

PES

PECTUS
EXCAVATUM
SYSTEM

Deformities Pectus UNIVERSAL





DEFORMITIES

PECTUS UNIVERSAL

20 years of experience in the manufacture of reliable implants for the correction of the funnel chest

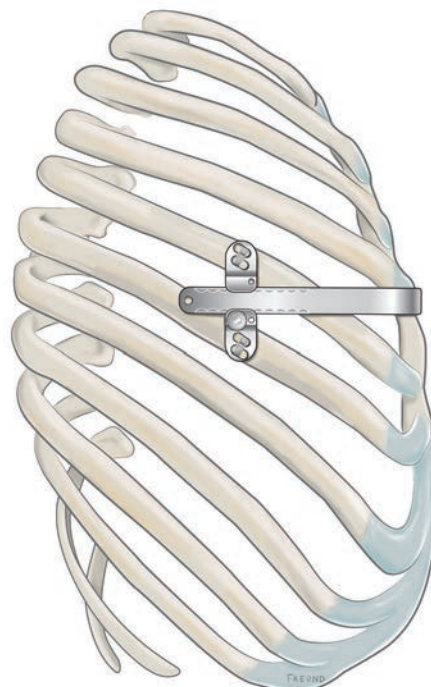
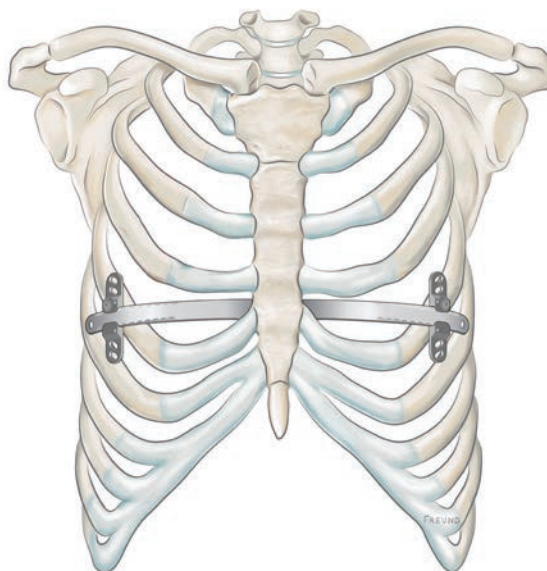
MedXpert always sets milestones with innovative ideas to improve clinical applications

The cooperation with our customers, our experience in clinic and technology have endorsed these ideas

The Pectus UNIVERSAL system fulfils all the required attributes:

- Stability
- Customisation
- Sliding or rigid fixation of the stabilizers on the Pectus Bars
- Atraumatic surface
- Biocompatible material made of implant steel

One system, UNIVERSAL in use, both in clinical and economic terms



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.

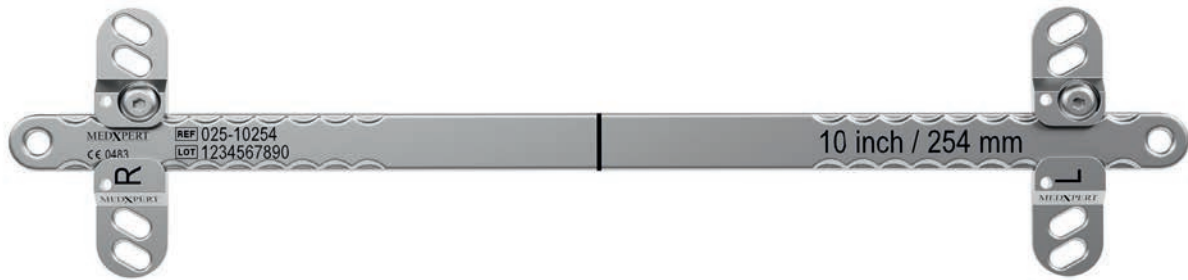
IMPLANTS

PECTUS UNIVERSAL

All the advantages and options for application are combined in the MedXpert Pectus UNIVERSAL products:

- Smooth surfaces for atraumatic implantation and explantation
- Corrugated profile for fixing the Pectus Bar Stabilizer UNIVERSAL on the Pectus Bar UNIVERSAL by screwing in the Pectus Locking-Screw
- The Pectus Bar Stabilizer UNIVERSAL can be locked by screwing in the Pectus Locking-Screw
- The Pectus Bar Stabilizer UNIVERSAL can be applied without locking and can therefore slide on the Pectus Bar

All implants are made from high quality implant steel



Example: Pectus Bar UNIVERSAL with attached Pectus Bar Stabilizers UNIVERSAL with locking device

PECTUS BAR, UNIVERSAL

CORRUGATED PROFILE

- For fixation of Pectus Bar Stabilizers, Universal
- Atraumatic surface and corrugated profile

MARKING

- For the selection and identification of the implants
- Centre line for orientation to the sternum



HOLE

- \varnothing 5 mm holes on both sides for a tension strap as well as the Pectus BarLock™ Pin

THE BAR VARIANTS

PECTUS BAR, UNIVERSAL

- For UNIVERSAL use
- Sliding or rigid fixation of the Pectus Bar Stabilizers is possible
- Compatible with all Pectus Bar Stabilizers

025-07178	Pectus Bar, Universal, 178 mm
025-08203	Pectus Bar, Universal, 203 mm
025-09229	Pectus Bar, Universal, 229 mm
025-10254	Pectus Bar, Universal, 254 mm
025-11279	Pectus Bar, Universal, 279 mm
025-12305	Pectus Bar, Universal, 305 mm
025-13330	Pectus Bar, Universal, 330 mm
025-14356	Pectus Bar, Universal, 356 mm
025-15381	Pectus Bar, Universal, 381 mm
025-16406	Pectus Bar, Universal, 406 mm
025-17432	Pectus Bar, Universal, 432 mm
025-18458	Pectus Bar, Universal, 458 mm
025-19483	Pectus Bar, Universal, 483 mm

IMPLANTS

PECTUS BAR STABILIZER, UNIVERSAL

Sliding the Pectus Bar Stabilizers UNIVERSAL onto the Pectus Bars UNIVERSAL prevents the implanted Pectus Bar UNIVERSAL from tilting

- The Pectus Bar Stabilizer UNIVERSAL can be mounted without fixation and thus slides
- To provide stable locking, the Pectus Bar Stabilizer UNIVERSAL is fixed to the Pectus Bar UNIVERSAL with the Pectus Locking-Screw UNIVERSAL (REF 025-02010)
- To prevent the Pectus Bar Stabilizer Universal from slipping from the Pectus Bar UNIVERSAL, a Pectus BarLock Pin™ (REF 022-01050) can be inserted and crimped into the hole of the Pectus Bar UNIVERSAL
- Pectus Bar Stabilizer UNIVERSAL for alignment on the left "L" or right "R" side of the body for the anatomically correct direction of the ribs
- The Pectus Bar Stabilizer UNIVERSAL features holes to accommodate the fixing pins of the applying forceps for stabilizers (REF 020-00080)



025-02028

Pectus Bar Stabilizer, Universal, R, 2 x ø 4x8 mm



025-02029

Pectus Bar Stabilizer, Universal, L, 2 x ø 4x8 mm

PECTUS LOCKING-SCREW, UNIVERSAL

The Pectus Locking-Screw UNIVERSAL is picked up with the Pectus Screwdriver UNIVERSAL (REF 026-00010). For this purpose, the head of the screw is designed with a 2.5 mm hexagonal head, which retains the screw securely in the screwdriver

- The screw is inserted into the provided threaded hole and secured with two turns
- After the Pectus Bar Stabilizer UNIVERSAL has been slid onto the Pectus Bar UNIVERSAL and placed in its intended position, the screw is tightened with the screwdriver, locked, and thus creates a secure connection
- The head of the screw must engage completely in the corrugated profile of the Pectus Bar UNIVERSAL and form a flush surface with the counterbore of the Pectus Bar UNIVERSAL



025-02010

Pectus Locking-Screw, Universal

REMOVAL OF THE METAL

- Removal of the metal is performed in the same manner by loosening the screw and sliding the Pectus Bar Stabilizer UNIVERSAL from the Pectus Bar UNIVERSAL
- Any standard screwdriver with a hexagonal head and a width across flats of 2.5 mm can be used for removal

IMPLANTS

PECTUS BAR STABILIZER

Sliding the Pectus Bar Stabilizers onto the Pectus Bar UNIVERSAL prevents the implanted Pectus Bar UNIVERSAL from tilting

- In the classic approach, the Ribas Pectus Bar Stabilizer is mounted in a sliding fashion onto the Pectus Bar UNIVERSAL and is not fixed
- To prevent the Pectus Bar Stabilizer from slipping from the Pectus Bar UNIVERSAL, a Pectus BarLock Pin™ (REF 022-01050) can be inserted and crimped into the hole
- The Pectus Bar Stabilizer features holes to accommodate the fixing pins of the applying forceps for stabilizers (REF 020-00080)



022-02010

Ribas Pectus Bar Stabilizer, Low Profile

STABILIZER APPLICATION FOR BENT PECTUS BARS

All MedXpert stabilizers are manufactured with a framed base plate. This base plate corresponds to about 2/3 of the width of the stabilizer

This frame also allows sliding the stabilizer over an already bent Pectus Bar without jamming. This allows the stabilizer to be pushed onto the already inserted and accordingly anatomically shaped Pectus Bar without any restrictions

PECTUS BARLOCK™ PIN

The BarLock™ Pin is a sleeve with a very thin sheath.

- The Pectus BarLock Pin™ is inserted into the hole at the respective end of the Pectus Bar UNIVERSAL, whereby the Pectus BarLock™ Forceps (REF 020-00050) are used for guidance
- By closing and pressing the forceps, the rim of the BarLock™ Pin is crimped around the hole of the Pectus Bar UNIVERSAL. The BarLock™ Pin then prevents the Pectus Bar Stabilizer from slipping off the Pectus Bar UNIVERSAL
- The Pectus BarLock™ Forceps (REF 020-00050) are also used for removal and the pin is removed in reverse order

022-01050

Pectus BarLock™ Pin



Pectus BarLock™ Pin for securing the Pectus Bar Stabilizer on the Pectus Bar

THE MATERIAL

All MedXpert implants are made from high quality implant steel

Prior to production, the raw material is subjected to laboratory tests to determine the quality, purity and stability and is only released for production once all the specified parameters have been met

The technical designation of the material is: 1.4441 / X2CrNiMo 18-15-3 according to ISO 5832-1, ASTM F 138, AISI 316L

IMPLANT ACCESSORIES

PECTUS BAR TEMPLATE

The Pectus Bar Templates made of 1 mm thick aluminium are used for the extracorporeal determination of the radius of the Pectus Bar

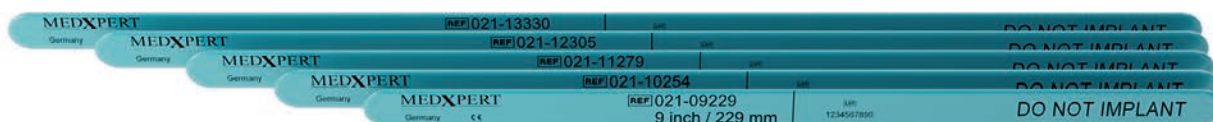
- The Pectus Bar Template is selected on the basis of the length of the implant to be used, bent over the thorax in the area of the deepest part of the pectus excavatum and then used as a template for bending the Pectus Bar UNIVERSAL
- The marking and dimensions correspond to those of the Pectus Bar UNIVERSAL, so that the size of the implant can be clearly determined
- The Pectus Bar Template may only be used extracorporeally and is not suitable for implantation



PECTUS BAR TEMPLATE

Extracorporeal surgery preparation to determine the appropriate Pectus Bar UNIVERSAL
Pectus Bar Templates may not be implanted

- 021-07178** Pectus Bar Template, 178 mm
- 021-08203** Pectus Bar Template, 203 mm
- 021-09229** Pectus Bar Template, 229 mm
- 021-10254** Pectus Bar Template, 254 mm
- 021-11279** Pectus Bar Template, 279 mm
- 021-12305** Pectus Bar Template, 305 mm
- 021-13330** Pectus Bar Template, 330 mm
- 021-14356** Pectus Bar Template, 356 mm
- 021-15381** Pectus Bar Template, 381 mm
- 021-16406** Pectus Bar Template, 406 mm
- 021-17432** Pectus Bar Template, 432 mm



THE MATERIAL

All MedXpert Bar Templates are made from high quality aluminium.

Prior to production, the raw material is subjected to laboratory tests to determine the quality, purity and stability and is only released for production once all the specified parameters have been met

The Bar Templates can be bent repeatedly often without any concerns. After use and for reprocessing purposes, these are pulled flat and placed back into the MedXpert Pectus Steri-Rack again

The technical designation of the material is: 3.0255 (EN-AW-1350A)

RECOMMENDED INSTRUMENTS

NOTE

The MedXpert instrument set was developed specifically for using the implants and is matched to the products. MedXpert implants may only be used with the instruments specified by MedXpert

CUSTOMISING THE IMPLANTS

The Pectus Bar UNIVERSAL is adapted to the design and shape determined with the Bar Template. For this purpose, bending instruments are available which have been specifically developed for this procedure and for use with the MedXpert Bars UNIVERSAL

PECTUS BAR TABLE TOP BENDER

With the table top model, the Pectus Bars UNIVERSAL are easy to customise and can be bent with a minimum of effort. To do this, the handle and thus the convex matrix (1) is raised from its resting position. The concave matrix (2) can now be aligned with the adjusting screw (3) so that the Pectus Bar UNIVERSAL can be placed in the bending device.

The handle is then moved downwards in short increments and thus the desired curvature is transferred to the Pectus Bar UNIVERSAL.

We recommend bending outwards from the centre of each Pectus Bar. The centre line is used as orientation here. The bending process is started about 10 mm to the side of the centre line.

- 1 Matrix convex
- 2 Matrix concave
- 3 Adjusting screw



020-00022

Pectus Bar Table Top Bender

For bending the Pectus Bar according to the shape of the Bar Template.

RECOMMENDED INSTRUMENTS

PECTUS BAR BENDING FORCEPS

The instrument can be used both for preparatory bending of the implants as well as for final curving to the thorax

For preparatory bending, the Pectus Bar UNIVERSAL is placed on the bending pins which are in parallel to each other. The handles are now pressed together in short increments to transfer the desired curvature to the Pectus Bar Universal



020-00021

Pectus Bar Bending Forceps

For bending the Pectus Bar and final shaping following implantation. The bending radius can be modified and further reduced by placement of the Bending Cylinders.

BENDING CYLINDER

Once a certain radius of the Pectus Bar UNIVERSAL has been reached, the bending path of the bending pin must be reduced, otherwise a deformation of the Pectus Bar UNIVERSAL is not achieved. For this purpose, and starting with the smallest diameter of 9.7 mm, the Bending Cylinder is pushed onto one of the parallel bending pins. The Bending Cylinder is retained on the bending pin with a magnet. As soon as the bending force on the Pectus Bar decreases, the Bending Cylinder is exchanged for the next size

Compared to standard bending instruments, these forceps bend to distal. In situ, this means that the already implanted Pectus Bar UNIVERSAL can be finally curved to the thorax with the bending forceps. To do this, the distal bending pin of the forceps is pushed under the Pectus Bar and the bending process is now executed by closing the handles

BENDING CYLINDER

Supplement to 020-00021

020-00025

Bending Cylinder, 9.7 mm

020-00027

Bending Cylinder, 11.7 mm

020-00029

Bending Cylinder, 13.7 mm



Through placement of the Bending Cylinders onto the Pectus Bar Bending Forceps (REF 020-00021), the bending radius can be modified and further reduced.

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.

RECOMMENDED INSTRUMENTS

PECTUS TUNNELING INSTRUMENT

For preparing the intercostal access and preparation for implantation of the Pectus Bars UNIVERSAL

- Intercostal access is created by means of the rod or blade of the Pectus Tunneling Instrument (depending on the variant)
- A thread-through band can be attached to the eyelet of the rod or blade (depending on the variant), which is pulled through the thorax when the Pectus Tunneling Instrument is guided out
- A thread-through tube can be attached to the pointed end of the rod or blade (depending on the variant), which is pulled through the thorax when the Pectus Tunneling Instrument is guided out

020-00011

Pectus Tunneling Instrument, medium, scaled

Dimensions of the working part without handle: length: 400 mm, width: 16 mm

Graduated in 10 mm increments

Eyelet for attaching a thread-through band or tube



020-00018

Pectus Tunneling Instrument, round, medium, scaled acc. Schwabegger

Dimensions of the working part without handle: length: 400 mm, round: \varnothing 10 mm

Graduated in 10 mm increments

Eyelet for attaching a thread-through band or tube



PECTUS IM- AND EXPLANTATION LEVER

The Pectus Im- and Explantation Lever is always used in pairs.

- The Pectus Im- and Explantation Lever features an eyelet measuring 4 x 14 mm and can be pushed onto the Pectus Bar UNIVERSAL
- When the Pectus Im- and Explantation Levers are pushed onto both sides of the Pectus Bar UNIVERSAL, this can be rotated into the desired position by turning the Pectus Im- and Explantation Levers
- When the Pectus Im- and Explantation Levers are moved in opposite directions to form a V-shape and are pushed onto the Pectus Bar UNIVERSAL and the handles are moved in opposite directions, the Pectus Bar UNIVERSAL is bent



020-00031

Pectus Im- and Explantation Lever

Pectus Im- and Explantation Lever for rotation of the implants to their final position.

RECOMMENDED INSTRUMENTS

APPLYING FORCEPS FOR STABILIZERS

- The fixing pins are inserted into the holes provided for this purpose on the Pectus Bar Stabilizer
- The overhangs of the fixing bolts enclose the Pectus Bar Stabilizer
- By pressing the ring handle together, the working part is closed and the Pectus Bar Stabilizer is locked with the applying forceps for stabilizers
- By pressing the ring handle together again, the working part can be reopened and the Pectus Bar Stabilizer can be released



020-00080

Applying forceps for stabilizers

Applying forceps for securely gripping the Pectus Bar Stabilizer during both implantation as well as explantation, even where access to the Pectus Bar UNIVERSAL is narrow

PECTUS BARLOCK™ FORCEPS

- The pin holder fixes the Pectus BarLock™ Pin (REF 022-01050) in the Pectus BarLock™ Forceps, and is inserted into the hole of the Pectus Bar UNIVERSAL using the forceps
- When closing the handle, the crimping punch crimps the Pectus BarLock™ Pin into the Pectus Bar UNIVERSAL
- When the removal punch is inserted into the opening / sleeve of the crimped Pectus BarLock™ Pin and the handle is closed, the Pectus BarLock™ Pin is released and retained by the pin trap

020-00050

Pectus BarLock™ Forceps

For insertion and secure attachment of the Pectus BarLock™ Pin to secure the Pectus Bar Stabilizer against slippage.



PECTUS SCREWDRIVER

- The hexagonal tip of the Pectus Screwdriver, width across flats 2.5 mm, engages the head of the Pectus Locking-Screw, Universal (REF 025-02010) and transfers the rotary movement of the handle to same
- The hexagonal tip runs conically into the head of the Pectus Locking-Screw. The resulting frictional connection retains the Pectus Locking-Screw on the Pectus Screwdriver



026-00010

Pectus Screwdriver

Pectus Screwdriver for turning and locking as well as for removal of the Pectus Locking-Screw, Universal (REF 025-02010).

RECOMMENDED INSTRUMENTS

PECTUS STERI-RACK

For cleaning and disinfection, all instruments and implants must be removed from the Steri-Racks and placed in position on suitable cleaning sieve trays

- The Steri-Racks can be cleaned and disinfected in the same processes without any problems
- Sterilisation is performed with the Steri-Rack loaded with instruments and implants

001-30001

Sterilizing Container PES

The sterilizing container is used for secure transportation and sterilization of the implants and instruments.

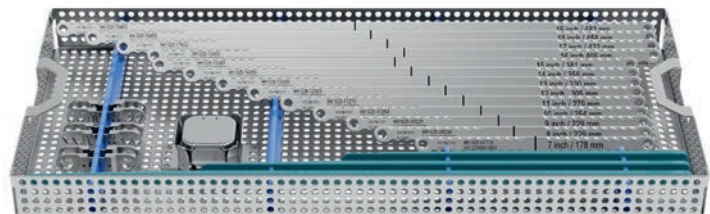
Sterilizing Container PES
closed



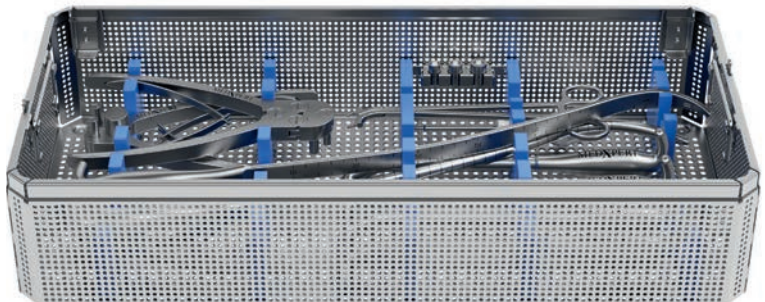
Sterilizing Container PES
opened
View of implant insert



Sterilizing Container PES
Implant insert alone



Sterilizing Container PES
Instrument insert



NOTE

The MedXpert Steri-Racks are supplied without implants and instruments

We would be pleased to offer you a recommended configuration of a set. Every set can be configured according to your individual wishes and requirements

ADDITIONAL INSTRUMENTS

The following products are only available upon request as special versions and / or while stocks last.
Please ask your MedXpert Customer Service

PECTUS TUNNELING INSTRUMENT WITH SPECIAL DIMENSIONS

Tunneling instrument for intercostal tunnelling under endoscopic control and preparation for implantation.

020-00010

Pectus Tunneling Instrument, short, scaled

Dimensions of the working part without handle: length: 345 mm, width: 16 mm

Graduated in 10 mm increments

Eyelet for attaching a thread-through band or tube



020-00012

Pectus Tunneling Instrument, long, scaled

Dimensions of the working part without handle: length: 470 mm, width: 16 mm

Graduated in 10 mm increments

Eyelet for attaching a thread-through band or tube



020-00019

Pectus Tunneling Instrument, round, long, scaled acc. Schwabegger

Dimensions of the working part without handle: length: 450 mm, round: \varnothing 10 mm

Graduated in 10 mm increments

Eyelet for attaching a thread-through band or tube



MedXpert GmbH
Max-Immelmann-Allee 19
D-79427 Eschbach

Phone +49 7634 508 563 0
Fax +49 7634 508 563 99

info@medxpert.de
www.medxpert.de

