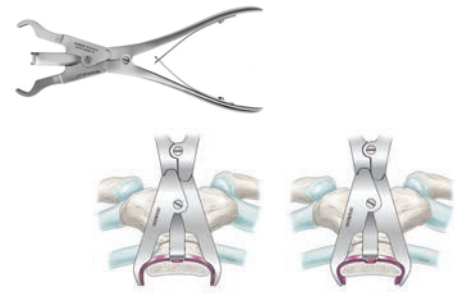


010-01510

Sternum clip Preforming Pliers

Pliers for placing and preshaping the titanium sternal clip on the sternum. The pliers are placed vertically on the titanium sternal clip to be closed and then they are closed completely.

In this procedure the hold-down device presses on the titanium sternal clip and keeps it in position whilst the lateral claws shape and fix the titanium sternal clip segments around the sternum.



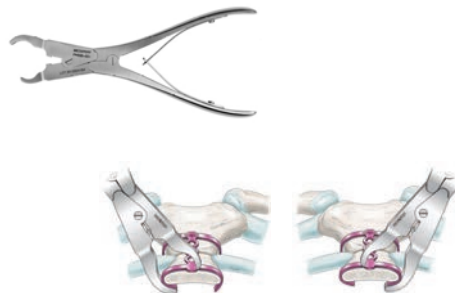
010-01520

Sternum clip Final Forming Pliers

Pliers for final shaping of the titanium sternal clip on the sternum.

The final shaping pliers are used to shape the titanium sternal clip on the sternum finally, also retrosternally.

The pliers are placed with the shortened claw of the jaws on the segment of the clip and attached. The segment is shaped around the sternum with the lengthened claw of the jaws. This procedure is repeated for each segment level on the left and right until all the clip segments have been adapted.



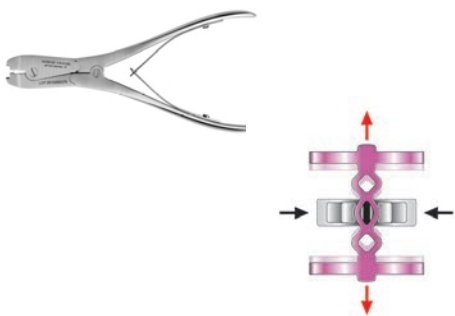
010-01530

Sternum clip Bar Elongation Pliers

Pliers for lengthening the distance between the segments of the titanium sternal clip.

The pliers are placed on the rhombus-shaped interconnecting bar. The jaws are designed in such a way that they grip round the rhombus tip. By closing the pliers the rhombus is pressed apart so the distance between the clip segments is lengthened. A stop prevents the material from being overstretched.

The procedure can be performed on all the rhombi, lengthening the distance between the two segments by up to 5 mm.



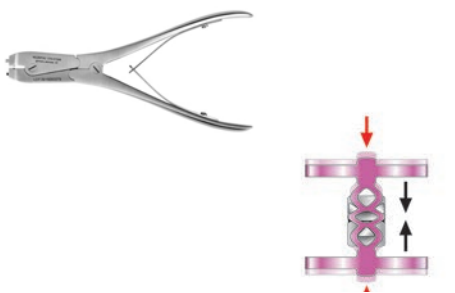
010-01540

Sternum clip Bar Shortening Pliers

Pliers for shortening the distance between the segments of the titanium sternal clip.

The pliers are placed on the rhombus-shaped interconnecting bar. The jaws are designed in such a way that they grip round the rhombus tip. By closing the pliers the rhombus is pressed apart so the distance between the clip segments is shortened. A stop prevents the material from being overstretched.

The procedure can be performed on all the rhombi, shortening the distance between the two segments by up to 5 mm.



INSTRUMENTS

010-01560

Sternum Implant Sizer

Instrument for determining and selecting the implant size. The jaws of this instrument are introduced to the previously exposed intercostal spaces in order to establish the particular width of the sternum. The clip size to be used is determined on the basis of a scale: S / M / L / XL.



010-01580

Sternum Repositioning Forceps

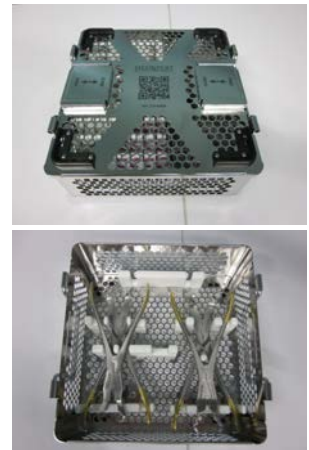
Pliers for temporary fixation of the sternum. For temporary fixation and positioning of the sternum for affixing the titanium sternal clip.



001-20001

Sterilizing Container Trauma, empty

Container made of stainless steel (material 1.4301) for the transportation and sterilization of products, implants and instruments. For reprocessing, cleaning and disinfection of the products they must be removed from the container and introduced to the process on suitable perforated trays. The containers can be cleaned in any automatic reprocessing program.



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.

IMPORTANT NOTE

Before using for the first time, it is absolutely essential to read our „Application Manual“ and our Instructions for Use. We always recommend intensive product training and briefing by MedXpert or an authorised specialist dealer prior to the first intervention using products of this system.



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