



RPeX (Rapid Palatal Expander)

Treatment of transverse hypoplasia of the maxilla



Oral and maxillofacial surgery is our passion! It is our ambition to advance these jointly with our customers. 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.

RPeX (rapid palatal expander) Treatment of transverse maxillary hypoplasia

Transversal maxillary hypoplasia occurs in adolescents and adults, both in syndromic as well as non-syndromic patients, including those with a cleft palate. This malformation can cause a lack of space in the dental arch, crowding of teeth, posterior crossbites, and aesthetically disturbing buccal corridors.

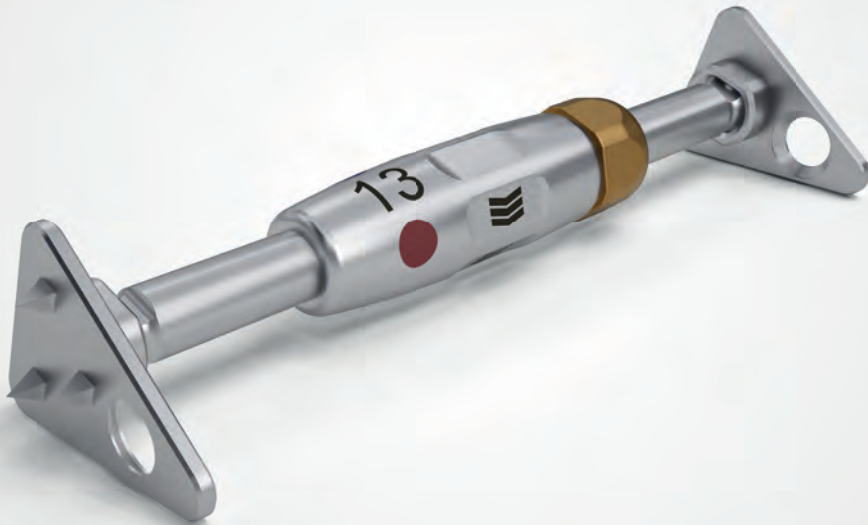
Surgically assisted rapid palatal expansion (SARPE) has proven to be an effective method that combines orthodontic and surgical approaches. Not only does it create space for optimal tooth alignment, but it also helps to reduce unsightly buccal corridors that become visible when smiling.

The KLS Martin RPeX is a next-generation transpalatal distractor designed for the symmetrical expansion of the midface. It restores the natural anatomy and enables confident, harmonious results - both in patients still growing as well as in adults.

"Building bridges to brighter futures"

(Prof. Dr. Nasser Nadjmi - clinical partner for design and development)

Feature, function and benefit



The bone-supported RPeX enables precise jaw expansion without affecting the teeth. Owing to the direct application of force to the bone, undesirable tooth movements such as tilting and extrusion are avoided.

Its minimalistic design impresses with smooth surfaces, closed threads, and components that are completely concealed beneath the mucosa. An integrated stop mechanism provides additional safety and stability during treatment.

The RPeX is available as a set containing the expander itself, two maxDrive® screws, as well as the activating wrench. Fixation is achieved by means of flexible bone plates and the screws included in the set. The RPeX is available in sterile and non-sterile versions and is offered in two variants:

- In the fixed version, the bone plates are firmly connected to the distractor.
- The modular version features loose bone plates, which allow uncomplicated changing of the distractor body.

RPeX (rapid palatal expander)



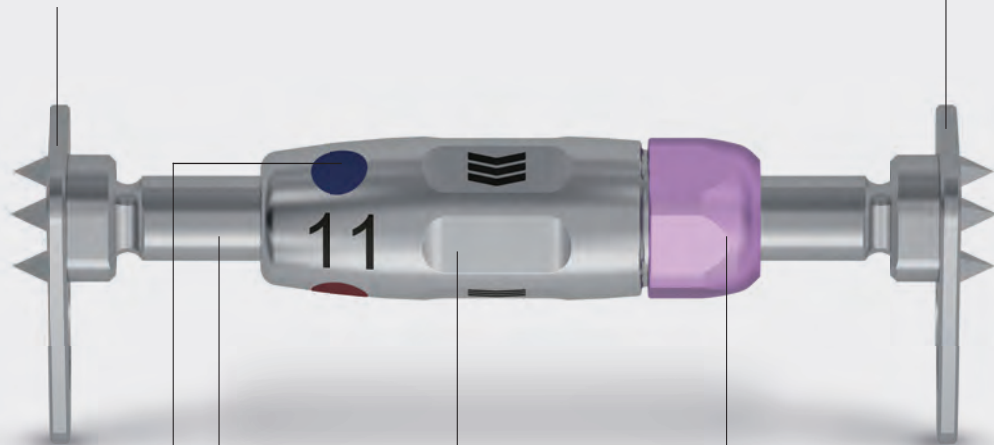
Flexible bone plate

- Easy placement of the distractor
- Available in two versions: fixed or modular



Small spikes and thin bone plate

- Placement of bone plates completely beneath the mucosa



Color marking

- Distraction length: 0.33 mm per marking increment, 1 mm per complete revolution

Smooth surface and closed thread

- Comfortable to wear
- Stop mechanism to prevent over-tightening and loosening of the components

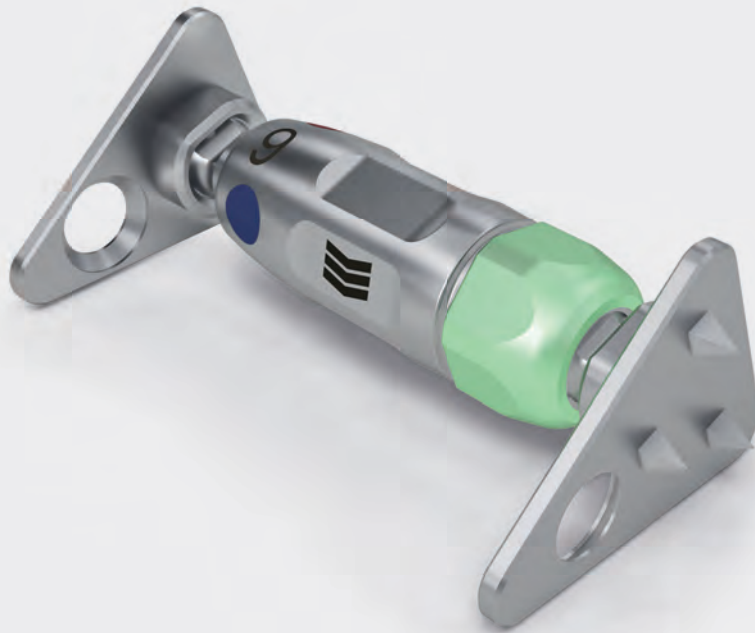
Locking nut for fixation

- Prevents unintentional reverse rotation of the distractor

Step by step to optimal treatment

Fields of use

The RPeX is used to treat unilateral or bilateral transverse maxillary hypoplasia in both syndromic and non-syndromic patients. In addition, it supports the correction of anterior tooth crowding as well as the expansion of the buccal corridors.



Surgical technique

Transversal maxillary hypoplasia

with the KLS Martin RPeX
Prof. Dr. Nasser Nadjmi

pages 8 – 11





1. Intraoperative approach

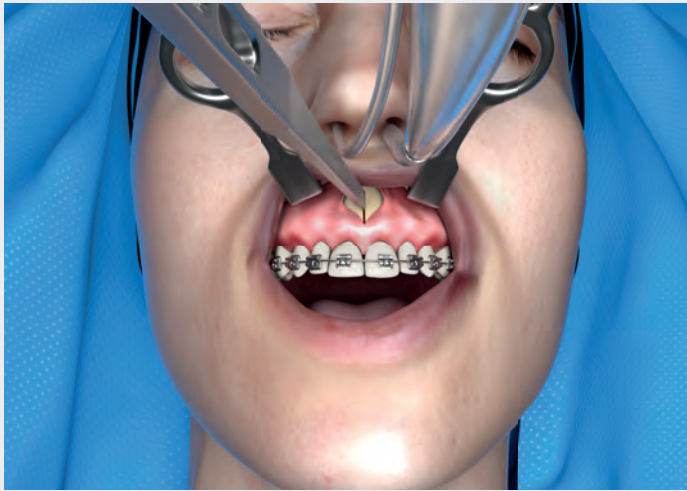
A buccal-vestibular incision is made in the alveolar mucosa approximately 10 mm apical to the mucogingival margin. This incision extends from the first molar to the canine tooth and is mirrored symmetrically on the opposite side. In addition, a vertical midline incision is made through the upper labial frenulum between the central incisors to expose the anterior midline maxilla.

The incision is then extended down to the periosteum. A muco-periosteal preparation is performed to expose the maxillary bone, starting posteriorly at the pterygoid region and extending anteriorly to the lateral edge of the piriform aperture.



2. Osteotomy Le Fort 1

A horizontal osteotomy is performed along the anterior and lateral walls of the maxilla, and extends from the pterygoid region to the piriform aperture. The incision runs approximately parallel to the occlusion plane and is made at a minimum distance of 4 to 5 mm above the roots of the maxillary teeth.

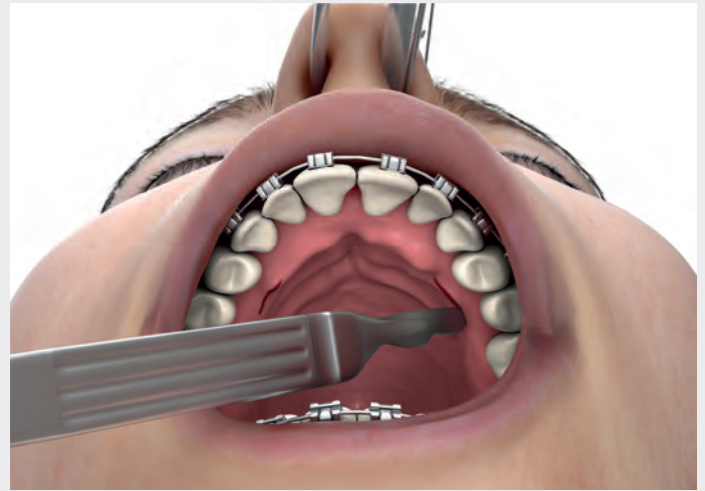


3. Medial osteotomy

The sagittal suture is exposed via a vertical midline incision. Using a sharp 5 mm wide chisel, an osteotomy is carefully performed along the mid-sagittal suture. Next, a 10 mm chisel is used to open the suture and mobilize the maxillary segments.

In cases where parallel expansion is necessary – especially in older patients – a 7 mm curved osteotome is used to detach the pterygomaxillary junction.

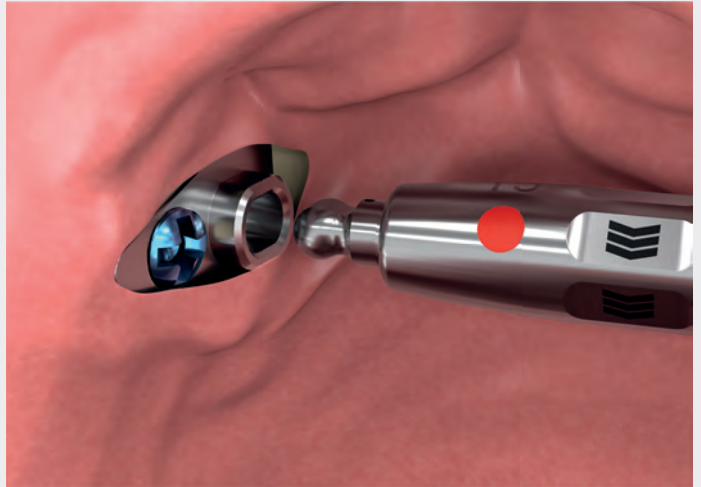
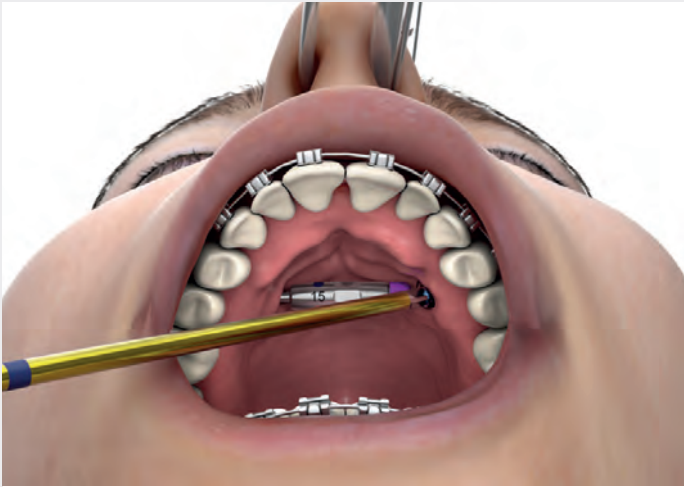
These successive steps enable controlled expansion of the maxilla along the median palatal suture.



4. Palatal incisions

After administering a local anesthetic, incisions approximately 1 cm long are made on both sides of the palatal gingiva above the roots of the second premolars (3/2 extension canine/first molar) or the first molars (parallel expansion if the pterygomaxillary junction is also detached).

Optionally, a small perpendicular relief incision can be performed.



5. Placement of the distractor

A measuring template is used to select the appropriate size of the distractor. The type of placement depends on the selected distractor variant.

Fixed variant:

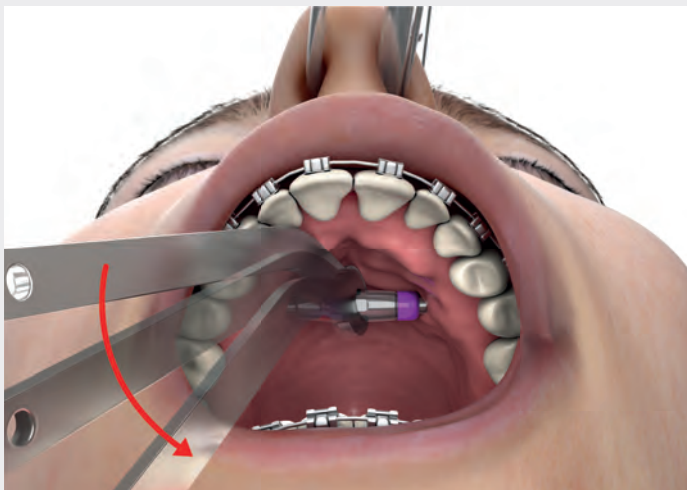
The distractor is moved into the correct position using forceps. The bone plates rest subperiosteally on the bone surface beneath the mucoperiosteal flaps and are aligned parallel to the occlusal plane. The spikes are used for initial fixation by carefully pressing them into the bone. The distractor is then fixed to the bone on both sides using screws.

The plate with the colored locking nut is attached on the left side of the patient, and the opposite plate to the right side.

Modular variant:

When using the modular RPeX, the bone plates are first placed separately from the distractor body subperiosteally on the bone surface under the mucoperiosteal flaps parallel to the occlusal plane. For this purpose, the plates are carefully pressed in with the aid of the spikes and then fixated with screws.

Then, the distractor body is inserted into the fixed bone plates on both sides. It is important here to ensure that the colored locking nut is positioned on the left side of the patient.



6. Trial activation

During the surgical procedure, the distractor is activated on a trial basis to ensure correct function and mobility. After successful verification, the distractor is deactivated and remains in position.

Note:

Do not activate the distractor before the osteotomies have been performed.

7. Latency period

Activation of the distractor usually commences 5 - 7 days after placement, depending on the surgeon's treatment plan.

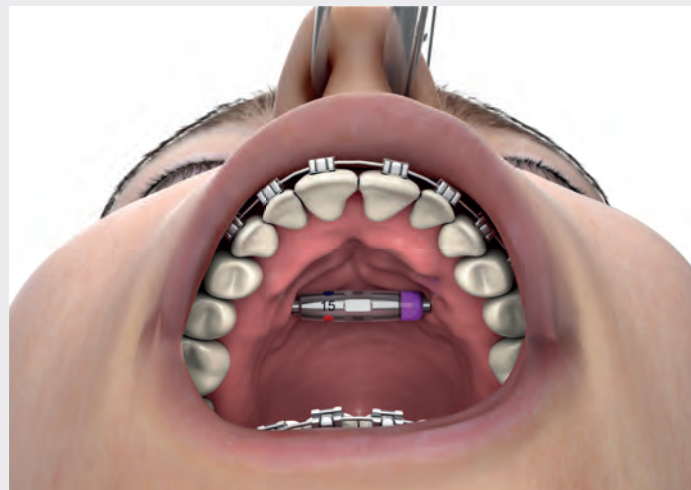
8. Distraction period

The distractor is activated using the patient activating wrench (article no. 51-565-90-07 or article no. 51-565-95-07). A rotation of 120° to the next color marking corresponds to a distraction distance of 0.33 mm. It is recommended to perform a rotation of 120° daily, which corresponds to a distraction distance of 0.33 mm per day.

The colored markings on the distraction device facilitate the precise control of activation.

Note:

To prevent unwanted movement of the distractor during the latency or distraction period, the locking nut is tightened with the activating wrench.



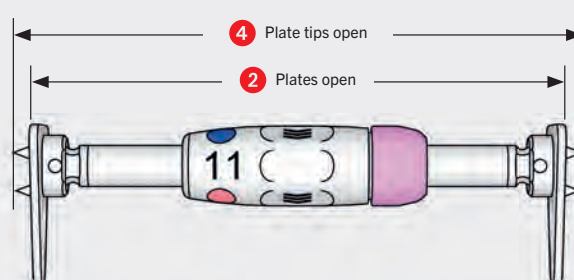
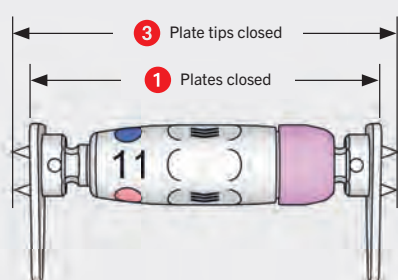
9. Consolidation period

A consolidation period of 4 to 6 months is recommended.

Orthodontic tooth movement can commence at the earliest 6 to 8 weeks after completion of the distraction period.

Rapid palatal expander

RPeX fixed



RPeX (fixed variant)

Article number set	Designation	Illustration scale 1:1	Dimensions (mm)			
			1	2	3	4
51-568-07-09	RPeX, 7 mm*		17	24	19	26
51-568-07-71	RPeX, 7 mm, sterile*					
	Sizer for RPeX 7 mm (optional, art. no. 51-571-07-09)					
51-568-09-09	RPeX, 9 mm*		19	28	21	30
51-568-09-71	RPeX, 9 mm, sterile*					
	Sizer for RPeX, 9 mm (optional, art. no. 51-571-09-09)					
51-568-11-09	RPeX, 11 mm*		21	32	23	34
51-568-11-71	RPeX, 11 mm, sterile*					
	Sizer for RPeX, 11 mm, (optional, art. no. 51-571-11-09)					
51-568-13-09	RPeX, 13 mm*		23	36	25	38
51-568-13-71	RPeX, 13 mm, sterile*					
	Sizer for RPeX, 13 mm (optional, art. no. 51-571-13-09)					

* The fixed RPeX is available exclusively as part of the set. The additionally included components are listed on page 16.

Explanation of icons

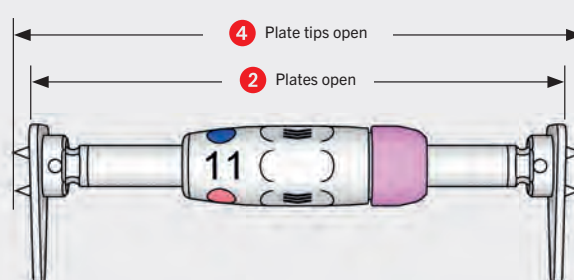
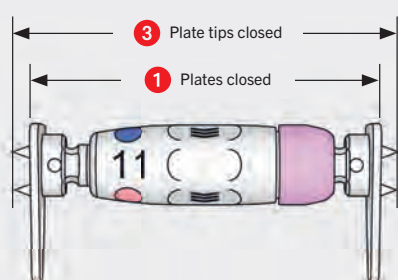
STERILE R Sterile packaged implants



Article number set	Designation	Illustration scale 1:1	Dimensions (mm)			
			1	2	3	4
51-568-15-09	RPeX, 15 mm*		25	40	27	42
51-568-15-71	RPeX, 15 mm, sterile*					
	Sizer for RPeX, 15 mm (optional, art. no. 51-571-15-09)					
51-568-17-09	RPeX, 17 mm*		27	44	29	46
51-568-17-71	RPeX, 17 mm, sterile*					
	Sizer for RPeX, 17 mm (optional, art. no. 51-571-17-09)					
51-568-25-09	RPeX, 25 mm*		35	60	37	62
51-568-25-71	RPeX, 25 mm, sterile*					
	Sizer for RPeX, 25 mm (optional, art. no. 51-571-25-09)					

* The fixed RPeX is available exclusively as part of the set. The additionally included components are listed on page 16.

Rapid palatal expander RPeX modular



RPeX (modular variant)

Article number set	Article number distractor	Designation	Illustration scale 1:1	Dimensions (mm)			
				1	2	3	4
51-566-07-09	51-569-07-09	RPeX, 7 mm*		17	24	19	26
51-566-07-71	51-569-07-71	RPeX, 7 mm, sterile*					
		Sizer for RPeX 7 mm (optional, art. no. 51-571-07-09)					
51-566-09-09	51-569-09-09	RPeX, 9 mm*		19	28	21	30
51-566-09-71	51-569-09-71	RPeX, 9 mm, sterile*					
		Sizer for RPeX 9 mm (optional, art. no. 51-571-09-09)					
51-566-11-09	51-569-11-09	RPeX, 11 mm*		21	32	23	34
51-566-11-71	51-569-11-71	RPeX, 11 mm, sterile*					
		Sizer for RPeX 11 mm (optional, art. no. 51-571-11-09)					
51-566-13-09	51-569-13-09	RPeX, 13 mm*		23	36	25	38
51-566-13-71	51-569-13-71	RPeX, 13 mm, sterile*					
		Sizer for RPeX 13 mm (optional, art. no. 51-571-13-09)					

* The modular RPeX is available either as a set (see page 16 for additional components) or individually (distractor incl. bone plates).

Explanation of icons

STERILE **R** Sterile packaged implants



Article number set	Article number distractor	Designation	Illustration scale 1:1	Dimensions (mm)			
				1	2	3	4
51-566-15-09	51-569-15-09	RPeX, 15 mm*		25	40	27	42
51-566-15-71	51-569-15-71	RPeX, 15 mm, sterile*					
		Sizer for RPeX 15 mm (optional, art. no. 51-571-15-09)					
51-566-17-09	51-569-17-09	RPeX, 17 mm*		27	44	29	46
51-566-17-71	51-569-17-71	RPeX, 17 mm, sterile*					
		Sizer for RPeX 17 mm (optional, art. no. 51-571-17-09)					
51-566-25-09	51-569-25-09	RPeX, 25 mm*		35	60	37	62
51-566-25-71	51-569-25-71	RPeX, 25 mm, sterile*					
		Sizer for RPeX 25 mm (optional, art. no. 51-571-25-09)					

* The modular RPeX is available either as a set (see page 16 for additional components) or individually (distractor incl. bone plates).

Rapid palatal expander RPeX system

Additional set components

The following components are included in the RPeX set and are supplied as sterile or non-sterile versions, depending on the set version.

The distractors themselves are illustrated on pages 12–15.

Optional storage

Information on an optional storage system can be found in the brochure L1® Customized | customer-specific storage system



2 x 25-879-07-71   
maxDrive®-screw drill-free,
2.0 x 7 mm, sterile



51-565-90-07  
Activating wrench





Explanation of icons

- Ti** Titanium
- Ti** Titanium alloy
- St** Steel
- Sic** Silicone
-  maxDrive®
- 1**  Packaging unit

STERILE IR Sterile packaged implants

Optional accessories



51-565-95-07  **St**
Activating wrench,
flexible



25-407-03-04  **St** **Sic**
Screwdriver handle,
round



25-407-04-04  **St** **Sic**
Screwdriver handle,
flat



25-486-97-07  **St**
Screwdriver blade,
for screws with Ø 2.0/2.3 mm

CMF surgery

SonicWeld Rx®

Resorbable implants for use in craniomaxillofacial osteosynthesis

- Resorb x®
- Resorb xG

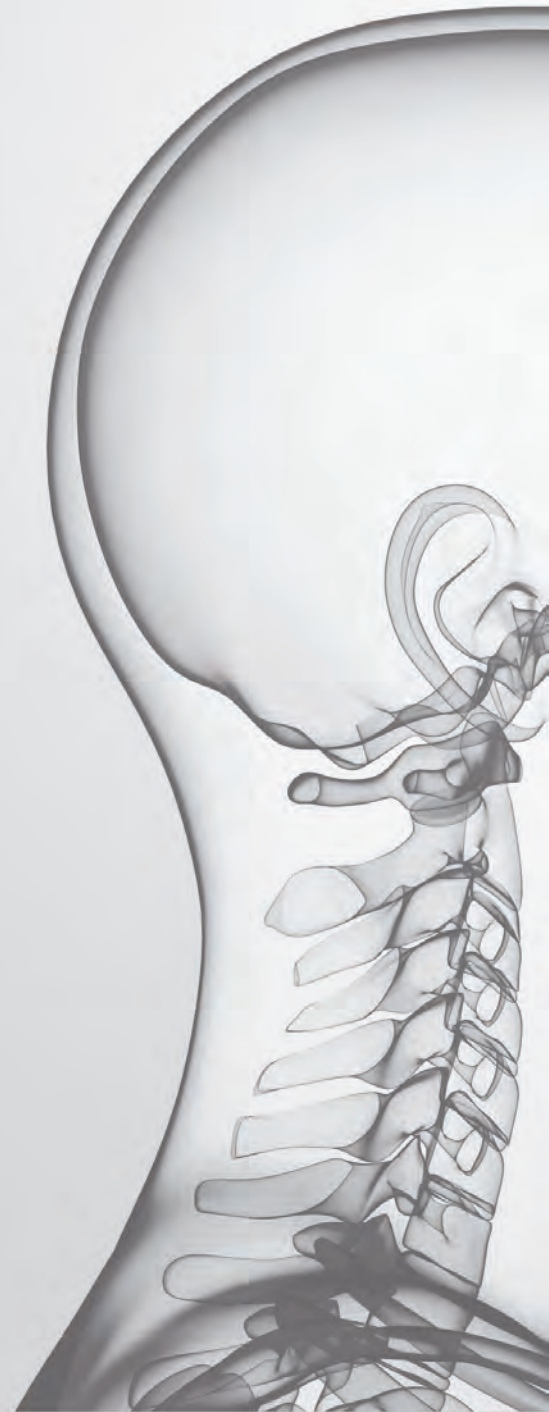


It is the face which makes humans unique and unmistakable –
“There is nothing that more closely reflects the life of an individual than the human face*.”

Our objective is to simplify craniomaxillofacial surgery with specially designed implant systems and instruments that ensure optimum satisfaction for both surgeon and patient. Together with renowned users we translate new ideas into innovative products and are continuously enhancing them.

Our range of products includes everything necessary for state-of-the-art craniomaxillofacial surgery. In doing so, we not only set standards, but also go further to develop solutions that are specifically tailored to individual patients by leveraging the technologies available to us.

KLS Martin – your competent and reliable partner for both everyday challenges and special challenges.



* © Kurt Haberstich (*1948)

Distraction

Distractors for the treatment of malformations in the areas of the

- Cranium
- Midface
- Mandible



Individual patient solutions

Customized solutions for use in craniomaxillofacial surgery

- IPS Implants®
- IPS CaseDesigner®
- IPS Gate®



LevelOne fixation

Titanium implants for use in craniomaxillofacial osteosynthesis

- Trauma
- Reconstruction
- Orthognathic surgery



App for CMF products

All important information about the CMF portfolio at a glance:

<https://cmf.klsmartin.com/de/>

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