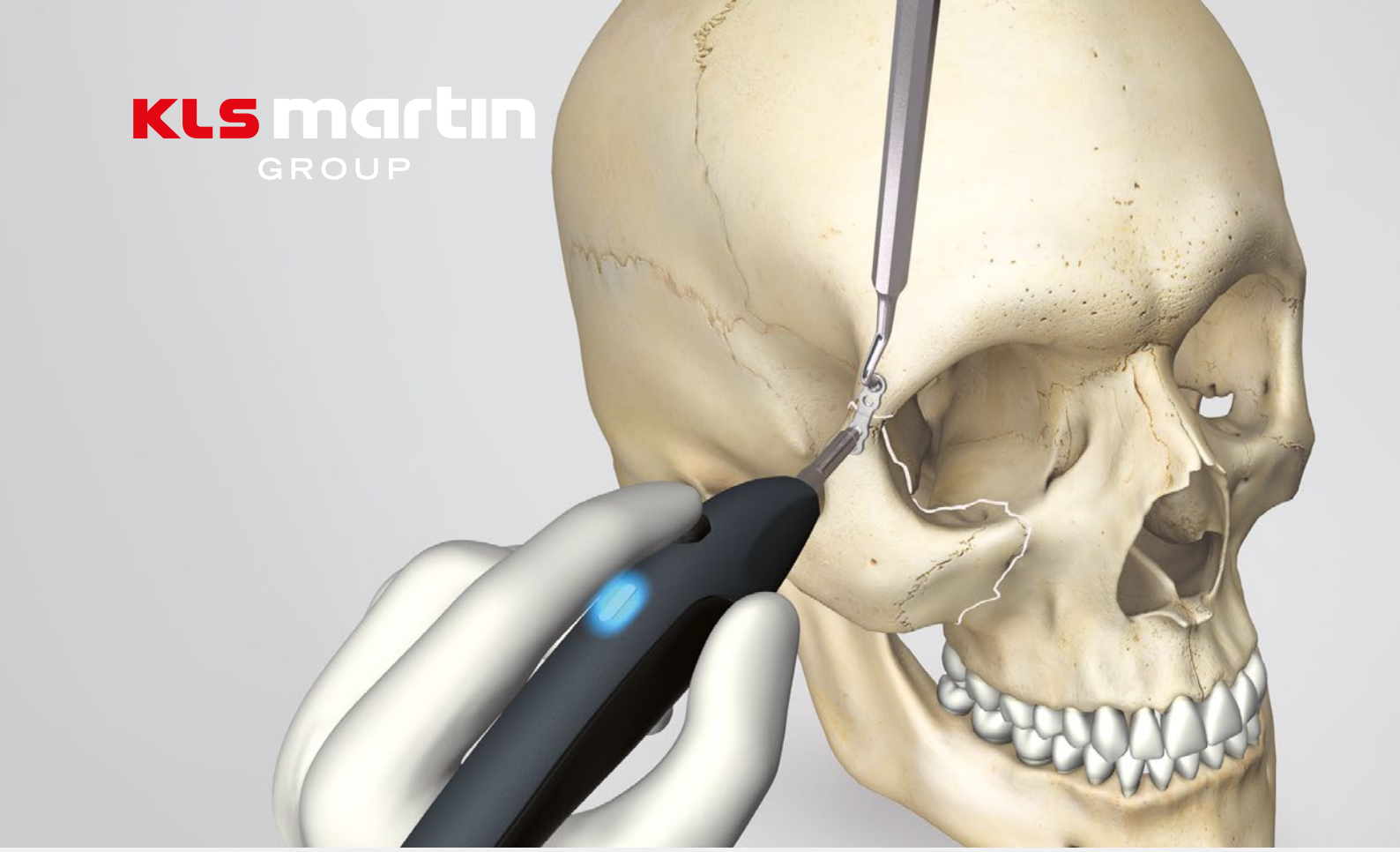
KLS martin GROUP



SonicWeld Rx®

Surgical Techniques and Product Range

www.klsmartin.com

Oral and maxillo-facial surgery is our passion! Its further development, together with our customers, is our ambition. Every day we work on developing innovative products and services which meet the highest demands on quality, and which contribute to the wellbeing of the patient.

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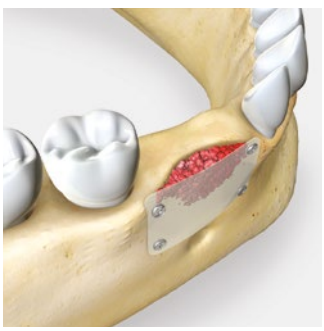
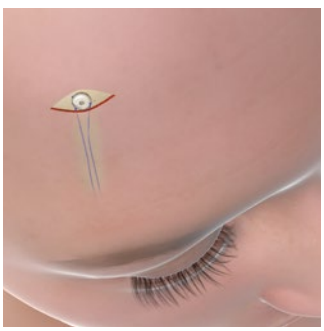
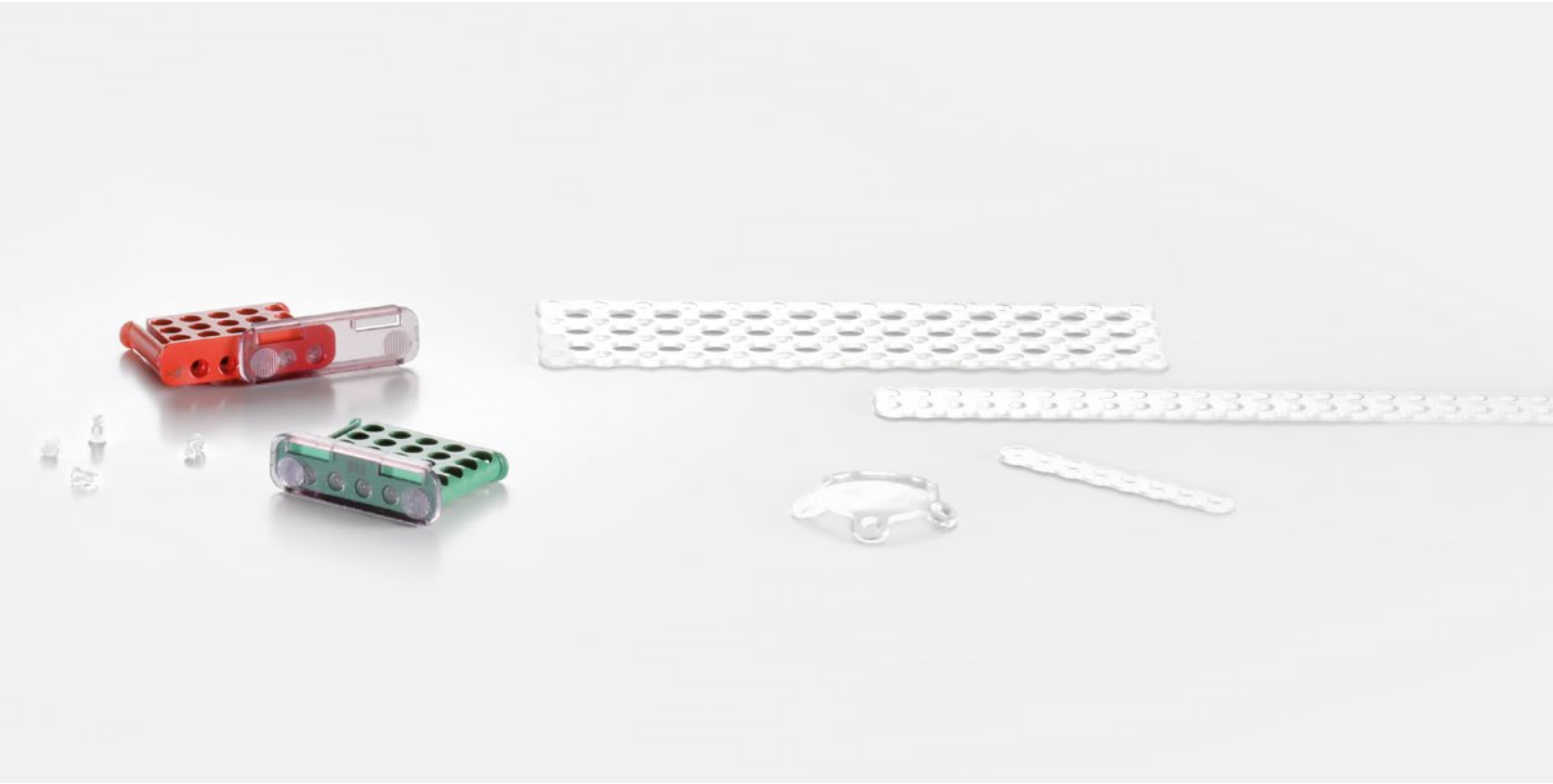
Step by Step to Optimal Fixation

Indications

The KLS Martin Resorb x® and Resorb xG implants are intended for surgical procedures in which an internal fixation by resorbable implants is required for aligning, reconstructing and stabilizing bone tissue.







Surgical Techniques

System configuration

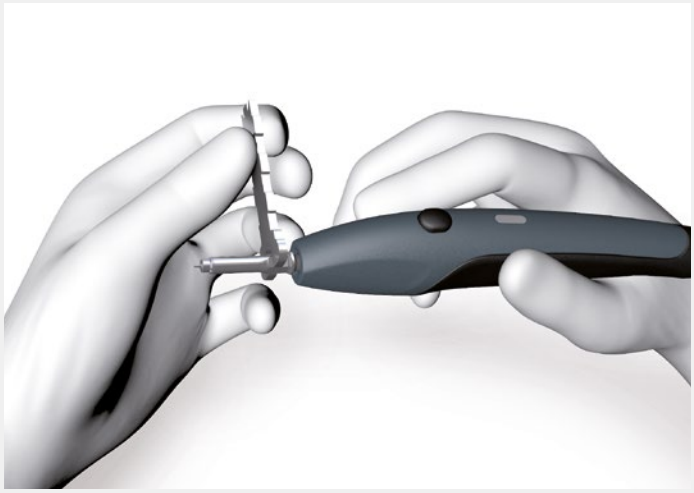
To manage different operative sites and approaches and to facilitate the operation for both right- and left-handed surgeons, it is advantageous to place the SonicWeld Rx® system on a flexible side table.

The SonicWeld Rx® ultrasonic unit must be set up and operated in the non-sterile area of the operating environment.

Sonotrodes, handpieces with connecting cables and the wrench are located in the sterile area of the operating environment, which is why they must be used in sterile condition.

Connect the handpiece to the connecting socket by plugging the connecting cable into the socket following the guide groove.

The connecting cable of the handpiece is approx. 2.95 m long. If this is not long enough, you can order an additional handpiece with long connection cable, which is approx. 6 m long.



Screw the sonotrode manually in place on the handpiece and use the open-end wrench to check it for secure attachment (torque: max. 0.3 Nm).

Plug the mains cable into the ultrasonic unit and then into a mains socket-outlet with ground contact.

As soon as the unit has been connected to the power supply, it is automatically set to standby mode. Therefore, full switch-off is only possible by pulling the plug of the mains cable out of the socket-outlet.

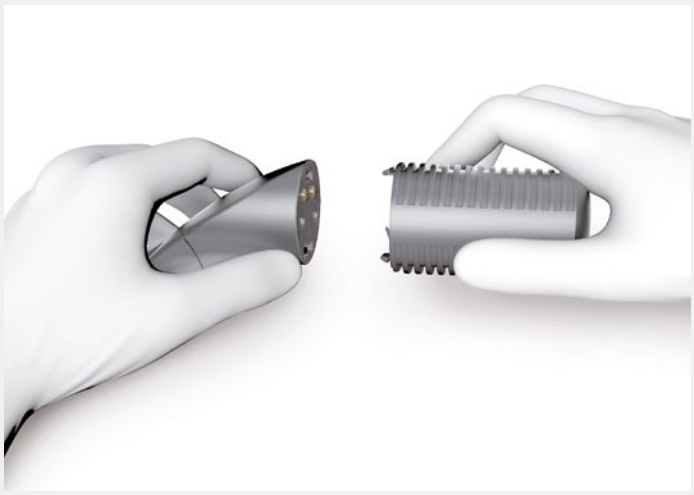
Upon turning on the unit with the on-standby switch, the handpiece is ready for a self-test. This will be indicated by a display icon at the unit and by the blinking blue LED on the handpiece.

The self-test is performed as soon as the handpiece is operated for the first time. Be sure to keep the tip of the sonotrode out of contact with objects during this process. If the test is successful, the unit is automatically set to working mode.

Using two handpieces, the self-test needs to be triggered with each handpiece.

The two handpieces can only be used alternatingly.

By pressing the activation switch of the other handpiece, an acoustic click can be perceived and the „A“ appears in the display side of that handpiece.



Prepare the BOS Drill by plugging in the sterile battery pack into the sterilized handle of the BOS Drill.

Then, insert the appropriate twist drill into the BOS Drill.

The Xcelsior water bath must be set up and operated in the sterile area of the operating environment.

After plugging the mains cable into the device and then into a mains socket-outlet with ground contact, the water bath can be turned on with the on-off switch.

Then, cover the thermal unit ❶ with the sterile cover hood ❷.

Place the sterile water container with the frame ❸ into the sterile cover hood.

The water container can then be filled up with sterile fluid (e. g. aqua destilata, physiologic saline) until the water level reaches the marking (approx. 500 ml).

The water bath is ready for action, when the orange thermo control display „OK“ lights up. Depending on the amount of liquid in the water container, heating time of the device is normally approx. 20 minutes.

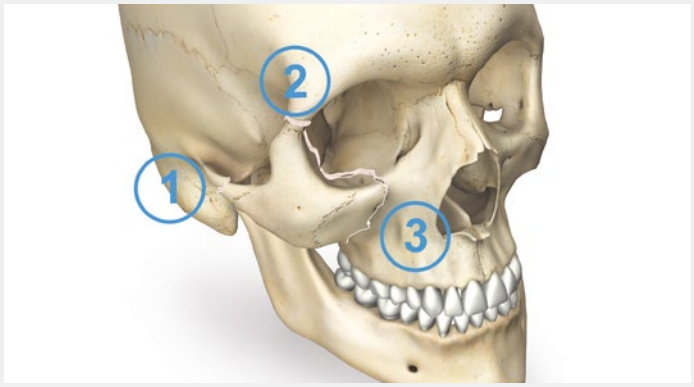
Source: Prof. Dr. Dr. Rolf Ewers, Astrid Reichwein

Preoperative planning

The x-ray shows a right-sided zygomatic complex fracture.
The following three fractures are identified:

❶ fracture of the zygomatic arch
❷ fractures of the inferior orbital rim and anterior and posterior maxillary sinus walls
❸ fracture of the lateral orbital rim

After fracture reduction, a „three point fixation“ will be performed with Resorb x® plates and SonicPins Rx using the SonicWeld Rx® system.



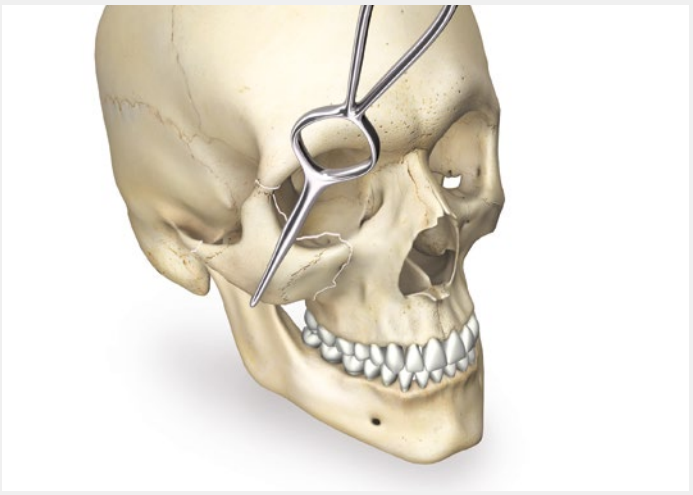
Patient positioning

The patient is placed on his back on the OR table.
Normally, a nasotracheal intubation is aimed.

For the installation of the SonicWeld Rx® system and its accessories, please see page 6 - 10.

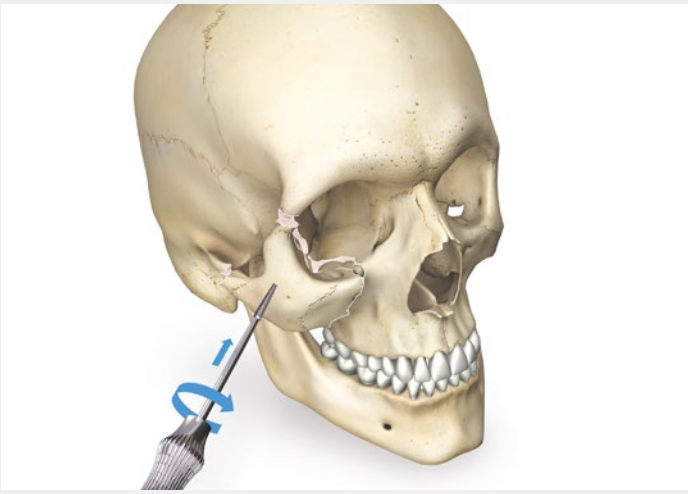
1. Approach / Zygoma reduction

First, the zygoma needs to be mobilized into its proper position. There are various options to perform the reduction.



Option 1

With a retractor via a transoral approach placed through the maxillary vestibular incision.



Option 2

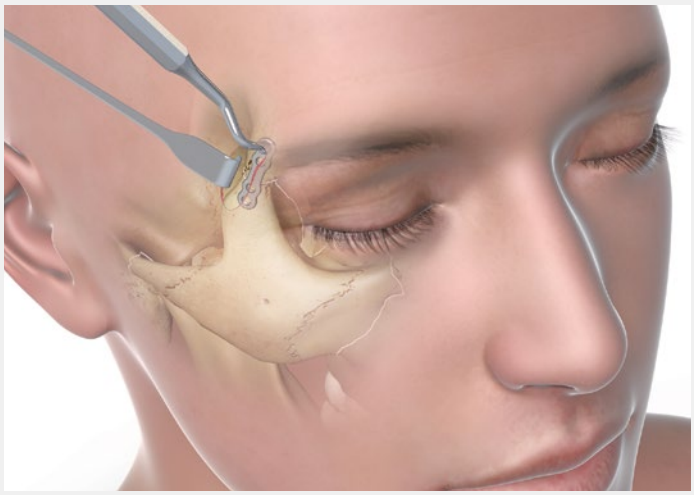
A threaded reduction tool can be used for zygoma reduction inserted percutaneously into the zygoma.

The surgeon can use the Byrd zygoma reduction screw with a conventional screwdriver handle.

2. Bending the lateral orbital wall plate

A 4-hole plate with bar is typically used for this fracture.
The template of the plate is placed across the frontozygomatic fracture area and bent to fit the bone surface. Then, the template is removed from the patient. The appropriate resorbable plate is put on the template and both parts are hold in the preheated water of the Xcelsior water bath.

After only a few seconds the resorbable plate is formable and automatically adapts to the shape of the template.



3. Placing the lateral orbital wall plate

The material cools down quite fast and the implant keeps its shape.

The plate is then placed across the frontozygomatic fracture area. It fits to the bone surface perfectly.

4. Fixation of lateral orbital wall plate

Predrilling

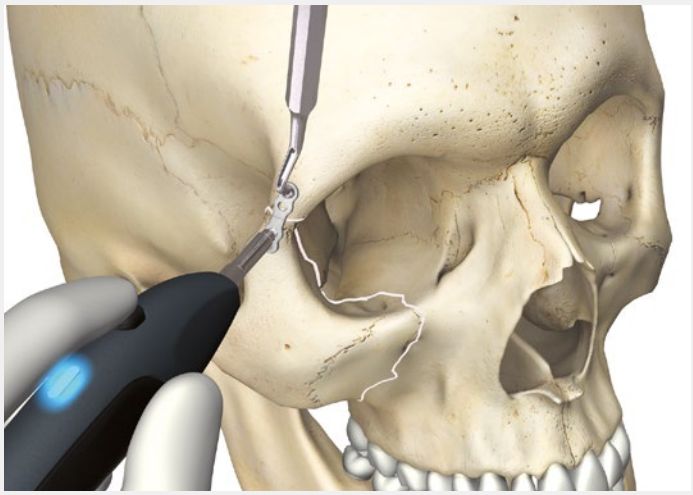
Next, predrill the pilot hole through the positioned plate using a SonicWeld Rx® twist drill. The special Twist Drills are characterized by a triple ring identification marking.

- Twist Drills for Ø 1.6 mm SonicPins Rx are marked with 3 **green** rings.
- Twist Drills for Ø 2.1 mm SonicPins Rx are marked with 3 **red** rings.

Plate-holding forceps, curved

BOS Drill

Twist drill with BOS attachment for Ø 1.6-mm SonicPins Rx



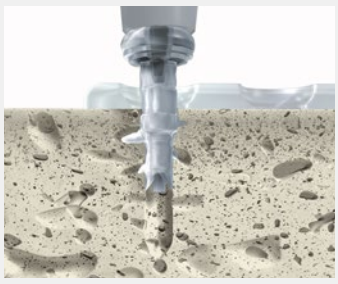
5. Insertion of first SonicPin Rx

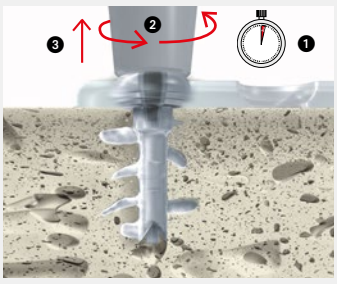
The first SonicPin is placed in the unstable zygomatic fracture.

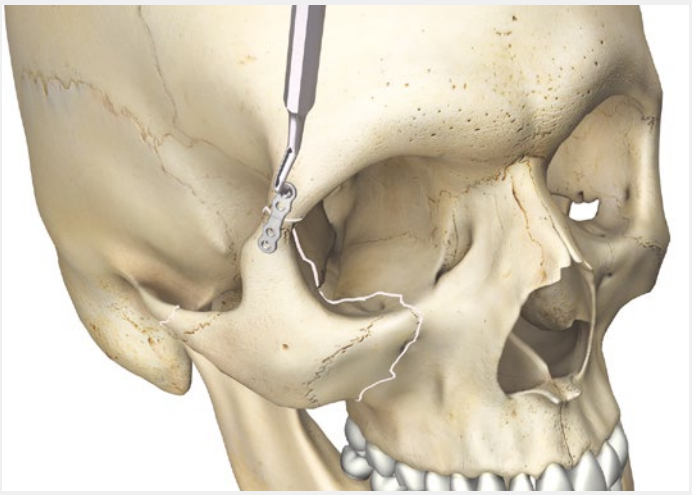
Secure a SonicPin Rx on the tip of the standard sonotrode and seat it into the top of the pilot hole. Apply slight pressure and then activate the ultrasonic unit of the SonicWeld Rx® system by pressing the activation switch. During activation period there is a light and acoustic feedback.

Maintain slight pressure until the head is fully welded into the pilot hole. Then release the switch, but do not yet remove the sonotrode. Allow the SonicPin Rx to cool down for at least two seconds. Finally spin the sonotrode left and right.

Then lift it away.

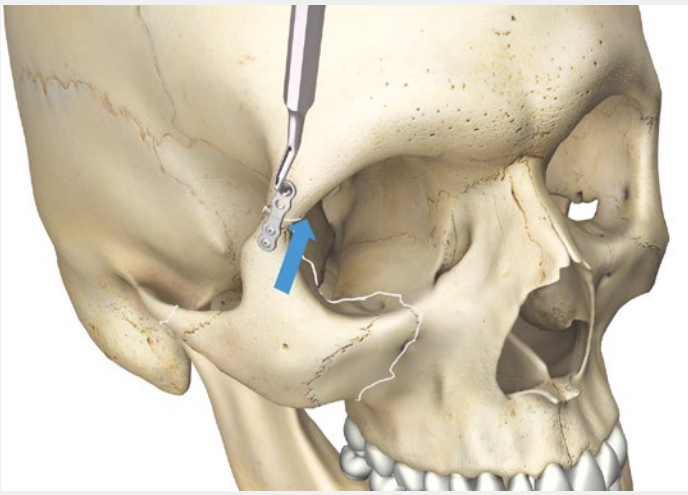






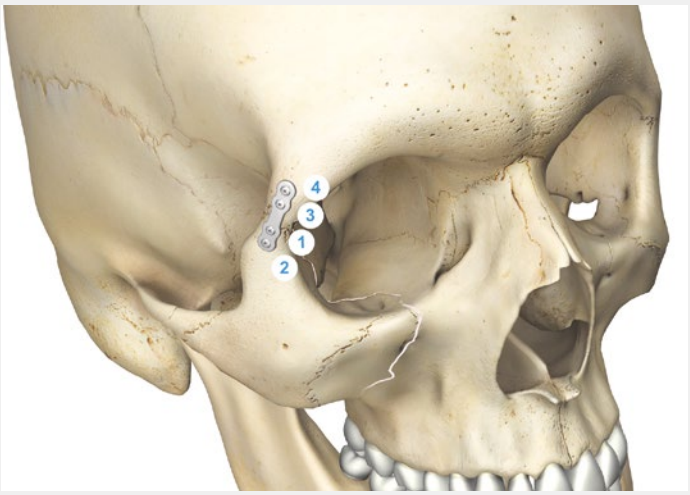
6. Insertion of second SonicPin Rx

The second SonicPin Rx is inserted in the same way also in the unstable zygomatic fracture part to maintain the plate in the correct position.



7. Zygoma reduction

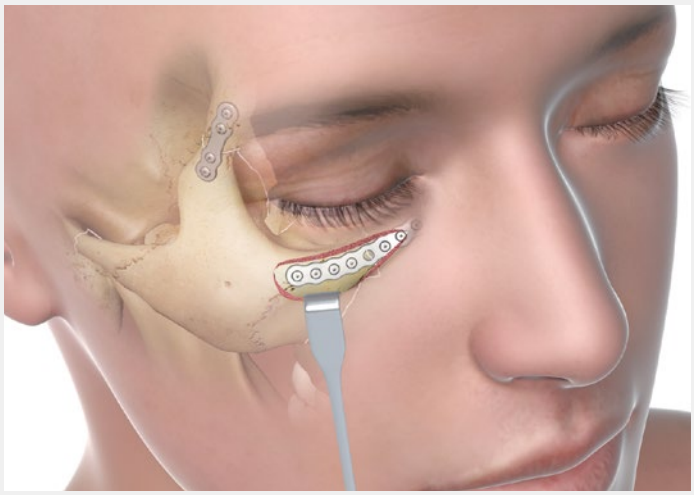
After reduction of the zygomatic fragment into cranial direction the plate holding instrument is assembled during inserting further pins.



8. Insertion of further SonicPins Rx

The third and fourth SonicPins Rx are inserted in the same way as before into the stable bone.

Option:
For smoothing the contours, the smoothing sonotrode may be used as follows: Bring the sonotrode in contact with the plate, press the activation switch until the material liquefies, release the activation switch and finally release the sonotrode.

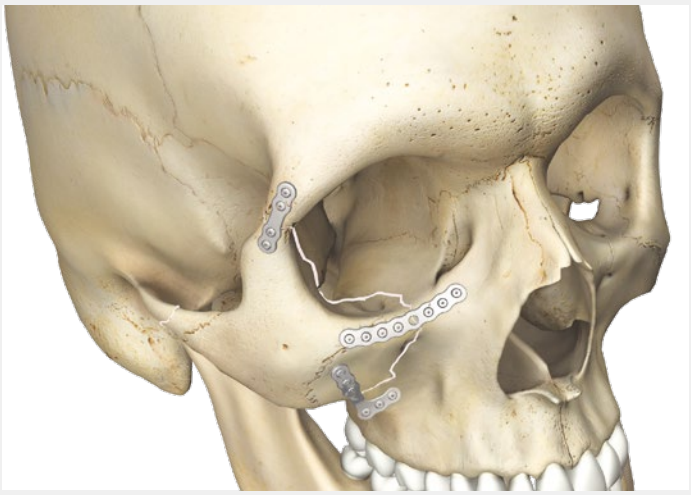


9. Positioning and fixation of the infraorbital rim plate

For this fracture the curved 8-hole plate is the best choice.

After shaping the infraorbital rim plate in the Xcelsior waterbath and if applicable, cutting it with the scissors, it is positioned through a lower eyelid incision. Please make sure that the lateral orbital wall has been properly reduced prior to placing this plate.

The first SonicPin is placed in the unstable zygomatic fracture.



10. Positioning and fixation of zygomatico-maxillary buttress plate

A L-shaped plate is the ideal solution for this fracture.
It is important to three-dimensionally adapt this plate.

- The horizontal portion must be adapted to the most lateral portion of the lateral maxillary buttress, where the bone is still thick enough for insertion of the SonicPins Rx.
- The vertical portion is placed along the alveolar bone. The dental roots must not be harmed.

The L-shaped plate is positioned through a maxillary vestibular incision.

11. Wound closure

Finally after the plate is inserted successfully, the wound can be closed.

Postoperative treatment

The x-ray shows the patient postoperatively.

Remark:
Please note that Resorb x® plates and SonicPins Rx are not visible on the x-ray photograph.

Preoperative planning

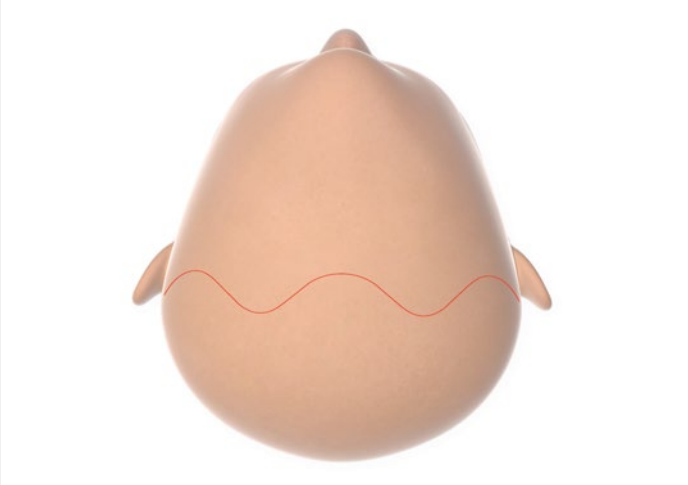
The illustration on the right shows a patient with a clinical picture typical of trigonocephaly.

The typical triangular appearance is due to premature closure of the metopic suture.

Positioning the patient

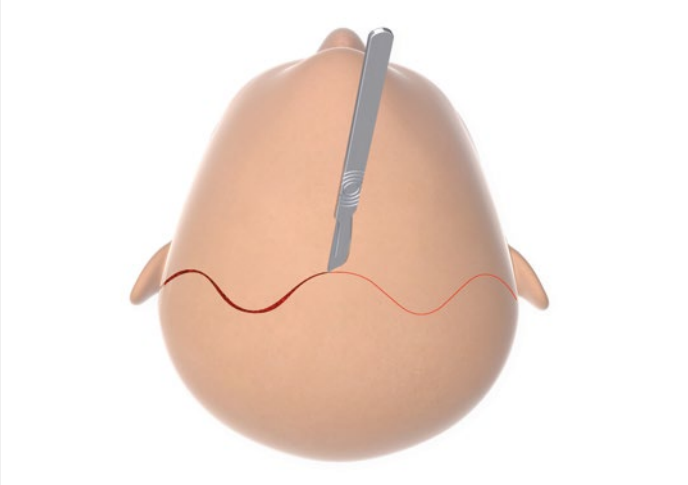
The patient is placed in the supine position on the operating table.

To set up and operate the SonicWeld Rx® system and accessories refer to pages 6 - 10.



1. Coronal approach

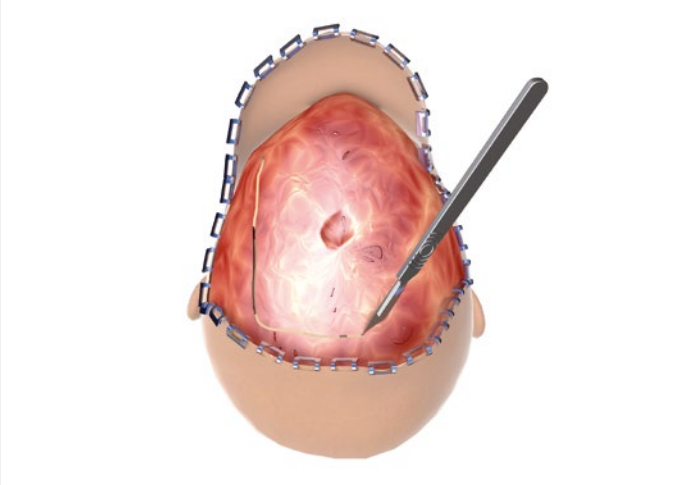
First of all, an undulating coronal incision is marked dorsal to the two coronal sutures under orotracheal anesthesia.



2. Skin incision

A skin flap is first detached along the marked undulating incision.

The skin incision can be made with a scalpel or a monopolar needle.



3. Lifting away the pericranium

After the skin incision and applying skin clips, a skin flap is made down to supraorbital.

Then an epicranial periosteal flap is made, pedunculated to anterior.

Intraoperative hemostasis of soft tissue is performed using bipolar forceps and by applying compresses soaked in hydrogen peroxide. Hemostasis in the bone region is performed with bone wax.

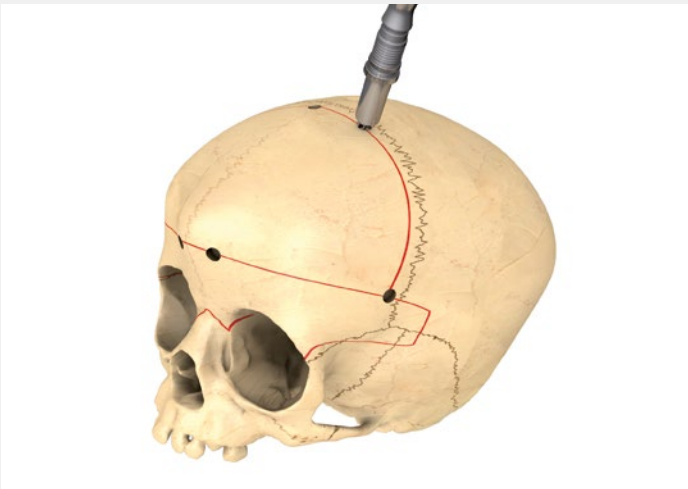
4. Exposure of the cranium

When the epicranial periosteum has been detached, further exposure is conducted with strict bone contact, including the temporal fossae, mobilizing the ventral portion of the temporal muscle on both sides down to the lateral bony orbit, the roof of orbit, preserving and neurolysing the supraorbital nerves and the bony nasal root on both sides.

5. Marking the osteotomy lines

The osteotomy lines are marked. The osteotomy is then performed in two steps:

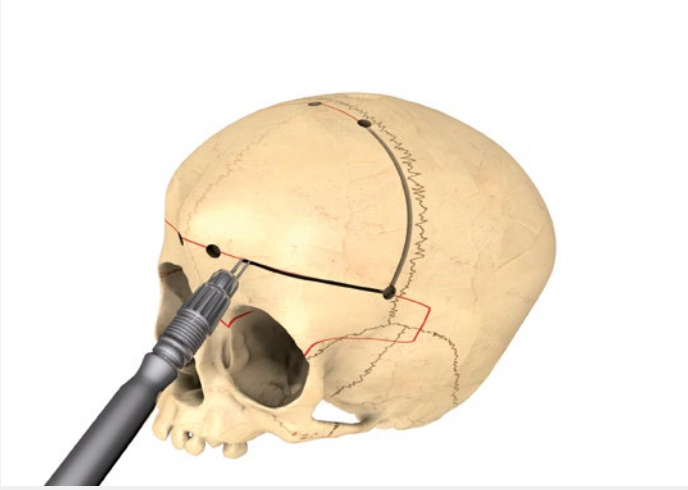
- Osteotomy of the frontal segment
- Osteotomy of the orbital segment



6. Trepanation

First, extracranial craniotomy of a frontal bone cap has to be performed in the region just posterior to the coronal suture and approx. 20 - 25 mm supraorbitally above the frontal bone.

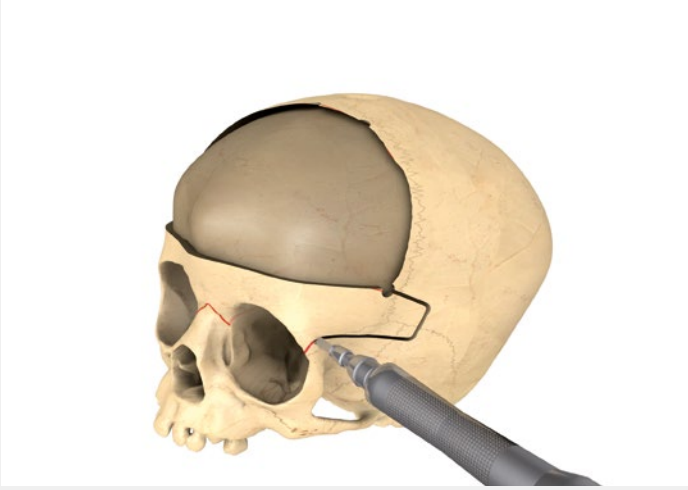
For this purpose a trephine is used to make appropriate burr holes parasagittally and temporally, with which the dura is detached from the bone by undercutting from burr hole to burr hole.



7. Osteotomy of the frontal segment

Osteotomy of the frontal bone segment is performed using a craniotome from burr hole to burr hole.

After removal of the segment the dura is detached from the bone in the region of the frontal and temporal lobes.



8. Osteotomy of the orbital segment

Subsequent osteotomy in the region of the temporal fossa of the orbital segment is performed with the aid of a microsaw, first horizontally, then vertically. After extracranial osteotomy of the lateral orbit up to the connection to the vertical osteotomy line a triangular osteotomy is performed in the region of the nasal root.

The orbital roof and the sphenoid mass are osteotomized from intracranial, protecting the frontal and temporal lobes.

9. Treatment of the orbital segment

There follows extracorporeal treatment of the orbital bone segment: to eliminate the triangular appearance a partial median osteotomy of the inner cortical bone is required in order to widen the frontal bone (by bending up

10. Plate selection

For fixation of the segments both Resorb x® plates and larger meshes can be used, which can be cut to the required size with scissors if necessary.

We recommend warming Resorb x® implants in the prewarmed liquid of an Xcelsior water bath just before they are used. After only a few seconds the implant can be shaped, as a result of which it can easily be adapted to the surface of the bone segment.

11. Fixation of the orbital segment

The next step is to drill a pilot hole through the plate using a SonicWeld Rx® twist drill. The special-purpose pilot drill has a colored mark:

- The pilot drills for Ø 1.6 mm SonicPins Rx are marked with 3 **green** rings.
- The pilot drills for Ø 2.1 mm SonicPins Rx are marked with 3 **red** rings.

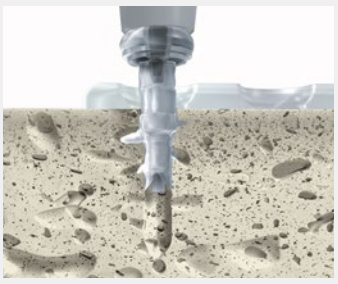
On account of their atraumatic properties, Resorb x® implants can be fixed to the bone either extracranially or intracranially.

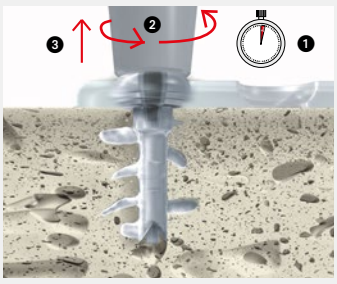
12. Insertion of the SonicPins Rx

The next step is medial fixation of the upward-bent orbital segment.

The first SonicPin is secured with the tip of a standard sonotrode and is thus mounted on the pilot hole. By applying slight pressure toward the pilot hole and then operating the finger actuator the ultrasound unit of the SonicWeld Rx® system is actuated and the pin is inserted.

Pressure should be maintained until the head of the pin is secure in the hole. Then the finger actuator is released, without removing the sonotrode from the implantation site. The surgeon should allow the SonicPin Rx to cool down for a few seconds. Then the sonotrode is completely detached and withdrawn with a twisting motion.





BOS Drill

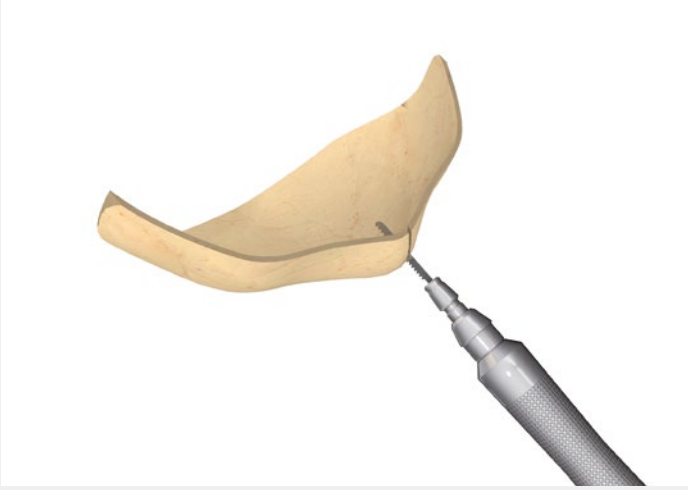
Twist drill with BOS attachment for Ø 1.6-mm SonicPins Rx

13. Fixation of the orbital segment to the cranium

For harmonious shaping of the orbital segment the latter has to be weakened lateroorbitally on both sides in the region of the inner cortical bone.

Following reduction and fixation of the orbital segment in the region of the nasal root, check symmetry and profile.

For bilateral fixation of the orbital segment in the region of the temporal bone or remaining frontal bone (“tongue in groove”) Resorb x® plates or meshes are used.



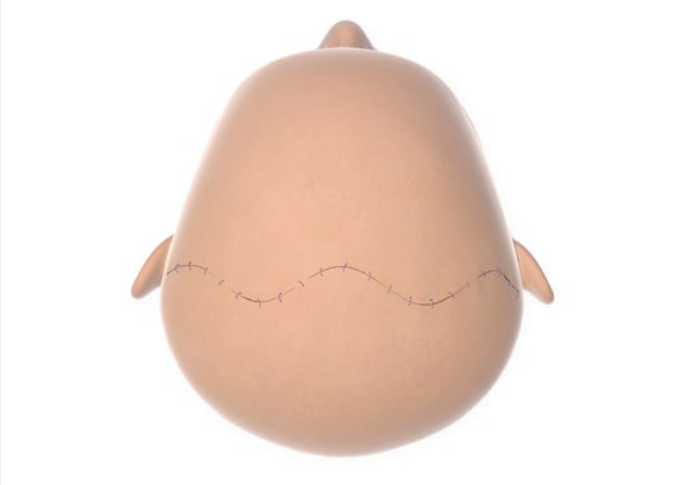
14. Treatment of the frontal segment

The last step is to adapt the frontal bone cap to the newly shaped orbital segment in order to achieve homogeneous forehead curvature. To be able to adapt the frontal bone cap to the newly shaped forehead, it must be transected along the metopic suture. Normally, due to adaptation the metopic suture region is automatically opened, whereby the more severe the clinical picture, the larger the gap.

15. Fixation with more plates

After the opening of the closed frontal suture there are usually two frontal bone segments. These may have to be rotated through 180 degrees to ensure that the frontal segments connect to the orbital segment in a harmonious curve.

Placement of the two frontal segments is followed by fixation to the orbital bone segment with small resorbable osteosynthesis plates.



16. Wound closure

The epicranial periosteum and the skin flap are reduced when the temporal muscle has also been reattached carefully on both sides.

Before layer-by-layer skin closure a low-suction drain is attached.

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SonicWeld Rx®

SonicWeld Rx® System

52-500-20-04	**SonicWeld Rx® basic set, consisting of:**
52-500-21-04	Ultrasonic unit SonicWeld Rx®
52-500-23-04	Handpiece with finger activation
52-501-21-04	Standard sonotrode, straight
52-502-01-04	Wrench for sonotrodes

52-500-21-04

Ultrasonic unit, alone
SonicWeld Rx®

1 unit(s)

52-500-23-04

Handpiece with finger activation, 2.95 m cable

52-500-24-04

Handpiece with finger activation, 6 m cable

1 unit(s)

Explanation of icons:

St Stainless steel

1 unit(s) Packaging unit

52-501-21-04

Standard sonotrode, straight

St 1 unit(s)

52-501-22-04

Standard sonotrode, angled

St 1 unit(s)

52-501-23-04

Smoothing sonotrode, straight

St 1 unit(s)

52-501-24-04

Smoothing sonotrode, angled

St 1 unit(s)

52-502-01-04

Wrench for sonotrodes

St 1 unit(s)

SonicWeld Rx®
Xcelsior Water Bath

Xcelsior Water Bath

52-400-10-04

Xcelsior water bath
complete

1 unit(s)

52-400-13-04

Cover hood

1 unit(s)

52-400-14-07

Water container
with frame

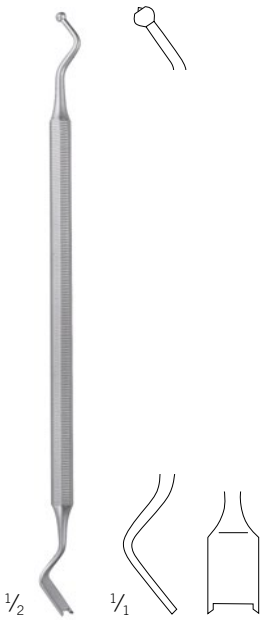
1 unit(s)

Explanation of icons:

St Stainless steel

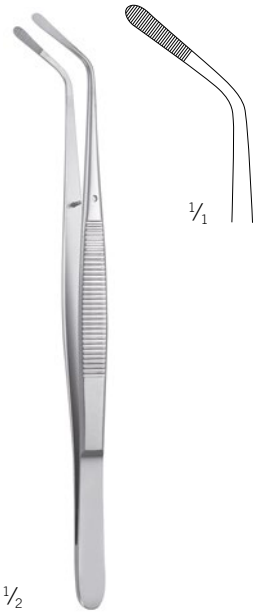
1 unit(s) Packaging unit

Instruments



52-201-01-07
Plate-holding instrument

St 1 unit(s)



52-201-02-07
Plate-holding forceps, curved

St 1 unit(s)

11-180-15-07
Scissors

St 1 unit(s)

SonicWeld Rx®
BOS Drill

50-800-03-07

BOS Drill
w/o battery pack

1 unit(s)

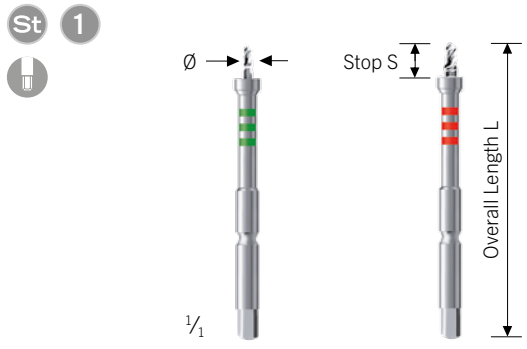
50-800-02-04

Battery pack,
sterile

1 unit(s)

Explanation of icons:

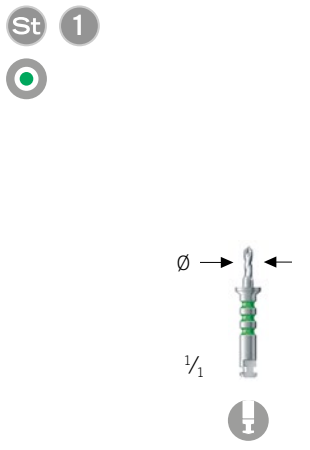
- St — Stainless steel
- for BOS Drill
- 1 — Packaging unit
- STERILE R — Sterile packaged implants



SonicPins Rx	S	L	Ø	Non-Sterile	STERILE R
Ø 1.6 mm					
Core Hole	3 mm	40 mm	1.0 mm	52-610-03-07	
Core Hole	4 mm	40 mm	1.0 mm	52-610-04-07	52-610-04-71
Core Hole	5 mm	40 mm	1.0 mm	52-610-05-07	
Core Hole	8 mm	40 mm	1.0 mm	52-610-08-07	
Ø 2.1 mm					
Core Hole	3 mm	40 mm	1.6 mm	52-616-03-07	
Core Hole	4 mm	40 mm	1.6 mm	52-616-04-07	52-616-04-71
Core Hole	5 mm	40 mm	1.6 mm	52-616-05-07	
Core Hole	10 mm	40 mm	1.6 mm	52-616-10-07	

SonicWeld Rx®
Twist Drills

Twist drills
for 1.6-mm SonicPins Rx

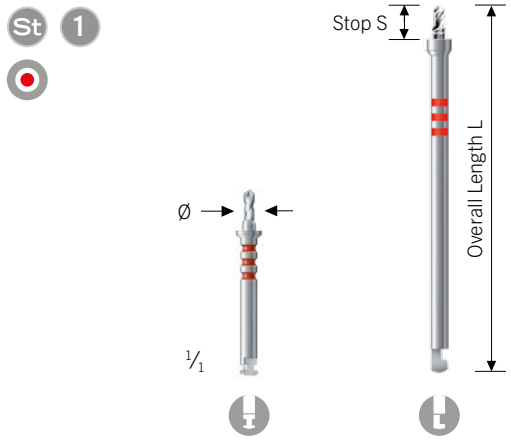


SonicPins Rx	S	L	Ø	Non-Sterile	STERILE R
Dental attachment					
Core Hole	5 mm	20.0 mm	1.0 mm	52-509-05-07	52-509-05-71
Core Hole	5 mm	29.5 mm	1.0 mm	52-512-05-07	
Core Hole	6 mm	20.0 mm	1.0 mm	52-509-06-07	52-509-06-71
Core Hole	6 mm	39.5 mm	1.0 mm	52-512-06-07	
J-notch attachment					
Core Hole	3 mm	50.0 mm	1.0 mm	52-510-03-07	
Core Hole	4 mm	50.0 mm	1.0 mm	52-510-04-07	52-510-04-71
Core Hole	5 mm	50.0 mm	1.0 mm	52-510-05-07	52-510-05-71
Core Hole	6 mm	50.0 mm	1.0 mm	52-510-06-07	
Core Hole	7 mm	50.0 mm	1.0 mm	52-510-07-07	52-510-07-71
Core Hole	8 mm	50.0 mm	1.0 mm	52-510-08-07	

Explanation of icons:

- St — Stainless steel
- Dental attachment
- J-notch attachment
- 1 — Packaging unit
- STERILE R — Sterile packaged implants

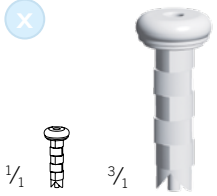
Twist drills
for 2.1-mm SonicPins Rx



SonicPins Rx	S	L	Ø	Non-Sterile	STERILE R
Dental attachment					
Core Hole	4 mm	28.5 mm	1.6 mm	52-518-04-07	
Core Hole	5 mm	20.0 mm	1.6 mm	52-515-05-07	52-515-05-71
Core Hole	5 mm	29.5 mm	1.6 mm	52-518-05-07	
Core Hole	6 mm	20.0 mm	1.6 mm	52-515-06-07	52-515-06-71
Core Hole	6 mm	30.5 mm	1.6 mm	52-518-06-07	
Core Hole	10 mm	24.5 mm	1.6 mm	52-515-10-07	
Core Hole	10 mm	34.5 mm	1.6 mm	52-518-10-07	
Core Hole	20 mm	34.5 mm	1.6 mm	52-515-20-07	
Core Hole	20 mm	44.5 mm	1.6 mm	52-518-20-07	
Scorrimento	10 mm	22.0 mm	2.1 mm	52-522-10-07	
Scorrimento	10 mm	32.0 mm	2.1 mm	52-525-10-07	
J-notch attachment					
Core Hole	3 mm	50.0 mm	1.6 mm	52-516-03-07	
Core Hole	4 mm	50.0 mm	1.6 mm	52-516-04-07	52-516-04-71
Core Hole	5 mm	50.0 mm	1.6 mm	52-516-05-07	52-516-05-71
Core Hole	6 mm	50.0 mm	1.6 mm	52-516-06-07	
Core Hole	8 mm	50.0 mm	1.6 mm	52-516-08-07	
Core Hole	10 mm	50.0 mm	1.6 mm	52-516-10-07	
Scorrimento	35 mm	70.0 mm	2.2 mm	50-022-01-07	

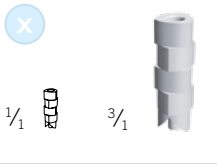
SonicWeld Rx® Implants
SonicPins Rx

1.6-mm SonicPins Rx



Pin length	Item No.	Item No.	Item No.
4 mm	52-516-24-04 2	52-516-54-04 5	52-616-24-04 20
5 mm	52-516-25-04 2	52-516-55-04 5	52-616-25-04 20
6 mm	52-516-26-04 2	52-516-56-04 5	
7 mm	52-516-27-04 2	52-516-57-04 5	

1.6-mm Micro SonicPins Rx

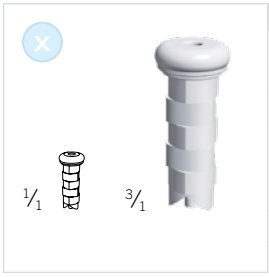


Pin length	Item No.	Item No.
5 mm	52-519-25-04 2	52-519-45-04 4

Explanation of icons:

- Resorb x®
- 1 Packaging unit
- STERILE R Sterile packaged implants

2.1-mm SonicPins Rx



Pin length	Item No.	Item No.	Item No.
4 mm	52-521-24-04 2	52-521-54-04 5	52-621-24-04 20
5 mm	52-521-25-04 2	52-521-55-04 5	52-621-25-04 20
7 mm	52-521-27-04 2	52-521-57-04 5	
9 mm	52-521-29-04 2	52-521-59-04 5	
11 mm	52-521-31-04 2		
13 mm	52-521-33-04 2		
15 mm	52-521-35-04 2		
17 mm	52-521-37-04 2		

2.1-mm Endobrow SonicPins Rx

Pin length	Item No.
4 mm	52-641-14-04 1
5 mm	52-641-15-04 1

SonicWeld Rx® Implants
Resorb x® Plates

1/1

52-080-04-04 1
= 0.8 mm

52-075-04-04 1
= 1.0 mm

52-175-04-04 1
Template

1/1

52-082-04-04 1
= 0.8 mm

52-077-04-04 1
= 1.0 mm

52-177-04-04 1
Template

1/1

52-076-04-04 1
Magdeburg
= 1.0 mm

52-176-04-04 1
Template

1/1

52-075-08-04 1
= 1.0 mm

52-175-08-04 1
Template

1/1

52-076-22-04 1
= 1.0 mm

1/1

52-076-08-04 1
= 1.0 mm

52-176-08-04 1
Template

Explanation of icons:

- Resorb x®
- Aluminum
- Packaging unit
- Plate profile
- STERILE R — Sterile packaged implants

1/1

52-095-06-04 1

= 1.0 mm

52-196-06-04 1

Template

1/1

52-096-06-04 1

= 1.0 mm

52-196-06-04 1

Template

1/1

52-095-07-04 1

= 1.0 mm

52-196-07-04 1

Template

1/1

52-096-07-04 1

= 1.0 mm

52-196-07-04 1

Template

1/1

52-085-05-04 1

= 1.0 mm

52-185-05-04 1

Template

1/1

52-090-06-04 1

= 1.0 mm

52-190-06-04 1

Template

1/1

52-088-06-04 1

= 1.0 mm

52-188-06-04 1

Template

SonicWeld Rx® Implants
Resorb x® Meshes and Templates

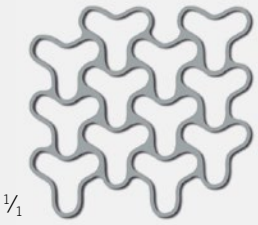
52-303-26-04 1
flexible, 29 x 29 mm
= 0.3 mm

52-306-26-04 1
flexible, 29 x 29 mm
= 0.6 mm

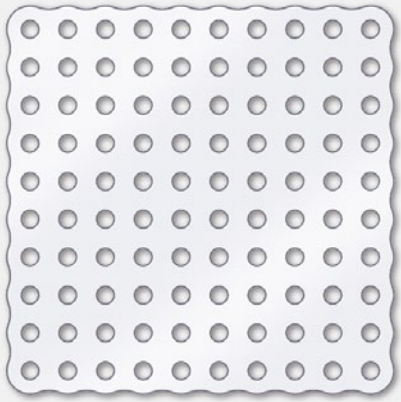
52-303-25-04 1
26 x 26 mm
= 0.3 mm

52-306-25-04 1
26 x 26 mm
= 0.6 mm

52-310-25-04 1
26 x 26 mm
= 1.0 mm



52-313-25-04 Ti 1
25 x 25 mm
Template

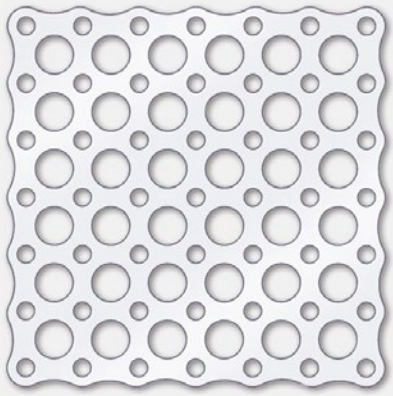


52-303-50-04 1
51 x 51 mm
= 0.3 mm

52-306-50-04 1
51 x 51 mm
= 0.6 mm

52-308-50-04 1
53 x 53 mm
= 0.8 mm

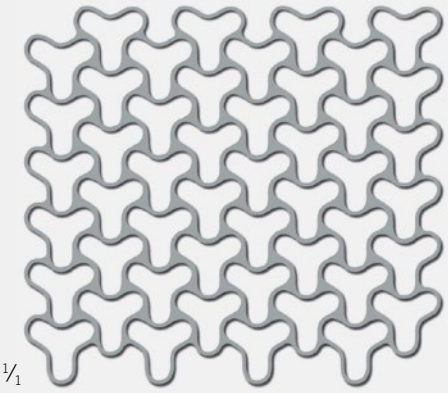
52-310-50-04 1
51 x 51 mm
= 1.0 mm



52-303-51-04 1
flexible, 51 x 51 mm
= 0.3 mm

52-306-51-04 1
flexible, 51 x 51 mm
= 0.6 mm

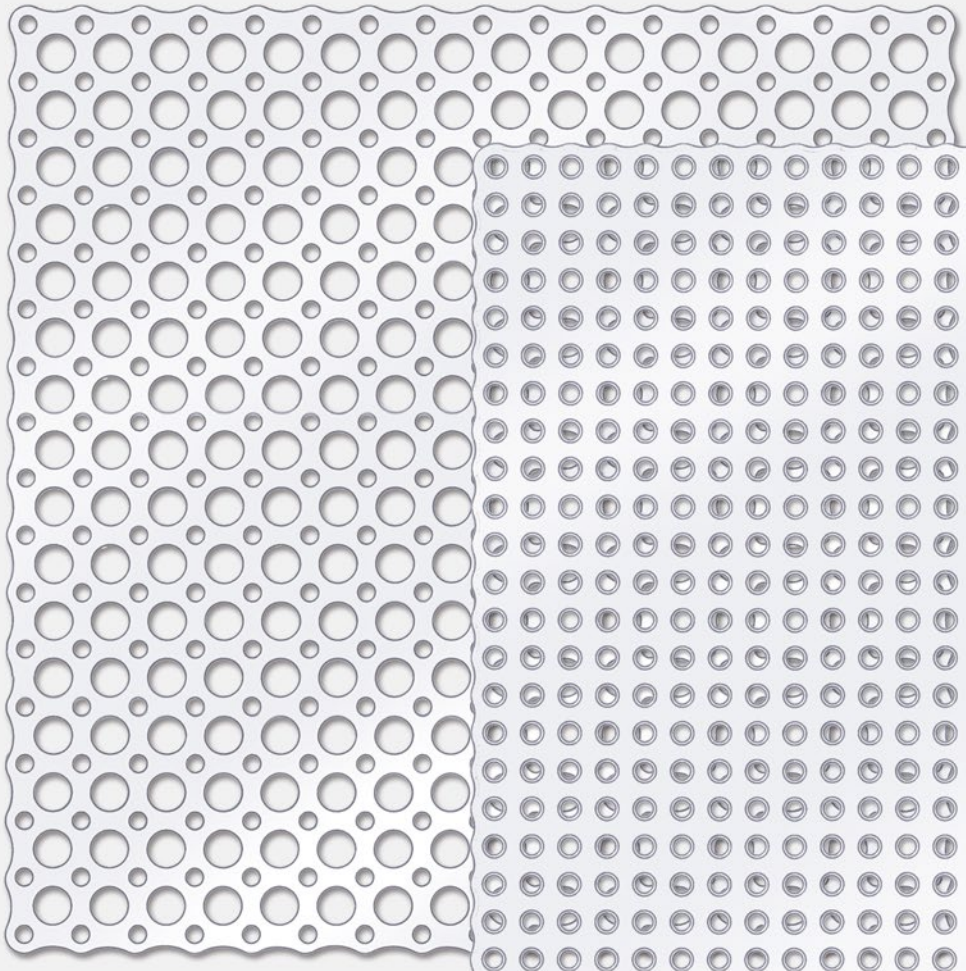
52-310-53-04 1
flexible, 51 x 51 mm
= 1.0 mm



52-313-50-04 Ti 1
50 x 50 mm
Template

Explanation of icons:

- Resorb x®
- Aluminum
- Packaging unit
- Plate profile
- STERILE R — Sterile packaged implants

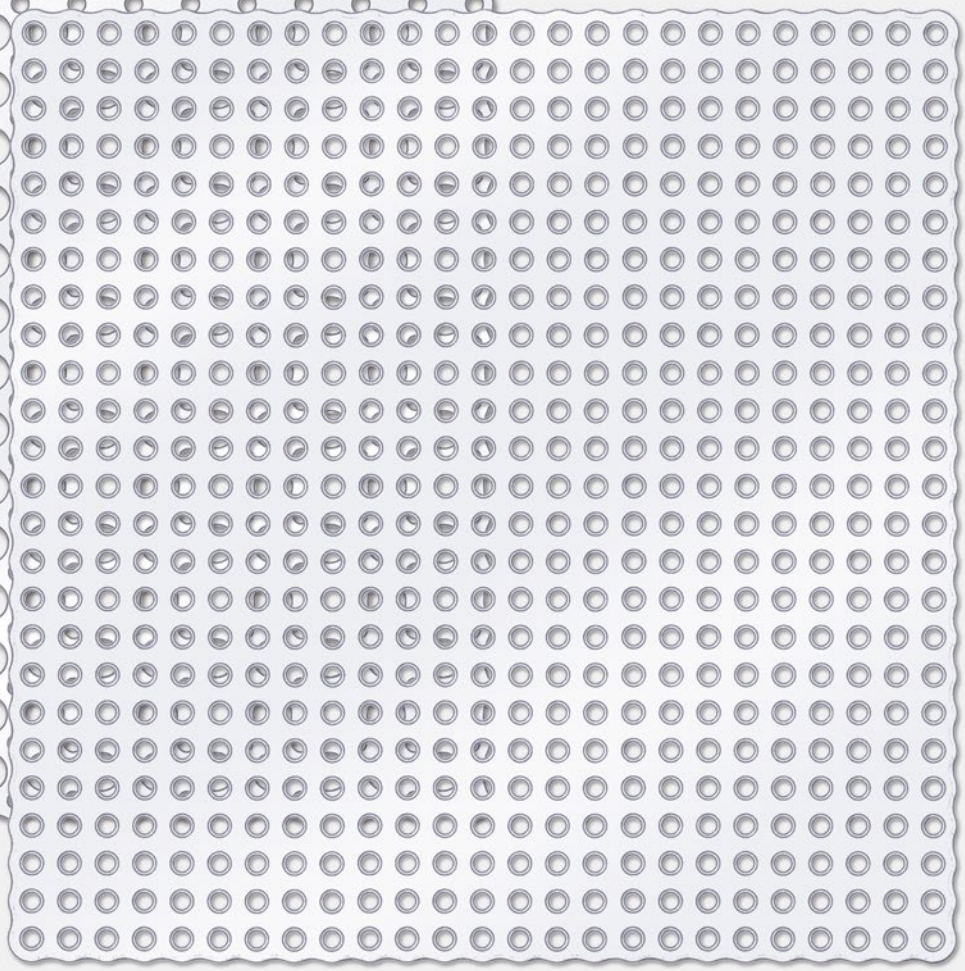


1/1

52-306-12-04

flexible, 126 x 126 mm

= 0.6 mm



1/1

52-310-12-04

flexible, 126 x 126 mm

= 1.0 mm

52-310-13-04

126 x 126 mm

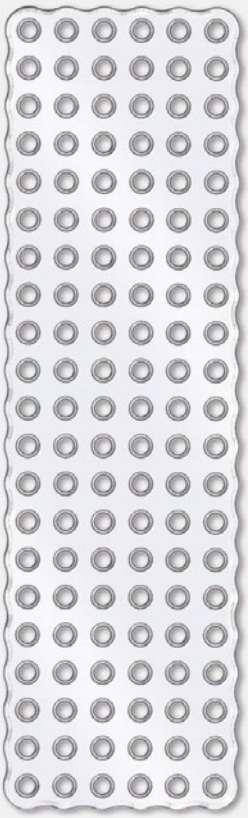
= 1.0 mm

SonicWeld Rx® Implants
Resorb x® Meshes

1/1

52-306-27-04 x 1
29 x 104 mm
= 0.6 mm

52-310-27-04 x 1
29 x 104 mm
= 1.0 mm



1/1

52-310-31-04 x 1
31 x 106 mm
= 1.0 mm

1/1

52-308-11-04 x 1
11 x 126 mm
= 0.8

52-310-11-04 x 1
11 x 126 mm
= 1.0 mm

Explanation of icons:

- Resorb x®
- 1 Packaging unit
- Plate profile
- STERILE R Sterile packaged implants

1/1

52-251-00-04

16 x 251 mm

= 1.0 mm

52-251-01-04

16 x 251 mm

= 1.5 mm

1/1

52-311-11-04

11 x 249 mm

= 1.0 mm

52-311-15-04

11 x 249 mm

= 1.5 mm

1/1

52-314-31-04

11 x 310 mm, curved

= 1.0 mm

SonicWeld Rx® Implants
Resorb x® Orbita Floor Meshes and Burr Hole Covers

52-306-17-04 1

17 x 17 mm

Foil for orbital floor

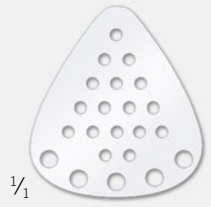
= 0.1 mm

52-306-19-04 1

23 x 19 mm

Mesh for orbital floor

= 0.3 mm

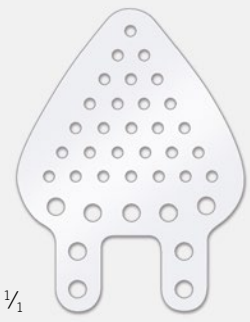


52-306-23-04 1

Ø 23 mm

Mesh for orbital floor

= 0.6 mm



52-306-30-04 1

Ø 30 mm

Foil for orbital floor

= 0.6 mm

52-306-40-04 1

40 x 40 mm

Foil for orbital floor

= 0.6 mm

52-306-24-04 1

Ø 30 mm

Foil for orbital floor

= 0.6 mm

Explanation of icons:

Resorb x®

Packaging unit

Plate profile

STERILE R Sterile packaged implants

flat

52-312-12-04

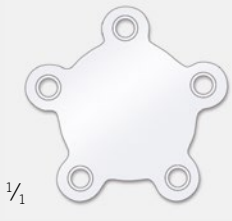
Ø = 12 mm

= 1.0 mm

52-312-17-04

Ø = 17 mm

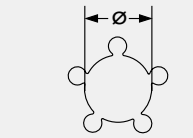
= 1.0 mm



52-312-22-04

Ø = 22 mm

= 1.0 mm



52-091-06-04

= 1.0 mm

contoured

52-312-13-04

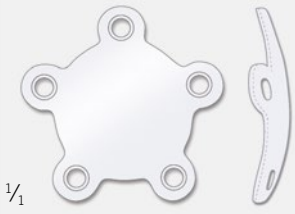
Ø = 12 mm

= 1.0 mm

52-312-18-04

Ø = 17 mm

= 1.0 mm



52-312-23-04

Ø = 22 mm

= 1.0 mm

52-092-06-04

= 1.0 mm

SonicWeld Rx® Implants
Resorb x® Membranes and Non-Perforated Meshes

1/1

52-301-28-04 1

25 x 25 mm

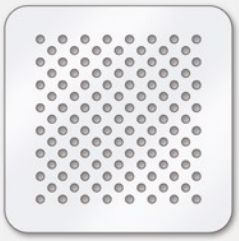
= 0.1 mm

1/1

52-301-38-04 1

25 x 25 mm

= 0.1 mm



1/1

52-302-31-04 1

30 x 30 mm

= 0.2 mm

1/1

52-301-20-04 1

50 x 20 mm

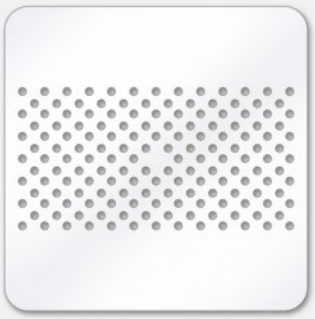
= 0.1 mm

1/1

52-302-30-04 1

50 x 20 mm

= 0.2 mm



1/1

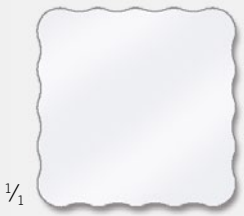
52-302-41-04 1

40 x 40 mm

= 0.2 mm

Explanation of icons:

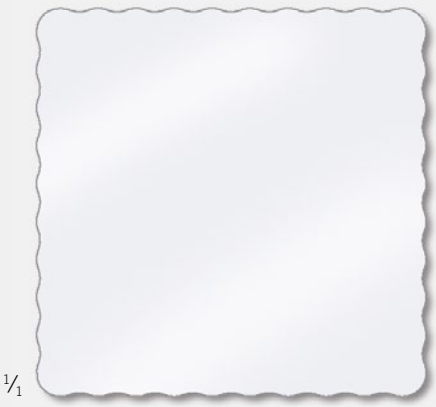
- Resorb x®
- Packaging unit
- Plate profile
- STERILE R — Sterile packaged implants



1/1

52-303-28-04
26 x 26 mm
= 0.3 mm

52-306-28-04
26 x 26 mm
= 0.6 mm



1/1

52-303-52-04
51 x 51 mm
= 0.3 mm

52-306-52-04
51 x 51 mm
= 0.6 mm

52-310-52-04
51 x 51 mm
= 1.0 mm

1/1

52-310-32-04
31 x 51 mm
= 1.0 mm

1/1

52-310-14-04
11 x 126 mm
= 1.0 mm

SonicWeld RxG Implants
New resorbable Polymer

Since Resorb x® was launched back in 2000, the intrinsically amorphous polymer consisting of PDLLA is well-known all over the world.

Now, we are pleased to be able to present another resorbable polymer that supplements the SonicWeld technology:

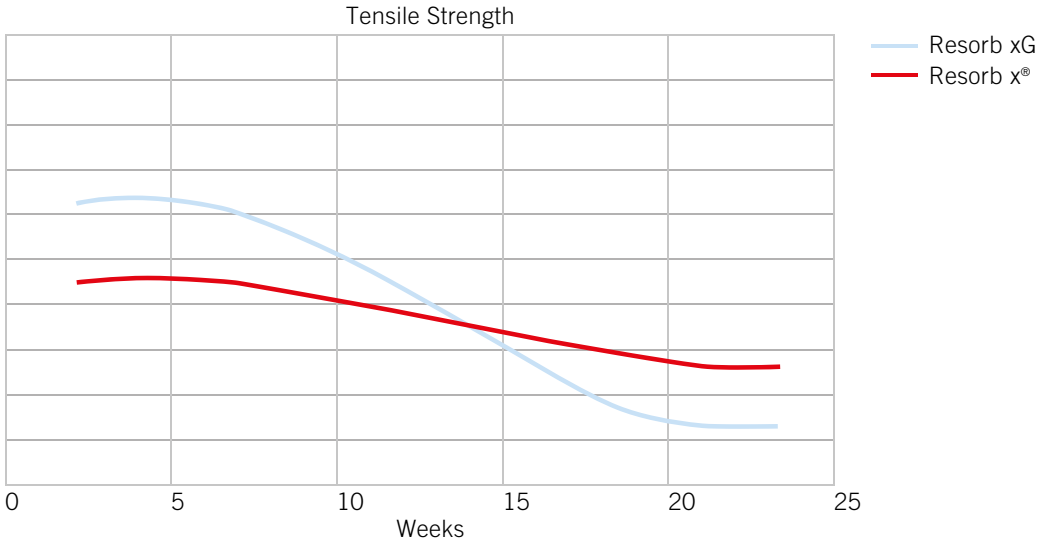
Resorb xG

Its base material is PLLA-PGA. The two substances are mixed at a ratio of 85% PLLA (poly-L-lactic acid) and 15% PGA (poly glycolic acid). The initial tensile strength of Resorb xG is significantly higher than that of Resorb x®. Furthermore, PGA is a substance that binds water easily to store it. Consequently, Resorb xG tends to degrade faster than Resorb x® (12 – 14 months).

Thanks to those facts, however, Resorb xG implants tend to be superior to Resorb x® implants in some clinical applications.

Resorb xG implants are also compatible with the SonicWeld Rx® technology without any handling differences compared to Resorb x® and can be fixed in place with the usual SonicPins Rx.

Resorbable materials maintain the majority of their strength for 8 - 10 weeks. After the loss of strength, the material will be processed by the body in the Krebs cycle into CO_2 and water. Complete degradation of the implant will vary depending on the size and location of the implant, and the age of the patient.



Example for mechanical properties

The chart above compares the tensile strength of Resorb x® and Resorb xG polymers.
The measurements were done in vitro with standardized tensile bars at 37°C.

SonicWeld RxG Implants
New resorbable Polymer

1/1

52-877-04-04 XG 1

= 1.0 mm

52-877-04-04 AI 1

Template

1/1

52-876-22-04 XG 1

= 1.0 mm

1/1

52-890-06-04 XG 1

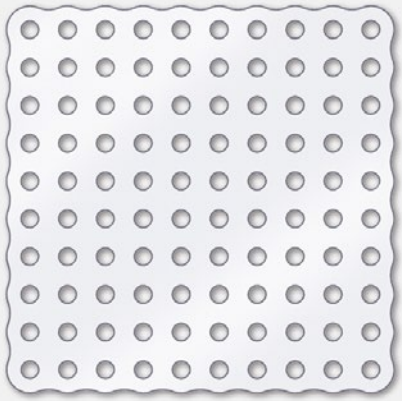
= 1.0 mm

52-190-06-04 AI 1

Template

Explanation of icons:

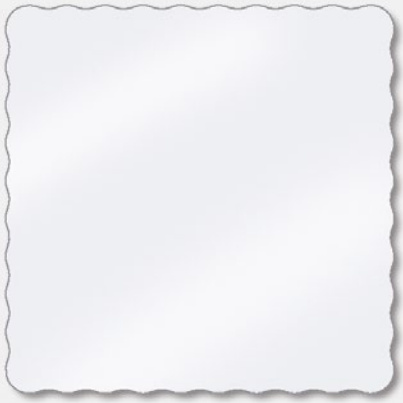
- Resorb xG
- Titanium
- Aluminum
- Packaging unit
- Plate profile
- STERILE R — Sterile packaged implants



1/1

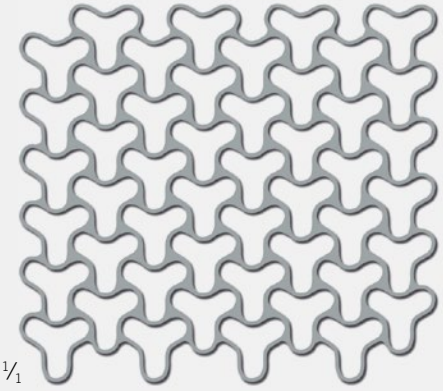
52-806-50-04 xG 1
51 x 51 mm
= 0.6 mm

52-810-50-04 xG 1
51 x 51 mm
= 1.0 mm



1/1

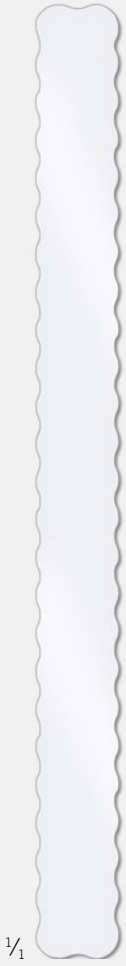
52-810-52-04 xG 1
51 x 51 mm
= 1.0 mm



1/1

52-313-50-04 Ti 1
50 x 50 mm
Template

SonicWeld RxG Implants
New resorbable Polymer



1/1

52-810-14-04 XG 1

11 x 126 mm

=1.0

1/1

52-810-11-04 XG 1

11 x 126 mm

=1.0

1/1

52-849-00-04 XG 1

11 x 246 mm

= 1.0 mm

1/1

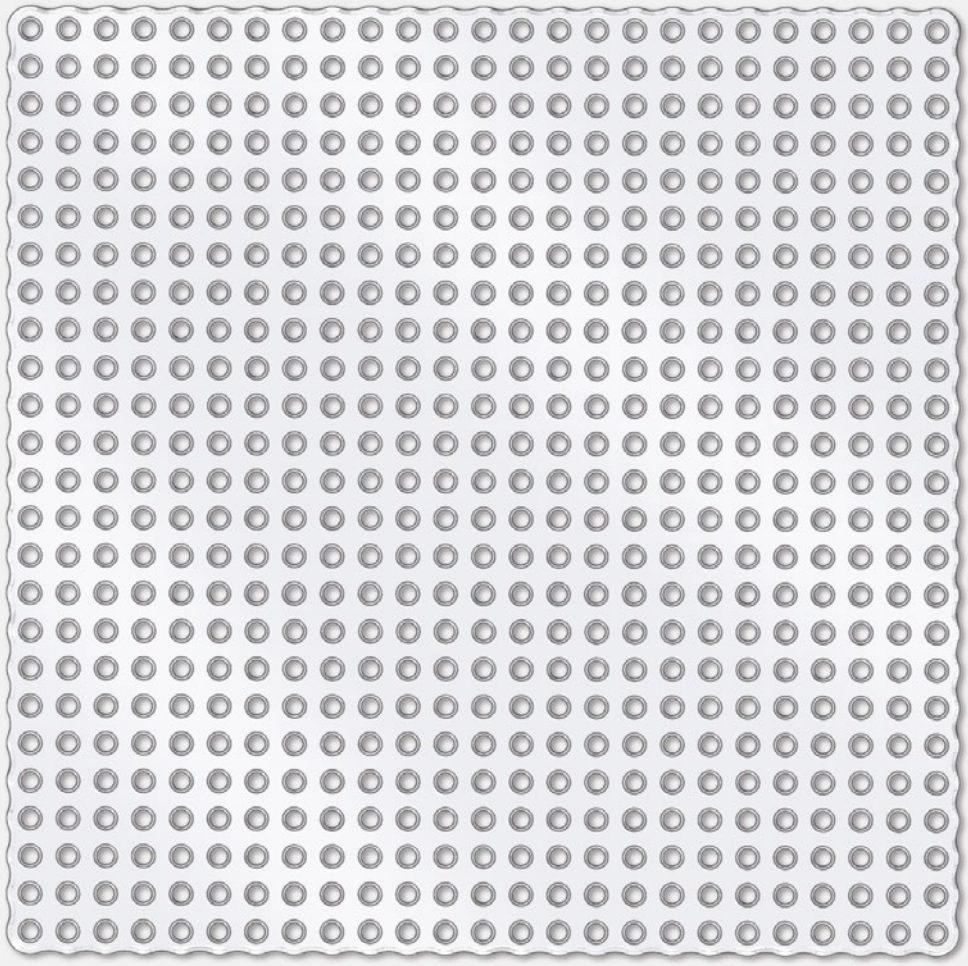
52-851-00-04 XG 1

16 x 251 mm

= 0.8 mm

Explanation of icons:

- Resorb xG
- 1 Packaging unit
- Plate profile
- STERILE R Sterile packaged implants



1/1

52-806-13-04
126 x 126 mm
= 0.6 mm

52-810-13-04
126 x 126 mm
= 1.0 mm

Component Trays

55-969-44-04
Component tray

1 unit(s)

55-969-46-04
Small parts module

1 unit(s)

55-962-45-04
Storage rack
for clip magazines

1 unit(s)

55-891-40-01
80 x 80 x 40 mm
Small-parts basket, fine-mesh

1 unit(s)

Optional Components

55-962-44-04
Bottom part
for twist drills

1 unit(s)

55-962-43-04
Upper part for sonotrodes
and small parts

1 unit(s)

55-963-51-04
Sliding cover

1 unit(s)

Storage Trays and Containers

55-804-15-01

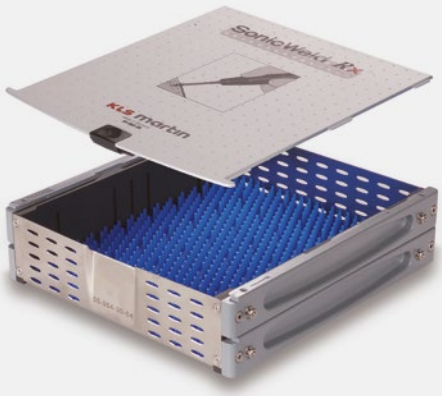
Tray for miniSet container
incl. lid
277 x 172 x 51 mm
(L x W x H)

1 unit(s)

55-861-70-04

microStop® miniSet container
Ext. dimensions 310 x 189 x 90 mm
(L x W x H)
Int. dimensions 283 x 177 x 65 mm
(L x W x H)

1 unit(s)



55-964-30-04

Storage tray
26 x 26 cm

1 unit(s)

55-440-10-04

microStop® container
Ext. Dimensions 272 x 267 x 122 mm
(L x W x H)
Int. Dimensions 267 x 262 x 81 mm
(L x W x H)

1 unit(s)

Storage Options

Option 1

55-804-15-01		Tray for miniSet container incl. lid 277 x 172 x 541 (L x W x H)
55-891-40-01		Small-parts basket, fine-mesh, 80 x 80 x 40 mm
55-969-46-04		Small parts module
55-806-50-04	3x	Separadors, 123 x 9 x 22 mm
55-806-33-04	2x	Shaft holder, 8-10 mm

Option 2

55-969-44-04	**Component tray, consisting of:**
55-962-44-04	Bottom part for twist drills
55-962-43-04	Upper part for sonotrodes and small parts
55-963-51-04	Sliding cover
55-969-42-04	**Storage and processing tray, complete, consisting of:**
55-964-30-04	Storage tray 26 x 26 cm
55-969-93-04	Silicone mat
55-963-38-04	Lid for storage tray

Option 3

55-969-46-04	Small parts module
55-969-42-04	**Storage and processing tray, complete, consisting of:**
55-964-30-04	Storage tray 26 x 26 cm
55-969-93-04	Silicone mat
55-963-38-04	Lid for storage tray

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[1] "BoneWelding"® is a registered Swiss trademark.