



IPS Implants®

Transformation

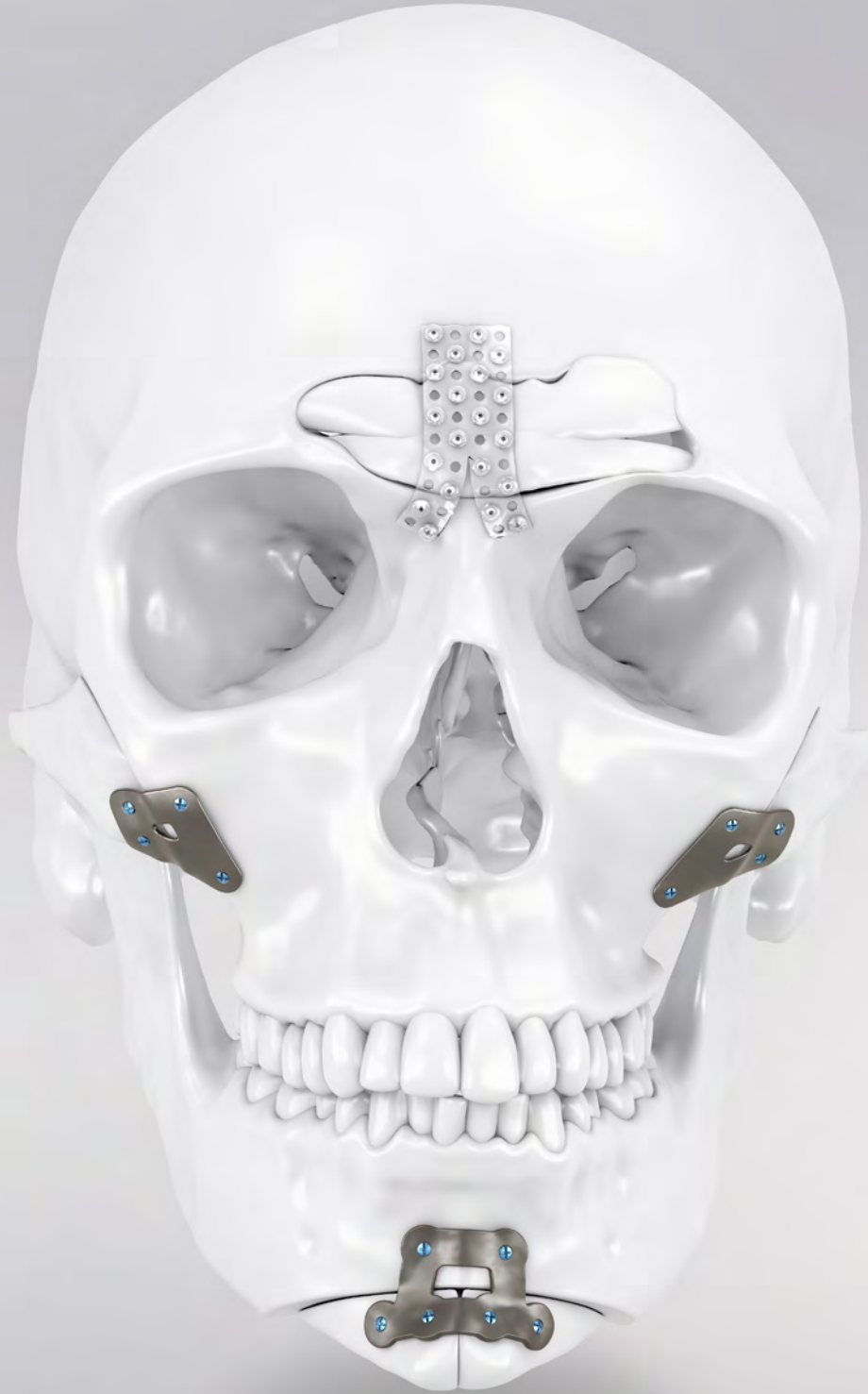




Oral and maxillofacial surgery is our passion! Its further development, together with our customers, is our ambition. Every day we work on developing innovative products and services which meet the highest demands on quality, and which contribute to the wellbeing of the patient.

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IPS® – Individual Patient Solutions

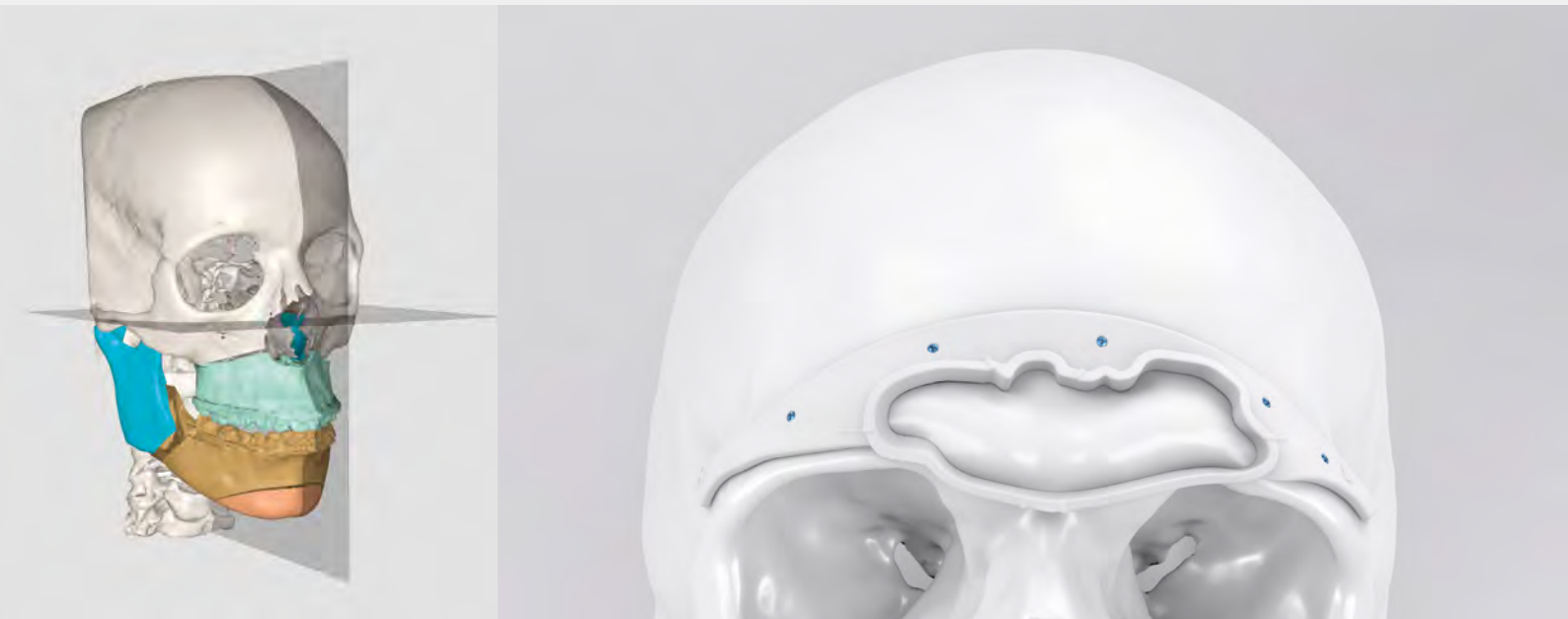
IPS Implants® Transformation

In daily interactions with the public, the face is the main visible feature determining gender. For many individuals who undergo gender-affirming surgery, facial transformation surgery is therefore an important step on their path to gender confirmation.

In facial transformation surgery, various surgical procedures are combined to reduce typical male facial features and thus give the face a more feminine appearance (facial feminization surgery) or to enhance typical male facial features to make them appear more prominent and masculine (facial masculinization surgery).

With IPS Implants® Transformation, we offer a selection of high-quality, individualized guides and implants that enable precise bone modifications with reproducible results for facial gender-affirming surgery.

Feature, Function and Benefit

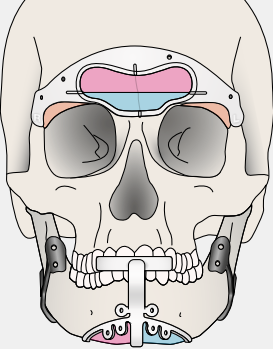
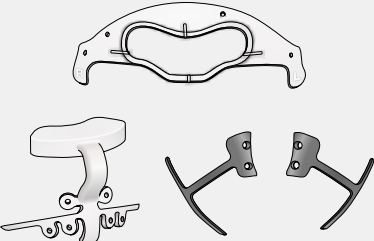
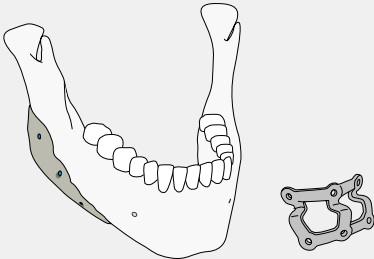
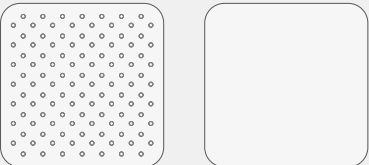


IPS® has proven to be very advantageous in various craniomaxillofacial disciplines such as reconstructive and orthognathic surgery. Recent developments have shown that IPS® can also help to set new standards in facial gender-affirming surgery.

Our portfolio includes 3D-printed cutting, marking and drill guides that facilitate rapid and precise modifications of gender-specific facial characteristics. Custom-made implants, onlays and anatomical models from various materials are available to address the individual anatomical situation of every patient as specifically as possible. Resorbable implants from our SonicWeld Rx® system work as a perfect supplement for fixating the anterior table after frontal sinus setback eliminating the need for a second surgery.

Numerous benefits such as reduced complication rates, improved esthetic and functional results, shortened surgical time and faster rehabilitation highlight the possible impact of IPS® for facial transformation surgeries.

IPS Implants® – Transformation

	Feature and Function	Benefit
<p>Planning process</p> 	<ul style="list-style-type: none"> ■ Planning, fabrication, shipping from a single source ■ Range of options for planning <ul style="list-style-type: none"> ■ Planning and simulation of the postoperative situation ■ Heat map of bone thickness ■ Planning of the screw holes in case implants are used 	<ul style="list-style-type: none"> ■ Complete service with the requirement for coordinating multiple services eliminated ■ High degree of safety in planning
<p>Marking, cutting and drill guides</p> 	<ul style="list-style-type: none"> ■ Transfer of virtual planning to the OR ■ Integrated steel sleeves ■ Made of polyamide or additive manufactured titanium alloy 	<ul style="list-style-type: none"> ■ Maximum precision and safety through accurate determination of the cutting lines, positions of implants and screw holes ■ No need for additional drill guides ■ Variability in planning and high biocompatibility ■ Variability in design such as bone-based or occlusal-based guides
<p>Implants and onlays</p> 	<ul style="list-style-type: none"> ■ Titanium fixation plates, e.g. for genioplasty ■ Onlays in different materials for maxillary and mandibular augmentation: marPOR®, PEEK and Titanium 	<ul style="list-style-type: none"> ■ Accurate and precise osteotomy fixation ■ High flexibility in selection ■ marPOR® implants made of medical grade polyethylene promote bone ingrowth and vascularization
<p>Frontal sinus fixation with SonicWeld Rx®</p> 	<ul style="list-style-type: none"> ■ Perfect complement: resorbable implants from our SonicWeld Rx® system for frontal sinus setback fixation 	<ul style="list-style-type: none"> ■ System provides extremely stable fixation and completely eliminates the need for a removal operation ■ Method is clinically certified, validated and patient-friendly

Step by Step to Optimal Treatment

Realization Options

- Frontal sinus setback
- Orbital rim contouring
- Zygomatic reduction
- Mandible angle reduction
- Chin reduction and fixation
- Augmentation of zygomatic bone (malar grafting),
mandible angles and chin



Surgical Technique of Selected Realization Options

Frontal Sinus Setback and Orbital Rim Contouring

Dr. James Bradley

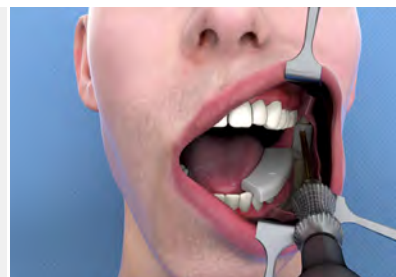
Pages 10-13



Mandible Angle Reduction

Dr. James Bradley

Pages 14-15

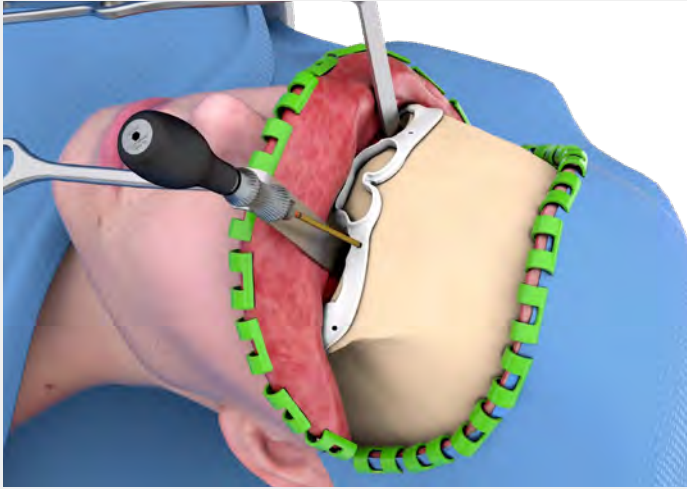


Chin Reduction and Fixation

Dr. James Bradley

Pages 16-17

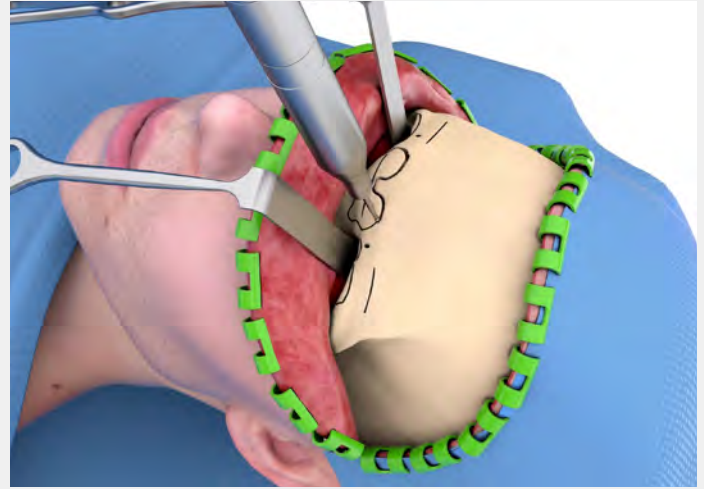




Insertion of the guide

After completing a coronal incision, the frontal sinus and supraorbital guide is fixated with maxDrive® screws.

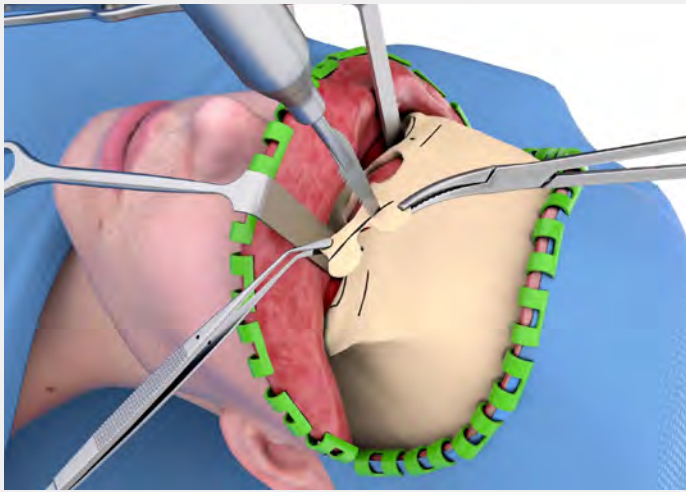
The center of the guide outlines the anterior wall of the frontal sinus and the septum based on the pre-operative digital planning. A horizontal mark identifies the most projecting part of the convex surface. Furthermore, the guide identifies the areas of orbital rim resection.



Marking of the cutting lines and performing the osteotomy

The osteotomy line for the frontal sinus setback and the burring lines for the orbital rim contouring are defined using the cutting mark. Afterwards, the screws can be loosened again, and the drill guide is removed.

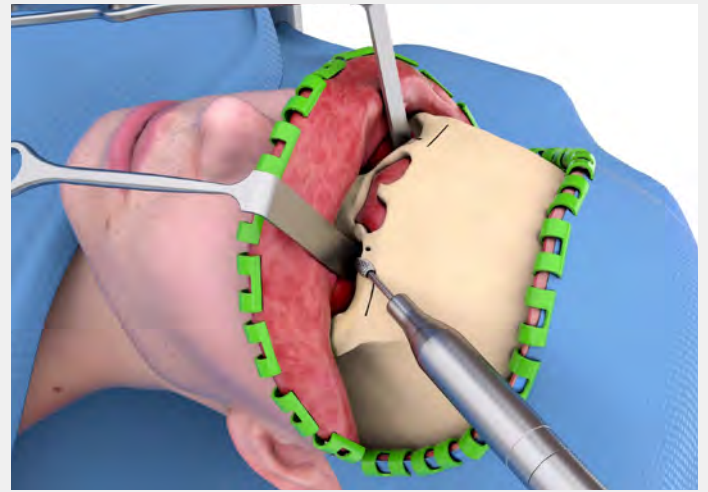
Osteotomy is now performed to mobilize the anterior wall of the frontal sinus. A thin osteotome is directed along the septal mark to complete the removal of the bone.



Cutting the frontal sinus

Once the anterior wall of the frontal sinus has been osteotomized, a horizontal cut across the frontal sinus is made to eliminate the projecting part of the bone.

Burring is performed to finalize the contouring.



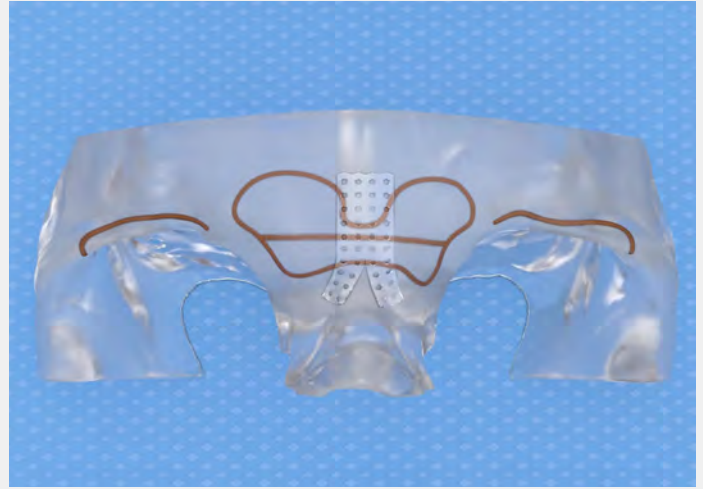
Orbital rim contouring

The osteotomy of the orbital rims is completed using a reciprocating saw. Again, burring is performed along the predefined lines to finalize the contouring.



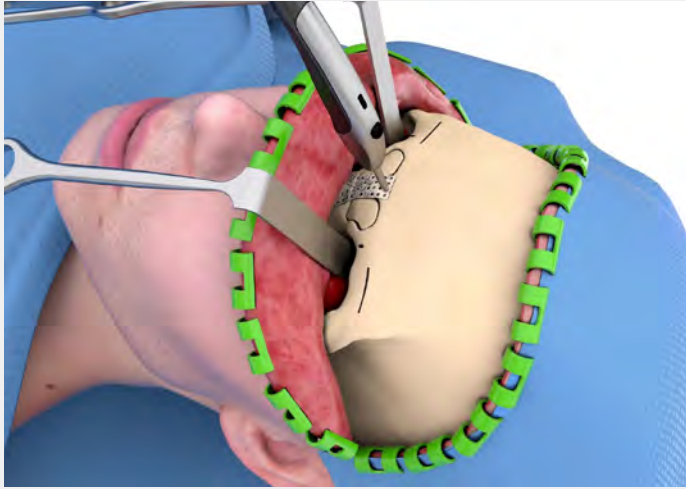
Frontal Sinus Fixation with SonicWeld Rx®

A water bath is used to heat the resorbable implant for anatomic manipulation.



Frontal Sinus Fixation with SonicWeld Rx®

A custom-made skull model of the desired post-op situation is used to adapt the implant to the anatomical situation of the patient and to create a flat forehead.



Frontal Sinus Fixation with SonicWeld Rx®

The bone pieces of the anterior wall of the frontal sinus are secured to the resorbable implant and fixated back on the forehead of the patient to cover the frontal sinus.

The type and extent of postoperative treatment and rehabilitation measures are to be coordinated with the patient by the attending user.



Insertion of the guide

A custom-made gonial angle guide is used to cut the mandibular angle and narrow the lower face. After completing access and stripping masseteric attachments, the guide is placed and fixated to the anterior ramus.

Gonial angle guides can be provided bone-based or occlusal-based made of polyamide or titanium. Titanium guides can be used as cutting guides to directly perform the osteotomy.



Marking of the cutting line and performing the osteotomy

The osteotomy line is defined using the cutting mark. Afterwards the guide is removed, and the osteotomy is completed using an oscillating saw.



Contouring of the mandible angles

The bone piece is removed. Contour burring is performed to finalize the lateral mandibular contouring.

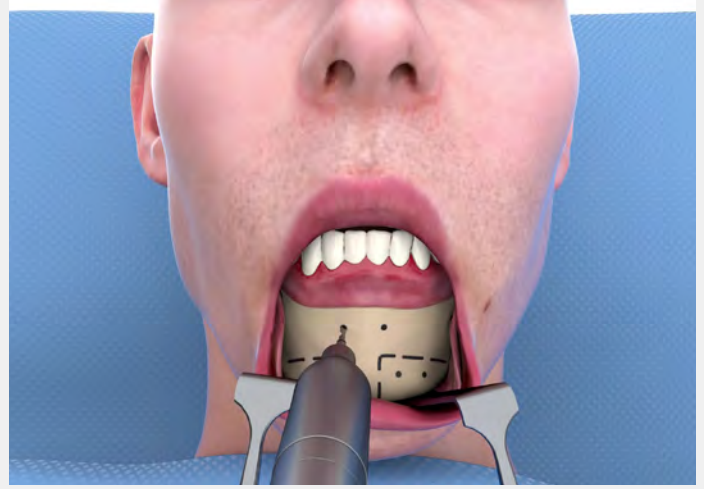


Insertion of the guide and marking of the cutting lines

After degloving the anterior chin, the drill and marking guide is placed and fixated.

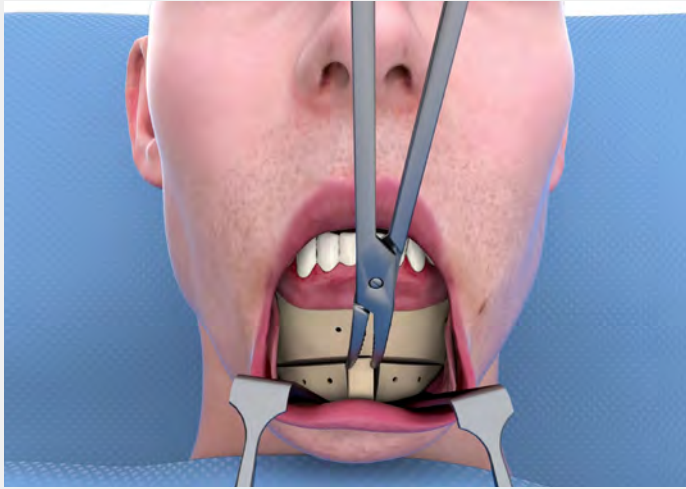
The center of the chin bone and a horizontal osteotomy line is marked. The horizontal osteotomy is located as planned well below the inferior alveolar/mental nerve.

The guide also has predictive holes for a custom-made plate.



Drilling and performing the osteotomy

The guide is removed and the holes for the custom-made plate are drilled.



Removing the bone piece

A reciprocating saw is used to cut the central bone. Afterwards, the center of the chin bone is removed.



Fixation of the implant

A custom-made plate is used for centralizing the two halves of genioplasty segment in an advanced position.

The degree of advancement is based on surgeon preference at planning.

Guides



Frontal sinus guide for frontal sinus setback, orbital rim resection and forehead contouring
Made of polyamide



Zygomatic reduction guides
Made of additively manufactured titanium



Gonial angle and chin guides, occlusal-based
Made of polyamide



Gonial angle guides, bone-based
Made of additively manufactured titanium

All guides shown are offered in polyamide or titanium. All guides can be provided bone-based or occlusal-based.

Implants and Onlays



Frontal sinus setback with SonicWeld Rx®
Fixation with resorbable implant



Zygomatic reduction plate and genio plate
Made of additively manufactured titanium



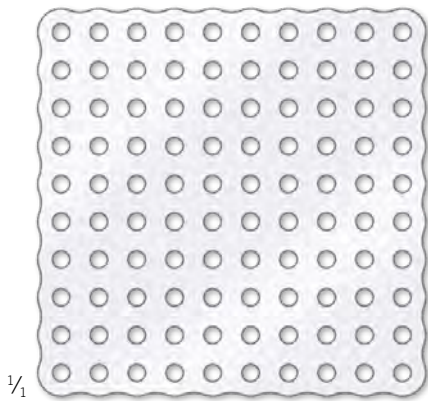
Maxillary augmentation
MarPOR® onlays





Mandibular augmentation
PEEK onlays


SonicWeld Rx® Resorbable Implants for Frontal Sinus Fixation



Resorb x




52-303-50-04  

51 x 51 mm

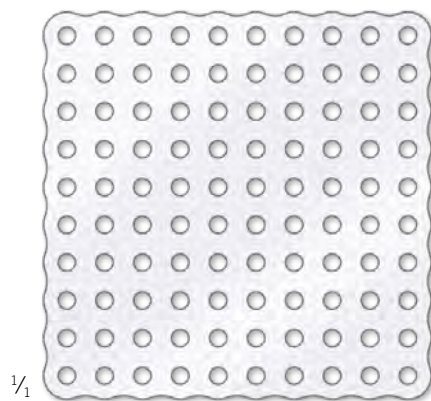
 = 0.3 mm



52-306-50-04  

51 x 51 mm


 = 0.6 mm

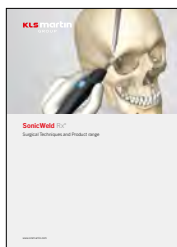
Resorb xG



52-806-50-04  

51 x 51 mm





 = 0.6 mm



For further information please refer to our separate product brochure "SonicWeld Rx® – Surgical Techniques and Product Range"
















Explanation of icons:



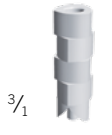


-  Resorb x
-  Resorb xG
-  Packaging unit
-  Plate profile

STERILE IR Sterile packaged implants

















SonicPins Rx® 1.6 mm

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

Micro SonicPins Rx® 1.6 mm

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

SonicPins Rx® 2.1 mm

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

Micro SonicPins Rx® 2.1 mm

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

Osteosynthesis Accessories



In addition to the IPS Implants® or the cutting, marking and drill guides, the following osteosynthesis accessories in sterile condition are required for the surgical treatment:

- A sufficient number of KLS Martin osteosynthesis screws in the planned diameters
- A screwdriver to fit the planned osteosynthesis screws
- A pilot drill to fit the planned osteosynthesis screws
- Ø 2.0-mm osteosynthesis screws (alternatively Ø 1.5-mm screws) for fixing the drill, marking and saw guides with matching pilot drill and screwdriver

Scientific Literature

3D-Printed Custom Cutting Guides Facilitate Frontal Cranioplasty
in Gender Affirmation Surgery:

https://journals.lww.com/jcraniofacialsurgery/Abstract/2021/10000/3D_Printed_Custom_Cutting_Guides_Facilitate.106.aspx



Osseous Transformation with Facial Feminization Surgery:
Improved Anatomical Accuracy with Virtual Planning:

https://journals.lww.com/plasreconsurg/Abstract/2019/11000/Osseous_Transformation_with_Facial_Feminization.31.aspx



Computer-aided Planning and Execution in Facial Gender Surgery:
Approaches, Concepts, and Implementation:

https://journals.lww.com/prsgo/Fulltext/2022/05000/Computer_aided_Planning_and_Execution_in_Facial.29.aspx



Facial Feminization Surgery:

A Systematic Review of Perioperative Surgical Planning and Outcomes:

https://journals.lww.com/prsgo/Fulltext/2022/03000/Facial_Feminization_Surgery_A_Systematic_Review.28.aspx



Facial Recognition Neural Networks Confirm Success of Facial Feminization Surgery:

https://journals.lww.com/plasreconsurg/Abstract/2020/01000/Facial_Recognition_Neural_Networks_Confirm_Success.42.aspx



Simplifying Facial Feminization Surgery Using Virtual Modeling on the Female Skull:

https://journals.lww.com/prsgo/Fulltext/2020/03000/Simplifying_Facial_Feminization_Surgery_Using.37.aspx



KLS Martin Group

KLS Martin Australia Pty Ltd.

Sydney · Australia
Tel. +61 2 9439 5316
australia@klsmartin.com

KLS Martin do Brasil Ltda.

São Paulo · Brazil
Tel. +55 11 3554 2299
brazil@klsmartin.com

KLS Martin Medical (Shanghai) International Trading Co., Ltd

Shanghai · China
Tel. +86 21 5820 6251
info@klsmartin.com

KLS Martin India Pvt Ltd.

Chennai · India
Tel. +91 44 66 442 300
india@klsmartin.com

KLS Martin Italia S.r.l.

Milan · Italy
Tel. +39 039 605 67 31
info@klsmartin.com

KLS Martin Japan K.K.

Tokyo · Japan
Tel. +81 3 3814 1431
info@klsmartin.com

KLS Martin SE Asia Sdn. Bhd.

Penang · Malaysia
Tel. +604 261 7060
malaysia@klsmartin.com

KLS Martin de México, S.A. de C.V.

Mexico City · Mexico
Tel. +52 55 7572 0944
mexico@klsmartin.com

KLS Martin Nederland B.V.

Huizen · Netherlands
Tel. +31 35 523 45 38
infonl@klsmartin.com

KLS Martin SE & Co. KG

Moscow · Russia
Tel. +7 499 792 76 19
russia@klsmartin.com

KLS Martin Taiwan Ltd.

Taipei · Taiwan
Tel. +886 2 2325 3169
taiwan@klsmartin.com

KLS Martin SE & Co. KG

Dubai · United Arab Emirates
Tel. +971 4 454 16 55
middleeast@klsmartin.com

KLS Martin UK Ltd.

Reading · United Kingdom
Tel. +44 118 467 1500
info.uk@klsmartin.com

KLS Martin LP

Jacksonville · Florida, USA
Tel. +1 904 641 77 46
usa@klsmartin.com

KLS Martin SE Asia Sdn. Bhd.

Hanoi · Vietnam
Tel. +49 7461 706-0
info@klsmartin.com



KLS Martin SE & Co. KG

A company of the KLS Martin Group

KLS Martin Platz 1 · 78532 Tuttlingen · Germany
PO Box 60 · 78501 Tuttlingen · Germany
Tel. +49 7461 706-0 · Fax +49 7461 706-193
info@klsmartin.com · www.klsmartin.com