



Alveolar Ridge Distraction

Product Overview

Material

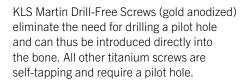


KLS Martin twist drills are made of stainless steel 1.4034.



KLS Martin distractors and titanium screws are made of titanium alloy (Ti-6AI-4V) according to ISO 5832-3, DIN 17851 and ASTM F136.







TC GOLD

"TC GOLD" indicates instruments with hard metal inserts.



Describes the quantity/unit per package.



25-486-97-07 **3.0**/2.3 mm

Screwdriv and blade		¥ ₄			
		25-480-99-07	25-402-99-07	25-407-03-04	25-406-99-07
25-492-98-07	① 1.0 mm	х			
25-428-98-07	① 1.0 mm		x		
25-431-98-07	① 1.5 mm	x			
25-430-98-07	① 1.5 mm		х		
25-489-97-07	⊕ 1.5 mm		х		
25-438-97-07	⊕ 1.5 mm			х	Х
25-434-98-07	① 2.0/2.3 mm		x		
25-540-98-07	① 2.0/2.3 mm				х
25-491-97-07	2.0 /2.3 mm		X		

Bone graf	t screwdrivers
25-422-10-07	© 1.0 mm
25-422-15-07	© 1.5 mm
25-424-15-07	⊕ 1.5 mm
25-422-20-07	© 2.0 mm/2.3 mm
25-424-20-07	⊕ 2.0 mm/2.3 mm



Distraction in oral and cranio-maxillofacial surgery

The nature of the deficiency may present an obstacle to ideal implant positioning by compromising aesthetic and prosthetic needs.

Based on Ilizarov's technique and the pioneering work of Hidding and Zöller, vertical distraction of the alveolar ridge by especially designed distraction devices has become a state-of-the-art method for the successful treatment of such bone defects. It is considered a highly valuable technique in cases of premature teeth loss due to periodontal disease or injury, as it significantly improves the basis for substance meaning more support and better fixation of dental implants. It also ensures better aesthetic results compared to most conventional augmentation techniques.

The TRACK distractor family now provides a complete range of individual devices for the treatment of smaller partial defects of the maxillary and mandibular alveolar ridge up to the highly atrophic edentulous mandible with a huge number of clinical cases already treated all over the world. The distraction process naturally varies from patient to patient. As a rule, the entire distraction process – from insertion to removal of the device – can be completed within a period of 3-4 months.

Upon inserting the distractor, an initial latency period of 5-7 days is typically required. In the following phase, the distractor is pulled apart approx. 1 mm per day, using an activation key.

As soon as the desired bone height is achieved, the consolidation phase sets in, extending over approx. 8-12 weeks. During this period, the distractor is left in place in order to stabilize the new (but still soft) bone. When the distractor is finally removed, the dental implants are inserted simultaneously.

In this product leaflet, you will be able to find vertical distraction devices for all possible indications including their respective instruments as well as storage modules for processing all in one set.

A tiny tool, with a great impact!



What are the advantages of alveolar process distraction?

This type of distraction actually offers quite a number of advantages, compared to traditional bone reconstruction techniques:

- There is no need to harvest bone substance from other body regions in order to graft it onto the mandible or maxilla
- No need to use artificial (bone substitute) material
- Distraction not only forms new bone substance but also increases mucosa growth, thus achieving better aesthetic results
- No further soft-tissue corrections required in most cases
- More or less painless procedure



Developed in cooperation with

Prof. Dr. J. Hidding Dept. of Maxillofacial Surgery Bethesda Hospital Mönchengladbach, Germany

Prof. Dr. J. E. Zöller, Dr. Dr. F. Lazar Dept. of Maxillofacial Surgery University Hospital Köln, Germany

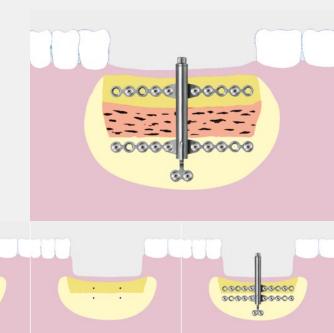
Indications

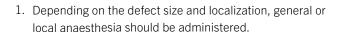
- Partial defects of the mandibular and maxillar alveolar process
- Periodontal diseases with severe localized bone loss
- Localized atrophy of the alveolar ridge

Contra-Indications

- Cases of in-adequate bone volume
- Cases of in-adequate bone density
- Severe osteoporosis
- General contra-indication is the severe diseased system

Application step by step



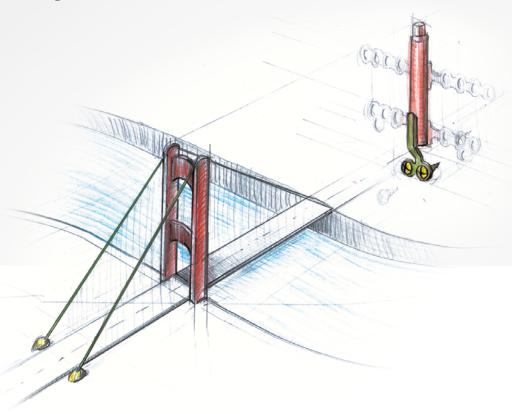


- 2. After a horizontal incision in the vestibulum, a buccal mucoperiosteal flap elevation is performed exposing the lateral cortex, without elevation of the crestal mucosa.
- 3. The vertical distractor is placed into the desired position. The microplates are now bent carefully to the mandibular shape using the bending pliers 25-486-13-07 and 51-525-76-04 or 51-520-70-07 or 51-530-70-07. Check the correct vector of distraction and avoid any occlusial inter-ference.
- 4. In this position one hole is drilled on either side of the microplates and a monocortical micro screw (4 or 5 mm) is inserted.
- 5. The distractor is removed again and the osteotomy line is then marked with a Lindemann burr.
- 6. Two vertical osteotomies are carried out using a reciprocating saw. A third horizontal osteotomy is performed apically joining the vertical component. In this manner an alveolar segmental osteotomy is achieved.
- 7. The segment is now entirely mobilized using fine chisels lingually. Care has to be taken of the mandibular nerve.

- 8. The segmental osteotomy is carried out immediately adjacent to neighbouring teeth in order to accomplish full defect coverage without damage to periodontal structure.
- 9. The distractor is then refixed in the same position with the screws previously used.
- 10. Additional screws are now inserted after drilling on the caudal and cranial side. Check and adjust the vector before placing two screws into the caudal vector stabilizing plate.
- 11. The function of the distractor is finally checked as well as a possible interference of the distraction rod with the occlusion.
- 12. The soft tissue is closed. X-ray control postopera-tively is recommended.
- 13. After 5-7 days the distraction can start with approximately 1 mm per day (for the number of turns, please refer to the patient screwdriver).
- 14. A retention period of approximately 6 weeks is recommended.
- 15. Removal of the distractor can be performed, normally under local anaesthesia.
- 16. Implant insertion should be considered at the same time as distractor removal takes place.

The distractor is designed for single use only!

Small plate, great effect!



As evidenced by scientific publications and reports, lingual or palatal distraction vector tilts occurring during the distraction phase are among the most frequent complications in alveolar process distraction.

This unwelcome situation can be reliably prevented by using an additional plate at the bottom end of the distractor.

The stabilization effect thus achieved can best be illustrated comparing it to a bridge. The pier supporting the bridge corresponds to the distraction body frequently prone to tilting due to tissue pull. In like manner, the pier's stay ropes anchored in the ground correspond to the tension plate that compensates such forces.

Biomechanical test series have shown that the TRACK with an extra plate increases its stability and tilting resistance threefold, compared with TRACK models employing no extra plate.

TRACK 1.0 mm

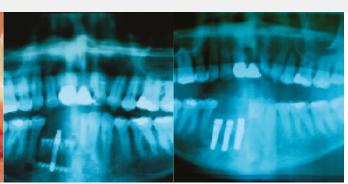
Indications

 smaller partial defects of the maxillar and mandibular alveolar ridge







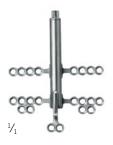


Defect, pre-operative

Distractor during the consolidation phase

Consolidation phase

After implant placement



51-525-15-09 TRACK 1.0 distraction length 15 mm

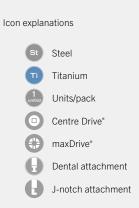




Please note

To avoid plate breakage during adaptation, always use the combination of bending pliers 25-486-13-07 and 51-525-76-04 or 51-520-70-07 or 51-530-70-07.

Screws and twist drills for TRACK 1.0 mm

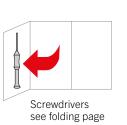


Micro screws Ø 1.0 mm Length Centre Drive* 4 mm 25-660-04-09 5 mm 25-660-05-09 6 mm



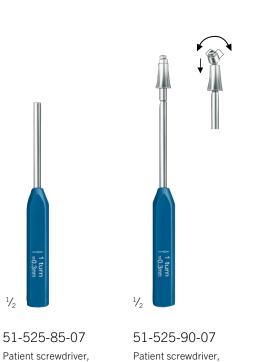




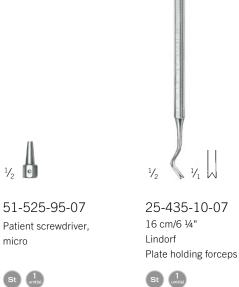


Drill bits (J-notch attachment)				
St	Ø x Length	Stop	Item No.	
0 4	0.7 x 50 mm	5 mm	25-454-05-07 (Initial	
	0.7 x 50 mm	5 mm	25-454-05-91 (Initial)	
Section 2	0.7 x 50 mm	7 mm	25-454-07-07 (mitts)	
200	0.7 x 50 mm	7 mm	25-454-07-91 (nitts)	
i income				
7.	for dense bone	Stop	Item No.	
i i	0.8 x 50 mm	5 mm	25-457-05-07 (unit(s)	
R	0.8 x 50 mm	5 mm	25-457-05-91 (unit(s)	
	0.8 x 50 mm	7 mm	25-457-07-91 (unit(s)	

Instruments for TRACK 1.0 mm



combination straight + angled











straight





Steel

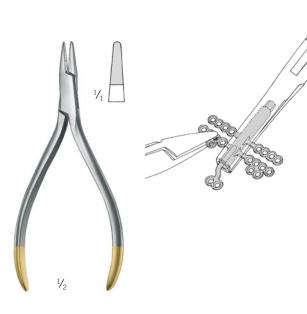


Titanium



Units/pack

TC GOLD TC Instruments with hard-metal inserts



25-486-13-07 13 cm/5 ½" Modelling plier











51-525-76-04 13 cm/5 ½" Distractor holding plier for TRACK 1.0 mm







25-490-11-07 12 cm/4 3/4" Plate cutter

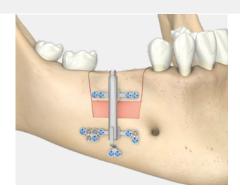


TRACK 1Plus

Indications

 up to 3-4 teeth (35 mm) segments of the alveolar ridge













51-524-15-09 TRACK 1Plus distraction length 15 mm







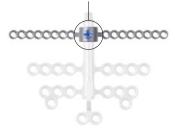


To avoid plate breakage during adaptation, always use the combination of bending pliers 25-486-13-07 and 51-525-76-04 or 51-520-70-07 or 51-530-70-07.



TRACK 1.0 with optional support plate 51-525-40-09

1.5-mm maxDrive® locking screw



51-525-40-09 Optional support plate for TRACK 1.0 and TRACK 1Plus





The additional support plate of the TRACK 1.0 or TRACK 1 plus distractor will be fixed by 1.5-mm maxDrive® screws.

For screws and drill bits see page 9.

TRACK 1.5 mm Icon explanations Indications • wide atrophies up to 60 mm width Steel Titanium Units/pack





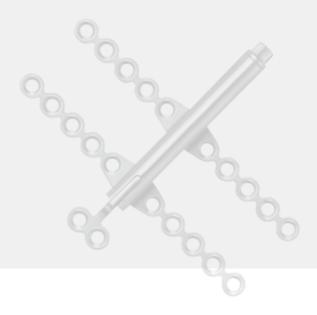
51-520-15-09 TRACK 1.5 distraction length 15 mm

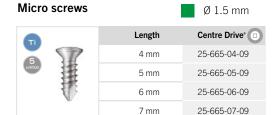


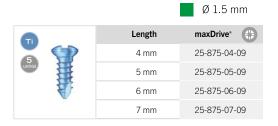


To avoid plate breakage during adaptation, always use the combination of bending pliers 25-486-13-07 and 51-525-76-04 or 51-520-70-07 or 51-530-70-07.

Screws and twist drills TRACK 1Plus and TRACK 1.5 mm



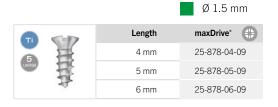


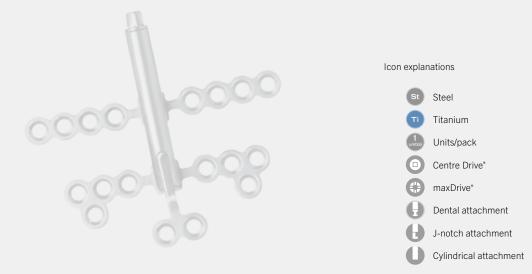




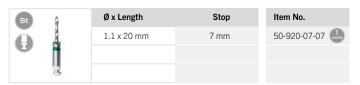


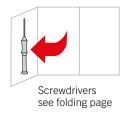






Drill bits (dental attachment)





Drill bits (J-notch attachment)



Milling cutter

St	Ø x Length	Stop	Item No.
13 1	1.1 x 45 mm	11 mm	38-051-45-07 (1)

Instruments for TRACK 1Plus and TRACK 1.5 mm













51-525-90-07 Patient screwdriver, combination straight + angled,





51-525-95-07

Patient screwdriver,

for TRACK 1Plus

micro,



51-500-90-07 Patient screwdriver, straight, for TRACK 1.5 mm





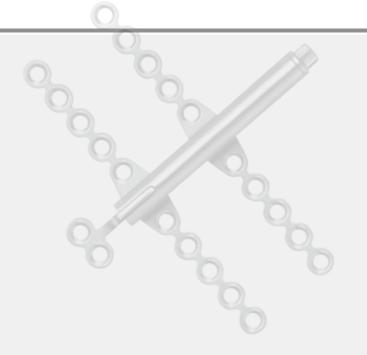
51-505-90-07 Patient screwdriver, angled, for TRACK 1.5 mm





51-520-95-07 Patient screwdriver, micro, for TRACK 1.5 mm





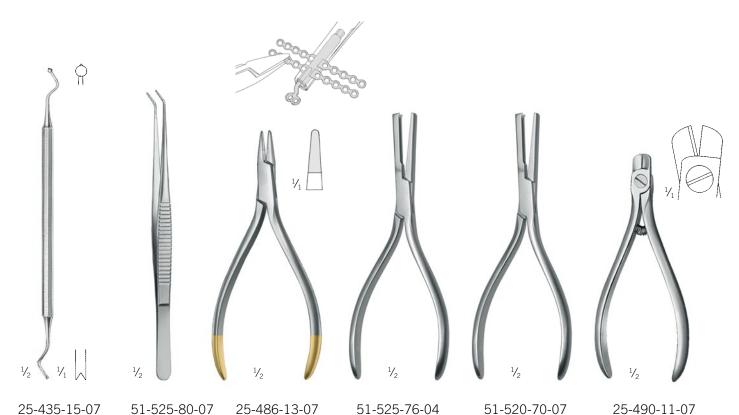
Icon explanations

Steel



Titanium Units/pack

TC GOLD TC Instruments with hard-metal inserts



25-435-15-07 18 cm/7"

Lindorf Plate holding forceps 51-525-80-07 15.5 cm/6" Plate holding forceps, curved

25-486-13-07 13 cm/5 ½" Modelling plier

St 1 unit(s)

13 cm/5 ½"

for TRACK 1Plus

Distractor holding plier

51-520-70-07 13 cm/5 ½" Distractor holding plier

for TRACK 1.5 mm

25-490-11-07 12 cm/4 ¹/₃" Plate cutter



TRACK 2.0

Indications

highly atrophic and edentulous mandibles in the front section





51-530-15-09 TRACK 2.0 distraction length 15 mm





Please note:

To avoid plate breakage during adaptation, always use the combination of bending pliers 25-486-13-07 and 51-525-76-04 or 51-520-70-07 or 51-530-70-07.

1.5 mm screws for TRACK 2.0









Icon explanations





Titanium Units/pack



Centre Drive®



maxDrive*



Ø 1.5 mm



Length	Centre Drive*
4 mm	25-665-04-09
5 mm	25-665-05-09
6 mm	25-665-06-09
7 mm	25-665-07-09

			Ø 1.5 mm
		Length	maxDrive*
5 unita		4 mm	25-875-04-09
	#	5 mm	25-875-05-09
	3	6 mm	25-875-06-09
		7 mm	25-875-07-09

Emergency screws

Ø 1.8 mm



	Length	Centre Drive*
	5 mm	25-666-05-09
F	7 mm	25-666-07-09

			Ø 1.8 mm
		Length	maxDrive*
5 unit(s)		4 mm	25-876-04-09
	1	5 mm	25-876-05-09
		7 mm	25-876-07-09

Drill-Free screws

Ø 1.5 mm



	Length	Centre Drive*
1	4 mm	25-668-04-09
	5 mm	25-668-05-09
4	6 mm	25-668-06-09

	Length	maxDrive*
5	4 mm	25-878-04-09
unit(s)	5 mm	25-878-05-09
7	6 mm	25-878-06-09

Ø 1.5 mm

2.0 mm screws for TRACK 2.0 for base plate



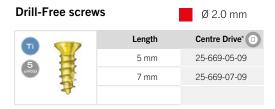














Twist drills 1.5 and 2.0 mm screws

Icon explanations St Steel Ti Titanium Units/pack Centre Drive* maxDrive* Dental attachment J-notch attachment Cylindrical attachment

Drill bits for 1.5 mm screws (J-notch attachment)



Drill bits for 1.5 mm screws (dental attachment)

St A	Ø x Length	Stop	Item No.
	1.1 x 20 mm	7 mm	50-920-07-07
3			

Drill bits for 2.0 mm screws (J-notch attachment)



Drill bits for 2.0 mm screws (dental attachment)

St A	Ø x Length	Stop	Item No.
	1.5 x 20 mm	7 mm	50-924-07-07 (Indicate)
3			

Milling cutter

St	1 1	Ø x Length	Stop	Item No.
St		1.1 x 45 mm	11 mm	38-051-45-07 (Initial)
U				

Instruments for TRACK 2.0 mm













51-505-90-07 Patient screwdriver, angled, for TRACK 1.5 mm



Patient screwdriver, micro, for TRACK 1.5 mm



 $\frac{1}{1}$

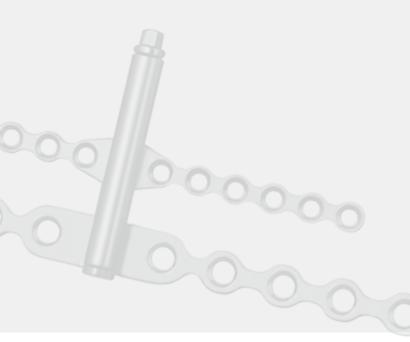
25-435-15-07 18 cm/7" Lindorf, Plate holding forceps



51-525-80-07 15.5 cm/6" Plate holding forceps, curved







Icon explanations

Steel

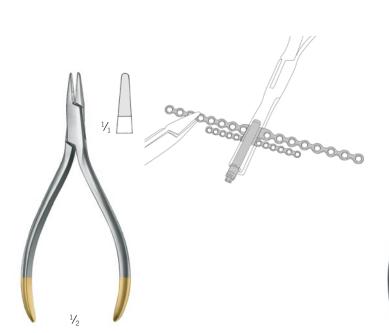


Titanium



Units/pack

TC GOLD TC Instruments with hard-metal inserts









TC GOLD



51-530-70-07 13 cm/5 ½" Distractor holding plier for TRACK 2.0 mm







25-420-16-07 16 cm/6 ½" Plate cutter





TC GOLD

Storage modules



Bone graft kit

Category	Scope	Item Number
Bone graft kit	complete	50-700-00-04
consisting of:		
Insert module, grey	separate	55-962-07-04
Insert bone graft kit	separate	55-964-28-04
Lid bone graft kit	separate	55-963-28-04

Distraction module

Category	Scope	Item Number
Insert module, purple	separate	55-962-08-04
Storage module, purple	separate	55-962-18-04
Lid for distraction module	separate	55-963-17-04
Lid storage module	separate	55-963-09-04
Insert f. TRACK distractors	separate	55-964-23-04
Insert universal	separate	55-964-17-04

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Going deeper ... Literature

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The natural way for jawbone reconstruction

Distraction — a new procedure for achieving perfect results in implantology

Operated on:	B				
Start of distraction:	Please observe arrow direction when operating the distractor!				
Rotations per day:	When operating the distractors				
Questions? – Telephone No.:	TRACK 1.0 / 1 Plus: 0.3 mm / rotation				
	TRACK 1.5 / 2.0: 0.5 mm / rotation				
Further Doctor's orders:					

Da	y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Rotations	1															
	2															
	3															



The natural way for jawbone reconstruction

What does "distraction" mean?

Distraction osteogenesis is a technique for lengthening or reconstructing bones that utilizes the self-healing forces of the human body. In this process, new bone tissue (so-called callus) starts forming between two separate bone pieces as they are slowly pulled apart. To pull the two bone sections apart, a small distraction apparatus is employed, which is fitted to the jawbone and needs to be activated by you on a daily basis.

Distraction involves different phases, to be such as:

Latency phase: Means the time period between the surgical

intervention and the beginning of the distraction.

Distraction phase: The time period during which distraction takes place

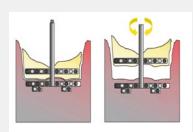
at a rate of approx. 1 mm per day.

Consolidation phase: The time period required for the bone to heal and

ossify. This phase is completed when the distractor

is removed.





What does "alveolar process distraction" mean – and how does it work?

Alveolar process distraction achieves the vertical lengthening (reconstruction) of the maxilla or mandible. This represents a highly valuable technique in cases of premature teeth loss due to periodontal disease or injury, as it significantly improves the basis for subsequent prosthetic treatment. In any case, more bone substance means more support and better fixation of dental implants and also ensures better aesthetic results.

How long will the distraction process take?

This naturally varies from patient to patient. As a rule, the entire distraction process – from insertion to removal of the device – can be completed within a period of 3-4 months.

Upon inserting the distractor, an initial latency period of 5-7 days is typically required. In the following distraction phase, the distractor is pulled apart approx. 1 mm per day, using an activation key.

As soon as the desired bone height is achieved, the consolidation phase sets in, extending over approx. 8-12 weeks. During this period, the distractor is left in place in order to stabilize the new (but still soft) bone. When the distractor is finally removed, the dental implants are inserted simultaneously.

Make sure you always follow your doctor's instructions, as these could differ from this general, rough-and-ready description.











What are the advantages of alveolar process distraction?

This type of distraction actually offers quite a number of advantages, compared to traditional bone reconstruction techniques:

- There is no need to harvest bone substance from other body regions in order to graft it onto the mandible or maxilla.
- No need to use artificial (bone substitute) material.
- Distraction not only forms new bone substance but also increases mucosa growth, thus achieving better aesthetic results.
- No further soft-tissue corrections required in most cases.
- · More or less painless procedure.

What needs to be observed during the therapy?

- · Always comply fully with your doctor's instructions.
- Be sure to follow a soft diet during the entire distraction period.
- Careful oral hygiene is indicated during the entire treatment.
- Smoking can impair distraction results. So never smoke during the treatment!

Who can benefit from alveolar process distraction?

Patients of all age groups suffering from a lack of bone substance in the maxilla or mandible; patients with orthodontic conditions such as ankylosed teeth or open bite.

For the following patient groups, a distraction failure cannot be ruled out:

- diabetics
- patients with osteoporosis
- patients with an immune deficiency
- patients having undergone radiation treatment

06

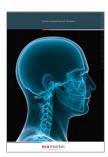
If you still have any questions we will be glad to answer them anytime.

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Additional product brochures and information materials



Folder system Craniomaxillofacial surgery



General catalog



Dental catalog



Patient leaflet for details (available in German and English)



Distraction product overview



SonicWeld Rx® Restoring nature



SonicWeld Rx® overview The perfect choice



SonicWeld Rx® overview Surgical techniques and product range



SonicWeld Rx° CD-ROM

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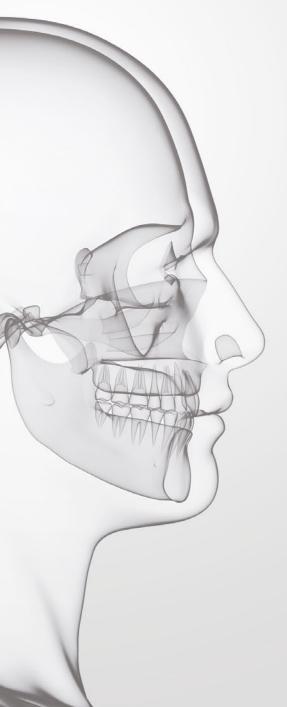
^{* ©} Kurt Haberstich (*1948)

Distractors

Devices for use in correction of malformations

- Cranial distraction
- Midface distraction
- Mandibular distraction





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- IPS CaseDesigner®
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