naturally pure...
naturally strong...
naturally adaptable...
naturally Resorb x™
Introduction

With its metallic Champy micro- and mini-plate systems, Martin Medizin-Teknik revolutionized the osteosynthesis techniques used in cranio-maxillofacial surgery.

We are proud to announce the introduction of RESORB X™, our new resorbable osteosynthesis system, which clearly sets new standards for treating midface and skull fractures and for osteosynthesis in plastic and reconstructive surgery.

... naturally pure

In contrast to many other implant systems available on the market, RESORB X™ implants consist of pure poly(D,L-lactide) acid (PDLLA). This completely (intrinsically) amorphous polymer is particularly tissue-compatible and can be easily resorbed. Other mixed polymers may include crystalline components that are hard to degrade.

... naturally strong

The implant system was based on a natural design and optimized for the intended applications using highly advanced finite-element methods (FEM).

RESORB X™ retains its mechanical properties over a period of approx. 8-10 weeks. This is sufficient for the complete healing and ossification of a fracture or osteosynthesis gap.

... naturally adaptable

RESORB X™ implants can be easily bent and shaped as desired by simple heat application, making them ideal for use in the midface and cranial region.

Thanks to a wide range of products, from the simple 4-hole plate to larger mesh sizes (both rigid and flexible), the surgeon will find the right implant for the application at hand.

... naturally resorbable

The human body naturally resorbs RESORB X™ implants into the acid by hydrolysis, fully resorbing them in the process. Subsequent natural metabolism transforms the material into carbon dioxide and water.

Clinical experience has shown that RESORB X™ implants are fully resorbed, and there is no indication that the tissue is adversely affected by this process in any way. A recrystallization of the material, which has been detected with some mixed polymers, has never been observed with RESORB X™ implants.

Indications

RESORB X™ implants can be used for all osteosynthesis carried out in non load bearing cranio-maxillofacial regions.

This implies the following indications:
- Bone flap fixation following cranial procedures
- Fractures in the nasoethmoidal and infraorbital regions
- Frontal sinus wall fractures
- Midface trauma and reconstruction of the craniofacial skeleton

The material may not be used in the following cases:
- active and latent infections
- severely comminuted bone
- poor blood supply
- treatment of mandibular fractures
- osteosynthesis in load bearing areas of the cranio-maxillofacial skeleton

Quality

The RESORB X™ implants are produced in Germany and are therefore subject to the constant quality control measures of the "governing agency". The product conforms to EC standards and has also been cleared by the FDA.

The entire production process from the raw material to the finished and packaged products is carried out in a highly sophisticated clean room environment. Constant monitoring of all environmental parameters will ensure the highest level of quality possible.
Loading, transfer, and insertion of the RESORB X™ screws have been simplified with the introduction of our new Torx style screw head design. The advantages of the Torx like technology include:

- A positive interface between screw and screwdriver during loading and transfer
- The ability to deliver uniform and controlled force during the insertion process
- A reduction in the incidence of stripped or sheared screws

The screws are available in diameters of 1.6, 2.1, 2.4 mm. In each case, the larger screw is used as an emergency screw for the smaller diameter screw. Only one screwdriver is required for all screw sizes.

**RESORB X™ screws and plates are mutually compatible and can therefore be combined as desired.**

**Design features:**

The implant system has been optimized for the intended indications through the use of state-of-the-art finite-element methods (FEM).
The shape of the plate has been designed in such a way that optimal strength is achieved with a minimum amount of material. This means lower demands on the body's ability to resorb Polylactide.

The RESORB X™ plates were designed to optimize compatibility with surrounding tissues. The resulting low-profile plates featuring a rounded edge geometry are a key benefit of the RESORB X™ system.

Thanks to its wide range of shapes, the RESORB X™ plate system can be universally used for both children and adults.

Moreover, this new system reduces the cost of handling and inventory requirements in the clinic as only one plate thickness is used.

All plates can be used with all screw sizes.

Suitable bending templates are available for all the different types of implants.

These templates facilitate the desired contouring of the resorbable plates and mesh sheets.

The bending templates are resterilizable and can be stored in the instrument set in an optional storage module.

Plates
a single plating system for all indications

naturally pure... naturally strong... naturally adaptable... naturally Resorb X™

With the aid of highly advanced finite-element methods (FEM), the implants are designed and optimized for the intended applications.

The demand for a tissue-friendly design has consequently been realized.

52-075-04
Straight plate, short, 4 holes

52-075-08
Straight plate, long, 4 holes

52-095-05
Y-plate, 5 holes

52-085-05
Y-plate, 5 holes

52-088-06
T-plate, 6 holes

52-188-06
T-plate, 6 holes

52-080-06
X-plate, 6 holes

52-190-06
X-plate, 6 holes

52-090-06
X-plate, 6 holes

52-096-06
L-plate, left 6 holes, short

52-196-07
L-plate, right 6 holes, long

52-095-06
L-plate, left 6 holes, short

52-196-07
L-plate, right 6 holes, long

52-077-04
Template for 52-075-04

52-175-04
Template for 52-075-04

52-176-04
Template for 52-076-04

52-177-04
Template for 52-077-04

52-175-08
Template for 52-075-08

52-177-08
Template for 52-077-08

Plates a single plating system for all indications

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**Mesh**  
**flexible and versatile**

For covering larger areas in the cranial and midface regions, the RESORB X™ system offers a wide range of mesh types in addition to the standard plates. The mesh sheets are available in thicknesses of 0.3, 0.6, 1 mm.

<table>
<thead>
<tr>
<th>Mesh Plate</th>
<th>Thickness</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>52-310-25</td>
<td>1.0</td>
<td>25 x 25 mm</td>
</tr>
<tr>
<td>52-310-50</td>
<td>1.0</td>
<td>50 x 50 mm</td>
</tr>
<tr>
<td>52-303-25</td>
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<td>25 x 25 mm</td>
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<tr>
<td>52-303-50</td>
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<tr>
<td>52-306-25</td>
<td>0.6</td>
<td>25 x 25 mm</td>
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<td>52-306-50</td>
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<td>52-303-26</td>
<td>0.3</td>
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<td>52-303-51</td>
<td>0.3</td>
<td>50 x 50 mm</td>
</tr>
<tr>
<td>52-306-26</td>
<td>0.6</td>
<td>27 x 27 mm</td>
</tr>
<tr>
<td>52-306-51</td>
<td>0.6</td>
<td>50 x 50 mm</td>
</tr>
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<td>52-313-25</td>
<td>Flexible</td>
<td>25 x 25 mm</td>
</tr>
<tr>
<td>52-313-50</td>
<td>Flexible</td>
<td>50 x 50 mm</td>
</tr>
</tbody>
</table>

**Tools**  
**for easy handling**

- **25-402-99**  
  10 cm/4"  
  Handle for screwdriver  
  for all RESORB X™ screws

- **52-010-98**  
  8 cm/3"  
  Screwdriver attachment  
  for all RESORB X™ screws

- **52-201-02**  
  15.5 cm/6"  
  Holding forceps

- **52-201-01**  
  16 cm/6 1/4"  
  Plate holding instrument

- **11-180-15**  
  14.5 cm/5 3/4"  
  Scissors

**Drill bits**

<table>
<thead>
<tr>
<th>Drill bits, cylindrical</th>
<th>Diameter</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>52-013-05</td>
<td>1.3</td>
<td>5 mm</td>
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<tr>
<td>52-013-06</td>
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<td>6 mm</td>
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<tr>
<td>52-013-07</td>
<td>1.3</td>
<td>7 mm</td>
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<tr>
<td>52-013-08</td>
<td>1.3</td>
<td>8 mm</td>
</tr>
<tr>
<td>52-018-06</td>
<td>1.8</td>
<td>6 mm</td>
</tr>
<tr>
<td>52-018-07</td>
<td>1.8</td>
<td>7 mm</td>
</tr>
<tr>
<td>52-018-08</td>
<td>1.8</td>
<td>8 mm</td>
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<tr>
<td>52-021-06</td>
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<td>7 mm</td>
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<tr>
<td>52-021-08</td>
<td>2.1</td>
<td>8 mm</td>
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<table>
<thead>
<tr>
<th>Drill bits, Stryker</th>
<th>Diameter</th>
<th>Length</th>
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</thead>
<tbody>
<tr>
<td>52-113-05</td>
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<td>5 mm</td>
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<tr>
<td>52-113-06</td>
<td>1.3</td>
<td>6 mm</td>
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<tr>
<td>52-113-07</td>
<td>1.3</td>
<td>7 mm</td>
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<td>52-113-08</td>
<td>1.3</td>
<td>8 mm</td>
</tr>
<tr>
<td>52-118-05</td>
<td>1.8</td>
<td>5 mm</td>
</tr>
<tr>
<td>52-118-06</td>
<td>1.8</td>
<td>6 mm</td>
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<tr>
<td>52-118-07</td>
<td>1.8</td>
<td>7 mm</td>
</tr>
<tr>
<td>52-121-06</td>
<td>2.1</td>
<td>6 mm</td>
</tr>
<tr>
<td>52-121-07</td>
<td>2.1</td>
<td>7 mm</td>
</tr>
<tr>
<td>52-121-08</td>
<td>2.1</td>
<td>8 mm</td>
</tr>
</tbody>
</table>

(1 pc each)

**Taps**

<table>
<thead>
<tr>
<th>Taps, self-drilling, with stop</th>
<th>Diameter</th>
<th>Length</th>
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</thead>
<tbody>
<tr>
<td>52-010-16</td>
<td>1.6</td>
<td></td>
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<tr>
<td>52-010-21</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>52-010-24</td>
<td>2.4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Taps, regular</th>
<th>Diameter</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>52-011-16</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>52-011-21</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>52-011-24</td>
<td>2.4</td>
<td></td>
</tr>
</tbody>
</table>

**Adjustable Stop**

<table>
<thead>
<tr>
<th>Adjustable Stop</th>
<th>Diameter</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>52-010-01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1 pc each)
Storage module

All tools and bending templates required for the use of RESORB X™ implants can be conveniently stored and sterilized in a compact storage module.

Compact Instrument Module to include
- Optional insert for the bending templates
- Holding platform for the screw disk
- Complete set of drills and taps for all screw sizes
- Space for three screwdrivers (pick-up and reload, one for tapping holes)

“Easy Heater” thermal unit, the solutionless solution

The “Easy Heater” is a battery- or line-powered heating system for the easy contouring of the RESORB X™ implants.

The “Easy Heater” is a single-use disposable product. It does not contain any toxic or active electronic parts and may be disposed of as part of the normal OR waste. Please check if batteries need to be separated prior to disposal.

The advantages of the system:
- Sterile product (gamma-sterilized)
- Easily adaptable RESORB X™ plates and mesh sheets
- Fast heat-up, extremely easy to use (single-button operation)
- Optional power supply (battery or with power cord)
- Operation without water
- Easy disposal
- Cost effective
- On/Off feature
- Portable
Ordering information

Plates
52-075-04 RESORB X™ Plate, straight, 4 holes, 1 pc.
52-075-08 RESORB X™ Plate, straight, 8 holes, 1 pc.
52-074-04 RESORB X™ Magellan Plate, straight, 6 holes, long, 1 pc.
52-074-08 RESORB X™ Chiilza-Plate, 8 holes, 1 pc.
52-071-04 RESORB X™ Plate, straight, 4 holes, long, 1 pc.
52-085-05 RESORB X™ Y-Plate, 5 holes, long, 1 pc.
52-088-06 RESORB X™ Y-Plate, 2 holes, 1 pc.
52-080-06 RESORB X™ Double Y-Plate, 8 holes, long, 1 pc.
52-095-06 RESORB X™ L-Plate, left, 4 holes, short, 1 pc.
52-095-07 RESORB X™ L-Plate, right, 4 holes, long, 1 pc.
52-096-07 RESORB X™ L-Plate, right, 4 holes, long, 1 pc.

Templates - Plates
52-175-04 Template for 52-075-04
52-175-08 Template for 52-075-08
52-174-04 Template for 52-074-04
52-174-08 Template for 52-074-08
52-177-04 Template for 52-077-04
52-185-05 Template for 52-085-05
52-188-05 Template for 52-088-05
52-190-06 Template for 52-090-06
52-190-05 Template for 52-090-05 and 52-095-06
52-196-07 Template for 52-096-07 and 52-095-07

Mesh
52-303-25 RESORB X™ Mesh Plate 0.3 x 25 mm, 1 pc.
52-303-26 RESORB X™ Mesh Plate 0.3 x 25 mm, 1 pc.
52-303-50 RESORB X™ Mesh Plate 0.3 x 50 mm, 1 pc.
52-303-51 RESORB X™ Mesh Plate 0.3 x 50 mm, 1 pc.
52-306-20 RESORB X™ Mesh Plate 0.6 x 20 mm, 1 pc.
52-306-26 RESORB X™ Mesh Flex. 0.6 x 26 mm, 1 pc.
52-306-50 RESORB X™ Mesh Plate 0.6 x 50 mm, 1 pc.
52-306-51 RESORB X™ Mesh Flex. 0.6 x 50 mm, 1 pc.
52-310-25 RESORB X™ Mesh Plate 1.0 x 25 mm, 1 pc.
52-310-50 RESORB X™ Mesh Plate 1.0 x 50 mm, 1 pc.

Templates - Mesh
52-313-25 Template Mesh 25 x 25 mm
52-313-50 Template Mesh 50 x 50 mm

Screws
52-015-24 RESORB X™ Screws 1.6 x 4 mm, 2 pc.
52-015-25 RESORB X™ Screws 1.6 x 5 mm, 2 pc.
52-015-26 RESORB X™ Screws 1.6 x 5 mm, 2 pc.
52-015-27 RESORB X™ Screws 1.6 x 7 mm, 2 pc.
52-015-44 RESORB X™ Screws 1.6 x 4 mm, 4 pc.
52-015-45 RESORB X™ Screws 1.6 x 5 mm, 4 pc.
52-015-46 RESORB X™ Screws 1.6 x 5 mm, 4 pc.
52-015-47 RESORB X™ Screws 1.6 x 7 mm, 4 pc.
52-015-84 RESORB X™ Screws 1.6 x 8 mm, 8 pc.
52-015-85 RESORB X™ Screws 1.6 x 8 mm, 8 pc.
52-015-86 RESORB X™ Screws 1.6 x 8 mm, 8 pc.
52-015-87 RESORB X™ Screws 1.6 x 7 mm, 8 pc.
52-020-25 RESORB X™ Screws 2.1 x 5 mm, 2 pc.
52-020-27 RESORB X™ Screws 2.1 x 7 mm, 2 pc.
52-020-29 RESORB X™ Screws 2.1 x 9 mm, 2 pc.
52-020-45 RESORB X™ Screws 2.1 x 5 mm, 4 pc.
52-020-47 RESORB X™ Screws 2.1 x 7 mm, 4 pc.
52-020-49 RESORB X™ Screws 2.1 x 9 mm, 4 pc.
52-020-85 RESORB X™ Screws 2.1 x 5 mm, 8 pc.
52-020-87 RESORB X™ Screws 2.1 x 7 mm, 8 pc.
52-020-89 RESORB X™ Screws 2.1 x 9 mm, 8 pc.
52-025-25 RESORB X™ Screws 2.4 x 5 mm, 2 pc.
52-025-27 RESORB X™ Screws 2.4 x 7 mm, 2 pc.

Drill bits
52-013-05 Drill bit 1.3 x 50 5 mm, cylindrical
52-013-06 Drill bit 1.3 x 50 5 mm, cylindrical
52-013-07 Drill bit 1.3 x 50 7 mm, cylindrical
52-013-08 Drill bit 1.3 x 50 8 mm, cylindrical
52-018-06 Drill bit 1.8 x 50 6 mm, cylindrical
52-018-08 Drill bit 1.8 x 50 8 mm, cylindrical
52-018-10 Drill bit 1.8 x 50 10 mm, cylindrical
52-021-06 Drill bit 2.1 x 50 6 mm, cylindrical
52-021-08 Drill bit 2.1 x 50 8 mm, cylindrical
52-113-05 Drill bit 1.3 x 50 5 mm, Blykser
52-113-06 Drill bit 1.3 x 50 5 mm, Blykser
52-113-07 Drill bit 1.3 x 50 7 mm, Blykser
52-113-08 Drill bit 1.3 x 50 8 mm, Blykser
52-118-06 Drill bit 1.8 x 50 6 mm, Blykser
52-118-08 Drill bit 1.8 x 50 8 mm, Blykser
52-118-10 Drill bit 1.8 x 50 10 mm, Blykser
52-118-06 Drill bit 2.1 x 50 6 mm, Blykser
52-118-08 Drill bit 2.1 x 50 8 mm, Blykser

Instruments
52-010-16 Tap 1.6 mm, self-drilling, 1 pc.
52-010-21 Tap 2.1 mm, self-drilling, 1 pc.
52-010-24 Tap 2.4 mm, self-drilling, 1 pc.
52-011-16 Tap 1.6 mm, 1 pc.
52-011-21 Tap 2.1 mm, 1 pc.
52-011-24 Tap 2.4 mm, 1 pc.
52-010-01 Stop for Taps, adjustable, 1 pc.
52-010-08 Screws for Attachment RESORB X™ for 52-025-09
52-301-02 Fixpucke RESORB X™
55-950-40 RESORB X™ Storage Module
55-950-41 RESORB X™ Insert for Templates
11-180-15 Screws
52-301-01 Plate Holding Instrument RESORB X™

Easy Heater
55-960-01 Thermal Unit “Easy Heater”, Battery
55-960-02 Thermal Unit “Easy Heater”, 100-240V