KLS martin GROUP

Zurich II Distraction Concept

New horizons in horizontal mandibular distraction

www.klsmartin.com

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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P. A. DINER Children's Hospital A. Trousseau – Paris – France

Zurich II Distraction Concept
New horizons in horizontal mandibular distraction

A whole variety of new products have been added in response to repeated customer demands, usually as special solutions to the therapeutic difficulties posed by specific pathologies.

The insight that intraoral distractors can be successfully used even in infants became generally accepted and customer requests for a more modular and symmetric design have been implemented along the way as well.

This brochure is intended to give you a comprehensive overview of the entire range of KLS Martin distractors for horizontal mandibular and ramus distraction. Should you be looking for a special design not included in this documentation, do not hesitate to put us to the test! We are confident that we will be able to implement your design suggestions fast and to your full satisfaction.

KLS Martin – Surgical innovation is our passion!

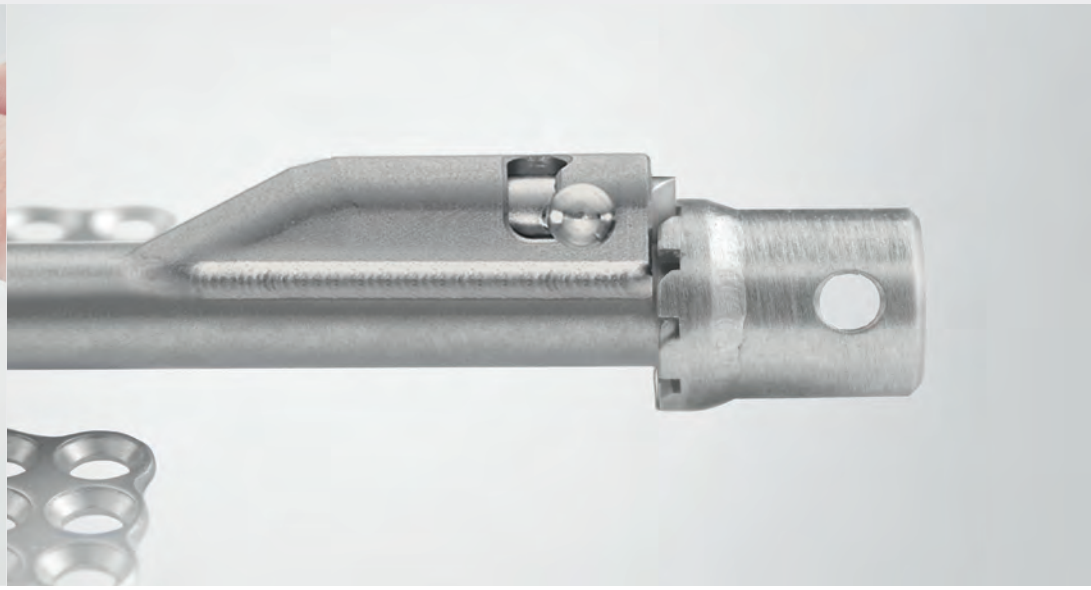
Zurich II Distraction Concept

The different anatomical forms of mandibular microsomias and asymmetries frequently make high demands on the variability and adaptability of the distractors used. Prefabricated distractor models are sometimes too static and therefore cannot meet the requirements of specific clinical tasks.

The Zurich II concept takes a completely different path: it is totally based on a modular principle, breaking down intraoral distractors into their basic components.

All system components can be easily and rapidly combined with each other to create a perfect whole.

Product Features maximum benefit



Product advantages

Fast and easy creation of customized problem solutions meeting the anatomical requirements of each patient

- Perfected modularity – minimized stock-keeping
- The distractors can be easily adapted at any time (even intraoperatively).
- Low cross-section of the Zurich distractors, with proven record of high stability
- Symmetrical design – no right and left versions
- No waiting times for special individual configurations
- Customized activation cardanics for each individual patient
- Activation spindle can be attached and removed as needed.
  This increases patient convenience during the consolidation period.

Zurich II Distraction Concept

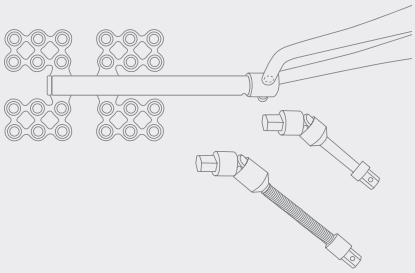
Symmetrical design

Advantages

The symmetrical design allows you to use the same distractor on the left or on the right side. This reduces your stock-keeping needs and lowers the amount of capital tied up in distractors held in stock. The fixing plates can be cut to size intraoperatively to adapt them to individual anatomical requirements.

The plates available include the well-known clover-leaf plates and mesh designs. The distractors can be installed in place with the plates down or up.

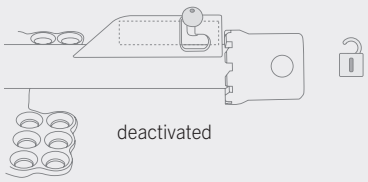
A whole range of activators

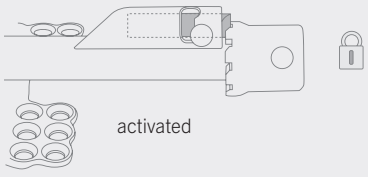


The Zurich II distractor line can be supplemented with a whole range of activators (see pages 8-11).

The various activators come in a modular design as well and therefore can be freely combined with each other. Besides, there is the option of using additional cardanic extensions for more flexibility. The activator can be removed during consolidation period for increased patient convenience.

Anti-relapse ratchet

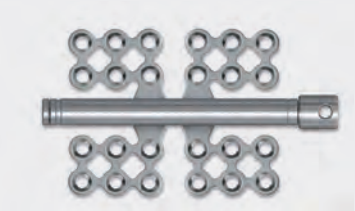




Some distractors of the Zurich II and Micro Zurich II product lines feature an anti-relapse ratchet that reliably prevents backward rotation of the distractor and consequential relapse of the distracted bone area. This stop can be deactivated intraoperatively for function test performance.

Maximum flexibility thanks to optional combination of different activators

Distractor, Mesh design, middle-driven



Example: Activator length 61 mm
1:1 scale

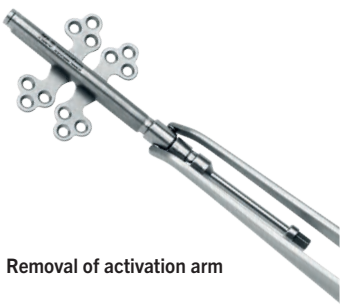
Rigid extension 20 mm for activation arm

Single cardanic extension for activation arm

Activation arm, rigid, incl. cardanic element, 35 mm

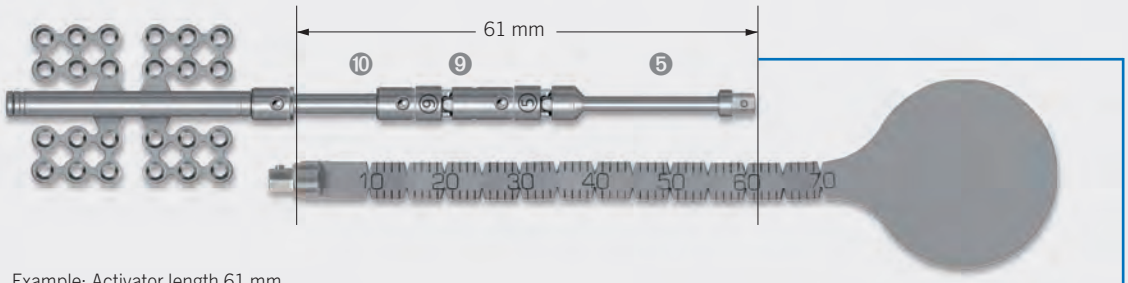
Activation arms

	Activation arms	Item No.
❶ 	Activation arm, flexible, incl. cardanic element, 30 mm	51-400-30-09
❷ 	Activation arm, flexible, incl. cardanic element, 40 mm	51-400-40-09
❸ 	Activation arm, flexible, incl. cardanic element, 50 mm	51-400-50-09
❹ 	Activation arm, rigid, incl. cardanic element, 25 mm	51-401-25-09
❺ 	Activation arm, rigid, incl. cardanic element, 35 mm	51-401-35-09
❻ 	Activation arm, rigid, incl. cardanic element, 45 mm	51-401-45-09
❼ 	Activation arm, rigid, incl. cardanic element, 50 mm, clipable	51-401-50-09
	Additional	**Item No.**
❽ 	Direct drive activator	51-401-90-09
❾ 	Single cardanic extension for activation arm	51-401-91-09
❿ 	Rigid extension 20 mm for activation arm	51-401-92-09
1/1 	Trocar tip for activation arm	51-401-93-09



Removal of activation arm

After completion of distraction, the activator can be removed easily by using a special disconnection forceps (for more information, see page 21+33).



Example: Activator length 61 mm
1:1 scale

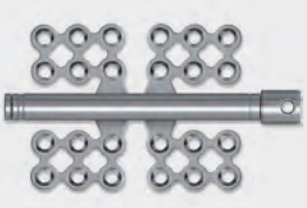
Combination options

L (mm)	System
16	❽ + ❾
20	❽ + ⑩
22	❹
27	❶
32	❺
33	❽ + ❾ + ⑩
35	❹ + ❾
37	❷
39	❶ + ❾
39	❹ + ⑩
42	❻
44	❶ + ⑩
45	❺ + ❾
47	❼
47	❸
49	❷ + ❾
49	❺ + ⑩
51	❹ + ❾ + ⑩
54	❷ + ⑩
56	❶ + ❾ + ⑩
55	❻ + ❾
59	❸ + ❾
59	❻ + ⑩
60	❼ + ❾
61	❺ + ❾ + ⑩
64	❸ + ⑩
64	❼ + ⑩
66	❷ + ❾ + ⑩
71	❻ + ❾ + ⑩
76	❸ + ❾ + ⑩
77	❼ + ❾ + ⑩

Note: All Zurich II and Micro Zurich II distractors are delivered without activation arms.

Maximum safety and patient comfort thanks to Remote Release Activators

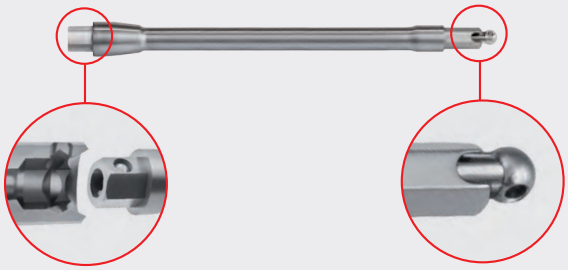
Distractor, Mesh design, middle-driven



Example: Activator length 53 mm
1:1 scale

Single cardanic extension for activation arm

Remote Release Activator, rigid, 53 mm



During the consolidation phase – once the active distraction process has been completed – distraction activators are basically no longer needed. Quite the contrary, they are not only a constant source of inconvenience to the patient but also involve elevated risk of infection right at the percutaneous point. Conventional distraction activators are disconnected from the distractor body with the aid of a special forceps. This usually requires that the operation situs has to be opened again to access the connection point between distractor and activator. Mainly in difficult accessible anatomical regions this can be both time-consuming and difficult and moreover the patient is exposed to additional stress.

Especially for such cases we developed an alternative, a new generation of activators:

The Remote Release Activators.

The special and completely new feature about these activators is that the mechanism of coupling and uncoupling is located at the point of activation with the patient screwdriver. Thereby the uncoupling of the activator can be initiated directly from the outside and the dissection of the way to the connection point between distractor and activator is not applicable anymore.

Remote Release Activators fit to all standard couplings that are designed for removable activators, such as almost all distractors specified in this brochure. They provide an alternative option in addition to the proven, conventional activators. **As standard Remote Release Activators are provided without cardanic element, they must be combined with the cardanic element 51-401-91-09 to reduce the risk of breakage.** If one choses an additional cardanic element, it will stay with the distractor after removal of the Remote Release Activator.

Uncoupling procedure

1. Pull out the release lug (some resistance needs to be overcome).

2. The release lug stands in exposed position by turning it clockwise or anti-clockwise by 90°.

3. This lowers the ball and socket of the universal coupling of the activator.

4. The activator can now be easily removed.

Coupling procedure

The coupling procedure is exactly the same up to step 3. Once the ball and socket is lowered, the activator can be easily plugged in place. To lock it, rotate the release lug back by 90° and push it in. This causes the internal ball to rise, thus locking the activator in place.

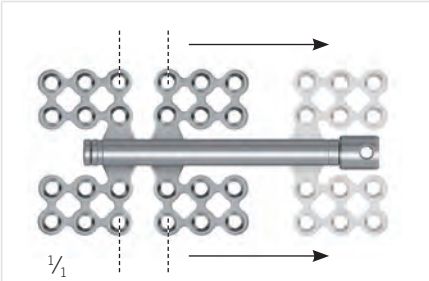
Remote Release Activators

	Activators	Item No.
	Remote Release Activator, flexible, 33 mm	51-411-33-09
	Remote Release Activator, rigid, 33 mm	51-410-33-09
	Remote Release Activator, rigid, 43 mm	51-410-43-09
	Remote Release Activator, rigid, 53 mm	51-410-53-09
	Single cardanic extension for activation arm	51-401-91-09

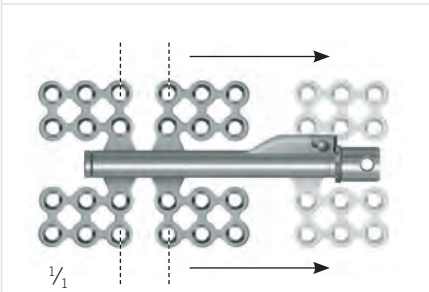
Each Remote Release Activator comes with a dedicated instruction for use providing all important information for handling the device.

Zurich II Distraction System
The distractor bodies

End-driven distractors
(the posterior plate stays in place, while the anterior plate moves forward)



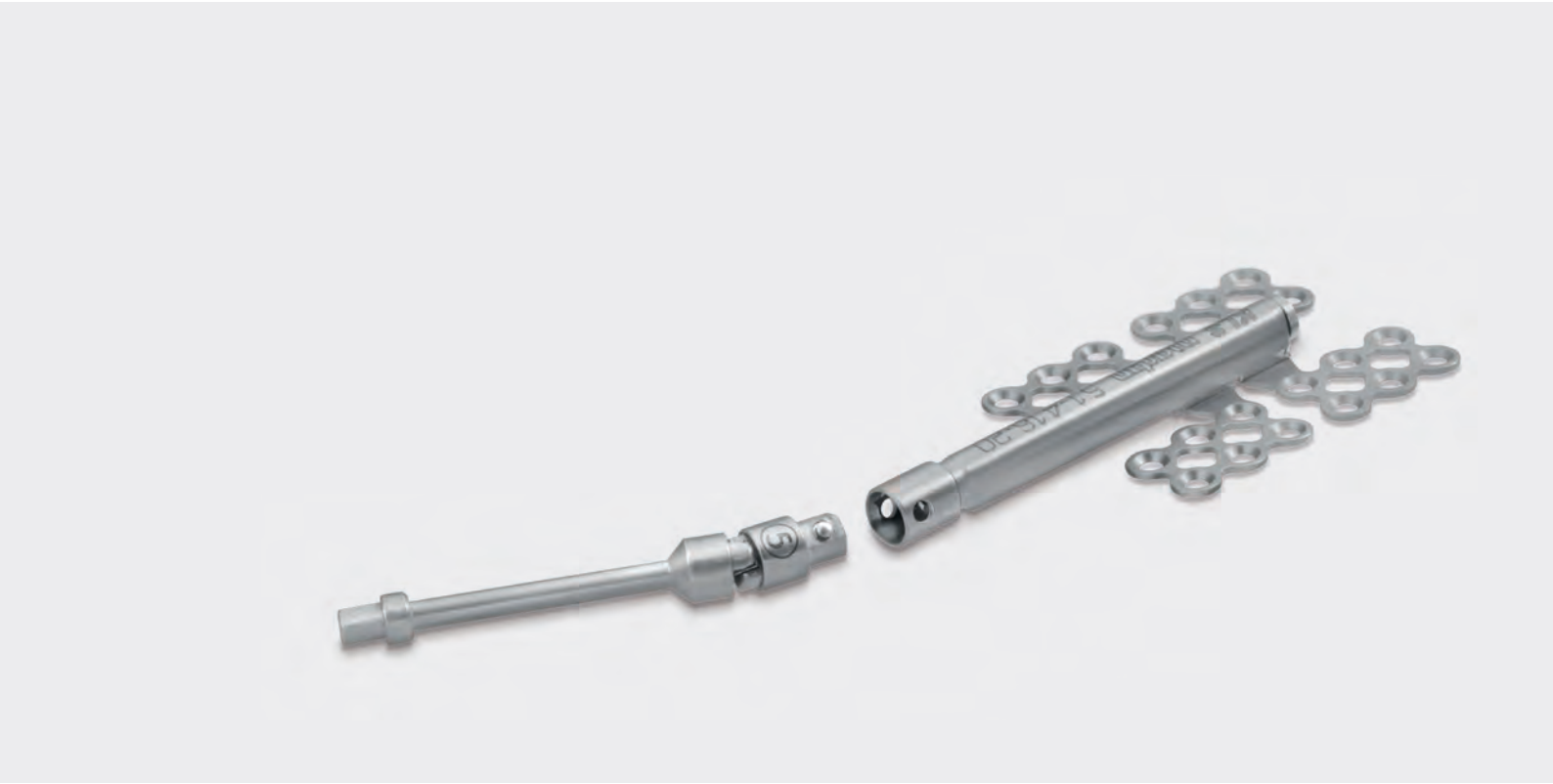
Item No.	Distraction length	Ratchet	Screws	1 turn =	Pat. SD
51-416-15-09	15 mm	no	1.5 Micro	0.5 mm	
51-416-20-09	20 mm	no	1.5 Micro	0.5 mm	
51-416-25-09	25 mm	no	1.5 Micro	0.5 mm	
51-416-30-09	30 mm	no	1.5 Micro	0.5 mm	



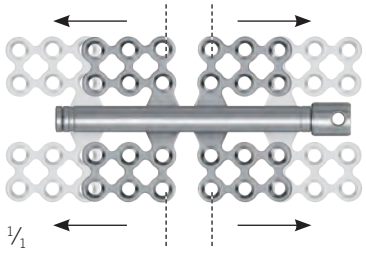
Item No.	Distraction length	Ratchet	Screws	1 turn =	Pat. SD
51-426-15-09	15 mm	yes	1.5 Micro	0.5 mm	
51-426-20-09	20 mm	yes	1.5 Micro	0.5 mm	
51-426-25-09	25 mm	yes	1.5 Micro	0.5 mm	
51-426-30-09	30 mm	yes	1.5 Micro	0.5 mm	

51-500-90-07
Patient screwdriver

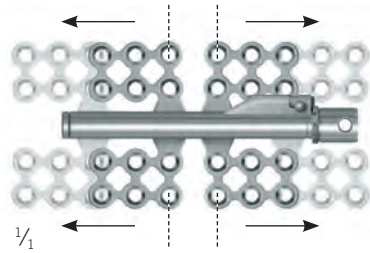
Note: All Zurich II and Micro Zurich II distractors are delivered without activation arms. Activation arms see page 8-11.



Middle-driven distractors
(both plates start from central position bilaterally)



Item No.	Distraction length	Ratchet	Screws	1 turn =	Pat. SD
51-415-15-09	15 mm	no	1.5 Micro	0.5 mm	
51-415-20-09	20 mm	no	1.5 Micro	0.5 mm	
51-415-25-09	25 mm	no	1.5 Micro	0.5 mm	
51-415-30-09	30 mm	no	1.5 Micro	0.5 mm	



Item No.	Distraction length	Ratchet	Screws	1 turn =	Pat. SD
51-425-15-09	15 mm	yes	1.5 Micro	0.5 mm	
51-425-20-09	20 mm	yes	1.5 Micro	0.5 mm	
51-425-25-09	25 mm	yes	1.5 Micro	0.5 mm	
51-425-30-09	30 mm	yes	1.5 Micro	0.5 mm	

51-500-90-07
Patient screwdriver

Note: All Zurich II and Micro Zurich II distractors are delivered without activation arms. Activation arms see page 8-11.

Zurich II Distraction System
Micro Zurich II Distractors

Early intraoral distraction therapy for babies and infants aged up to one year requires distractors with an especially small cross-section to ensure that the distractor can be reliably covered with soft tissue. The Micro Zurich II product line has been designed with exactly this goal in mind.

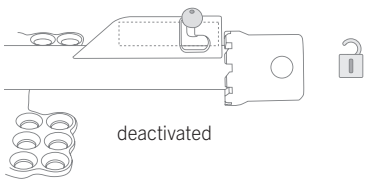
Product features

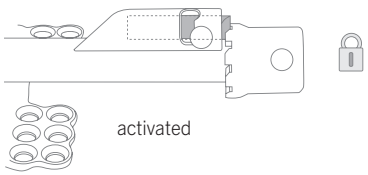
- All distractors are symmetrical. There are no right/left versions.
- Almost all Micro Zurich II distractors are fixed in place with 1.0 mm micro screws.

  1 turn = 0.3 mm distraction length (end-driven distractors)
- Different plates and mesh designs provide the flexibility for optimum fixation according to anatomical requirements.
- Softer, tissue-protecting transition of the anti-relapse ratchet to the distraction body to prevent irritation and simplify insertion and removal of distractors.
- In addition, the user can select from the entire range of activation arms described on page 8-11.

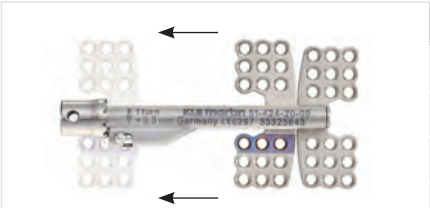
The anti-relapse ratchet

Some distractors of the Zurich II and Micro Zurich II product lines feature an anti-relapse ratchet that reliably prevents backward rotation of the distractor and consequential relapse of the distracted bone area. This ratchet can be deactivated intraoperatively for function test performance.

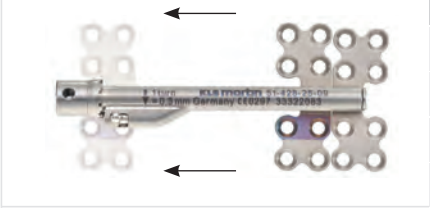




End-driven distractors
(the posterior plate stays in place, while the anterior plate moves forward)



Item No.	Distraction length	Ratchet	Screws	1 turn =	Pat. SD
51-424-15-09	15 mm	yes	1.0 Micro	0.3 mm	
51-424-20-09	20 mm	yes	1.0 Micro	0.3 mm	
51-424-25-09	25 mm	yes	1.0 Micro	0.3 mm	
51-424-30-09	30 mm	yes	1.0 Micro	0.3 mm	



Item No.	Distraction length	Ratchet	Screws	1 turn =	Pat. SD
51-428-15-09	15 mm	yes	1.5 Micro	0.3 mm	
51-428-20-09	20 mm	yes	1.5 Micro	0.3 mm	
51-428-25-09	25 mm	yes	1.5 Micro	0.3 mm	
51-428-30-09	30 mm	yes	1.5 Micro	0.3 mm	

51-430-95-07
Patient screwdriver

Note: All Zurich II and Micro Zurich II distractors are delivered without activation arms. Activation arms see page 8-11.

Screws, Drill Bits and Screwdrivers 1.0 mm Micro

suited for:

- Most Micro Zurich II Distractors
- HyperDrive Mandibular Distractor Micro Version

maxDrive® 1.2 mm

Ti 1

Micro Screws

self-retaining

Ø x Length	maxDrive®	STERILE R
1.2 x 2 mm		
1.2 x 3 mm	25-870-03-91	25-870-03-71
1.2 x 4 mm	25-870-04-91	25-870-04-71
1.2 x 5 mm	25-870-05-91	25-870-05-71
1.2 x 6 mm	25-870-06-91	25-870-06-71
1.2 x 7 mm		
1.2 x 9 mm	25-870-09-91	25-870-09-71
1.2 x 11 mm	25-870-11-91	25-870-11-71
1.2 x 13 mm	25-870-13-91	25-870-13-71

maxDrive® Hex Head 1.2 mm

Ti 1

Drill-Free Hex Head Screws

Ø x Length	Thread Length	maxDrive®
1.2 x 7 mm	5 mm	50-347-07-09
1.2 x 9 mm	7 mm	50-347-09-09

Screwdriver blades for 1.2 mm screws

for screwdriver handle 25-402-99-07

St 1

maxDrive®
25-489-97-07

Note:

Hex head screws lessen the difficulty of removal if there is bony overgrowth or the screw head is difficult to see during removal. Although hex head screws are drill free, predrilling may be required depending on the specific patient's bone.

The following applies to distractors with ratchet:

The clearance of the distractor must be checked in the extended state. It must be ensured that the hex head screws do not collide with the ratchet device.

Icon explanations

- St Steel
- Ti Titanium
- 1 Units/pack
- maxDrive®
- maxDrive® Hex Head
- Centre Drive®
- J-Notch attachment
- Dental attachment
- STERILE R Sterile packed implants

51-525-85-07
Patient screwdriver
for maxDrive® Hex Head

25-402-99-07
Screwdriver handle
size “M”

25-480-99-07
Screwdriver handle
size “S”

Centre Drive® 1.0 mm

Micro Screws

self-retaining

Ø x Length	Centre Drive®	STERILE R
1.0 x 2 mm	25-660-02-09	
1.0 x 3 mm	25-660-03-09	25-660-03-75
1.0 x 4 mm	25-660-04-09	25-660-04-75
1.0 x 5 mm	25-660-05-09	25-660-05-75
1.0 x 6 mm	25-660-06-09	25-660-06-75
1.0 x 7 mm	25-660-07-09	25-660-07-75
1.0 x 9 mm	25-660-09-09	25-660-09-75
1.0 x 11 mm	25-660-11-09	25-660-11-75
1.0 x 13 mm	25-660-13-09	25-660-13-75

Emergency Screws

self-retaining

Ø x Length	Centre Drive®	STERILE R
1.2 x 3 mm	25-661-03-09	25-661-03-75
1.2 x 5 mm	25-661-05-09	25-661-05-75

Emergency Screws

self-retaining

Ø x Length	Centre Drive®	
1.2 x 5 mm	25-601-05-09	
1.2 x 7 mm	25-601-07-09	
1.2 x 9 mm	25-601-09-09	
1.2 x 11 mm	25-601-11-09	
1.2 x 13 mm	25-601-13-09	

Drill bits

Drill bits (J-Notch attachment)

Ø x Length	Stop	Item No.	
0.7 x 50 mm	3 mm	25-454-03-07	5
0.7 x 50 mm	3 mm	25-454-03-91	1
0.7 x 50 mm	5 mm	25-454-05-07	5
0.7 x 50 mm	5 mm	25-454-05-91	1
0.7 x 50 mm	7mm	25-454-07-07	5
0.7 x 50 mm	7 mm	25-454-07-91	1
for dense bone			
0.8 x 50 mm	5 mm	25-457-05-07	5
0.8 x 50 mm	5 mm	25-457-05-91	1
0.8 x 50 mm	7 mm	25-457-07-91	1

Drill bits for angled handpiece (dental attachment)

Ø x Length	Stop	Item No.	
0.7 x 18 mm	5 mm	50-916-05-07	5
0.7 x 20 mm	7 mm	50-916-07-07	1

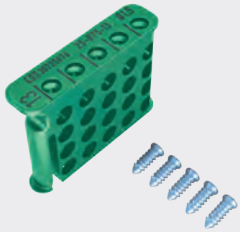
Screwdriver blades

Ø x Length	Item No.	
Size “S”	25-492-98-07	1
Size “M”	25-428-98-07	1
Angled screwdriver	50-910-10-07	1

Screws, Drill Bits and Screwdrivers 1.5 mm Micro

suited for:

- Zurich II Distractors
- Micro Zurich II Distractors (partially)
- Horizontal and Ramus Distractors
- Mandibular Telescoping Distractors
- Zurich Wood Distractors
- Zurich Bidirectional Mandibular Distractors
- Right Angle Driven (RAD) Distractors
- Ramus Transport Distractors
- HyperDrive Mandibular Distractor Standard Versions



maxDrive®
in 5-piece clip magazines
All screws are made of titanium

Ti 5

maxDrive® 1.5 mm

Micro Screws

self-retaining

Ø x Length	maxDrive®	STERILE R
1.5 x 3.5 mm	25-875-03-09	25-875-03-75
1.5 x 4 mm	25-875-04-09	25-875-04-75
1.5 x 5 mm	25-875-05-09	25-875-05-75
1.5 x 6 mm	25-875-06-09	25-875-06-75
1.5 x 7 mm	25-875-07-09	25-875-07-75
1.5 x 8 mm	25-875-08-09	25-875-08-75
1.5 x 9 mm	25-875-09-09	25-875-09-75
1.5 x 11 mm	25-875-11-09	25-875-11-75
1.5 x 13 mm	25-875-13-09	25-875-13-75

Emergency Screws

self-retaining

Ø x Length	maxDrive®	STERILE R
1.8 x 3.5 mm	25-876-03-09	25-876-03-75
1.8 x 4 mm	25-876-04-09	
1.8 x 5 mm	25-876-05-09	25-876-05-75
1.8 x 7 mm	25-876-07-09	25-876-07-75

Drill-Free Screws

self-retaining

Ø x Length	maxDrive®	STERILE R
1.5 x 3.5 mm	25-878-03-09	
1.5 x 4 mm	25-878-04-09	25-878-04-75
1.5 x 5 mm	25-878-05-09	25-878-05-75
1.5 x 6 mm	25-878-06-09	25-878-06-75
1.5 x 7 mm	25-878-07-09	25-878-07-75

Centre Drive® 1.5 mm

Micro Screws

self-retaining

Ø x Length	Centre Drive®	STERILE R
1.5 x 3.5 mm	25-665-03-09	25-665-03-75
1.5 x 4 mm	25-665-04-09	25-665-04-75
1.5 x 5 mm	25-665-05-09	25-665-05-75
1.5 x 6 mm	25-665-06-09	25-665-06-75
1.5 x 7 mm	25-665-07-09	25-665-07-75
1.5 x 8 mm	25-665-08-09	25-665-08-75
1.5 x 9 mm	25-665-09-09	25-665-09-75
1.5 x 11 mm	25-665-11-09	25-665-11-75
1.5 x 13 mm	25-665-13-09	25-665-13-75

Emergency Screws

self-retaining

Ø x Length	Centre Drive®	STERILE R
1.8 x 3.5 mm	25-666-03-09	25-666-03-75
1.8 x 5 mm	25-666-05-09	25-666-05-75
1.8 x 7 mm	25-666-07-09	25-666-07-75

Drill-Free Screws

self-retaining

Ø x Length	Centre Drive®	STERILE R
1.5 x 4 mm	25-668-04-09	25-668-04-75
1.5 x 5 mm	25-668-05-09	25-668-05-75
1.5 x 6 mm	25-668-06-09	25-668-06-75
1.5 x 7 mm	25-668-07-09	25-668-07-75

Icon explanations

- St Steel
- Ti Titanium
- 1 Units/pack
- maxDrive®
- maxDrive® Hex Head
- Centre Drive®
- J-Notch attachment
- Dental attachment
- STERILE R Sterile packed implants

51-500-90-07
Patient screwdriver
for maxDrive® Hex Head

25-402-99-07
Screwdriver handle
size “M”

maxDrive® Hex Head 1.5 mm

Drill-Free Hex Head Screws

Ø x Length	Thread Length	maxDrive®
1.5 x 7 mm	5 mm	50-348-07-09
1.5 x 9 mm	7 mm	50-348-09-09

Screwdriver blades for 1.5 mm screws

for screwdriver handle 25-407-03-04

maxDrive Drive®
25-438-97-07

Note:

Hex head screws lessen the difficulty of removal if there is bony overgrowth or the screw head is difficult to see during removal. Although hex head screws are drill free, predrilling may be required depending on the specific patient‘s bone.

The following applies to distractors with ratchet:

The clearance of the distractor must be checked in the extended state. It must be ensured that the hex head screws do not collide with the ratchet device.

Drill bits

Drill bits (J-Notch attachment)

Ø x Length	Stop	Item No.	
1.1 x 50 mm	3.5 mm	25-452-03-07	5
1.1 x 50 mm	3.5 mm	25-452-03-91	1
1.1 x 50 mm	5 mm	25-452-05-07	5
1.1 x 50 mm	5 mm	25-452-05-91	1
1.1 x 50 mm	7 mm	25-452-07-07	5
1.1 x 50 mm	7 mm	25-452-07-91	1
1.1 x 50 mm	9 mm	25-452-09-07	5
1.1 x 50 mm	9 mm	25-452-09-91	1
for transbuccal access			
1.1 x 105 mm	5 mm	50-511-05-07	1
1.1 x 105 mm	7 mm	25-452-57-07	1
1.1 x 105 mm	20 mm	25-452-61-07	1

Drill bits for angled handpiece (dental attachment)

Ø x Length	Stop	Item No.	
1.1 x 18 mm	5 mm	50-920-07-07	5
1.1 x 20 mm	no Stop	50-920-00-07	1

Screwdriver blades

Ø x Length	Centre Drive®	maxDrive®
Size “M”	25-430-98-07	25-489-97-07
Size “L”*		25-438-97-07
Angled screwdriver	50-910-15-07	50-916-15-07

*Screwdriver, size “L”, item no. 25-406-99-07; 25-407-03-04; 25-407-04-04; 25-410-00-07; 25-411-00-07; 50-425-05-07

Instruments for Zurich II Distraction System 1.0 mm and 1.5 mm Micro

1.0 mm Micro

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

Lindorf
25-435-10-07
16 cm / 6 ¼"
Plate-holding instrument

1.5 mm Micro

25-441-16-07
18 cm / 7"
Plate-holding forceps

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

Icon explanations

1.0 mm

1.5 mm

TC GOLD TC Instruments with hard-metal inserts

For both sizes

25-486-13-07
13 cm / 5"
Modeling pliers
2 items recommended

TC GOLD

51-400-03-07
15.5 cm / 6"
Body holding forceps

51-400-02-07
18 cm / 7"
Cutter

51-400-04-07
18 cm / 7"
Activator
measuring device

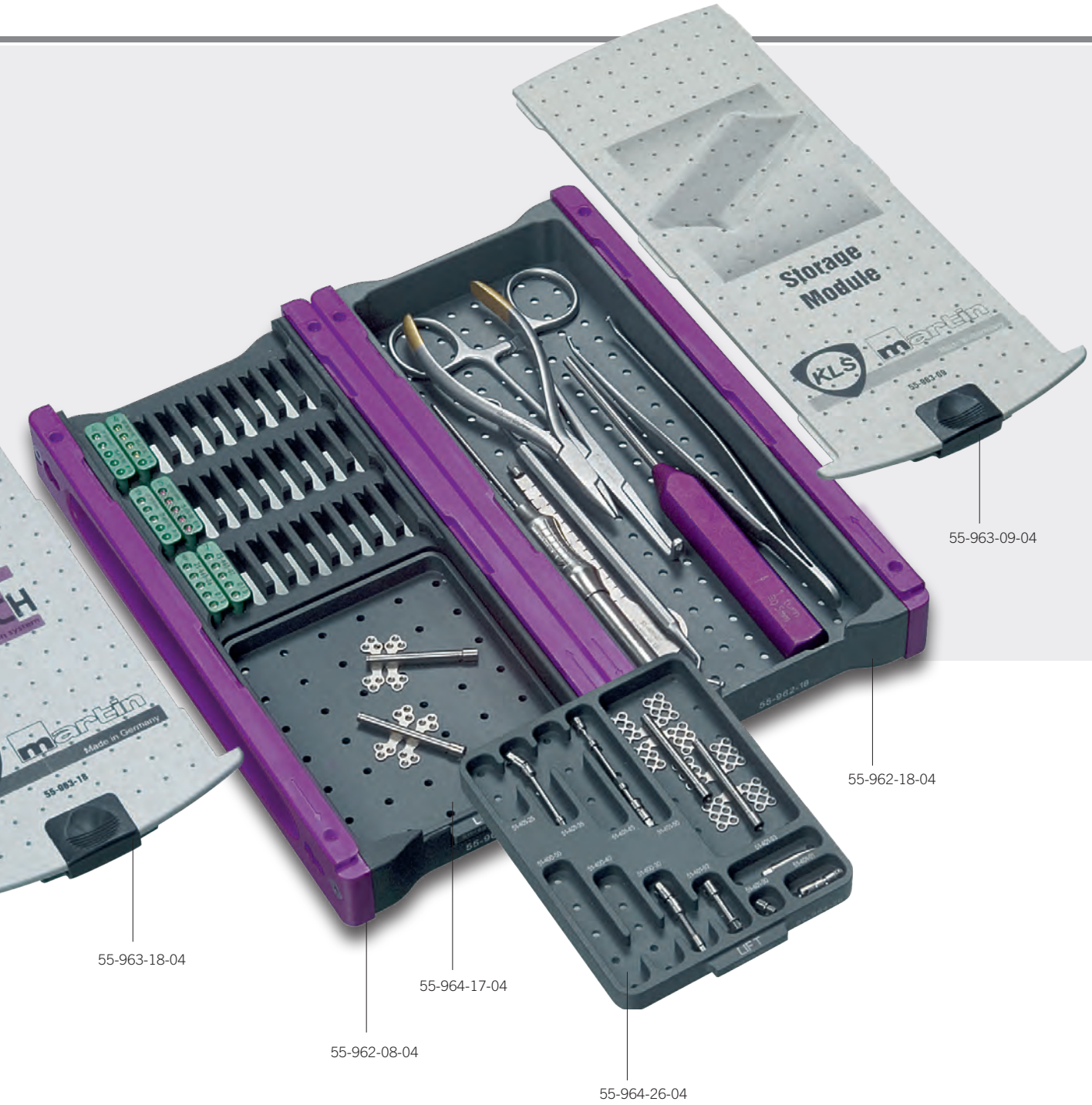
51-400-01-07
15.5 cm / 6"
Activation arm
disconnection forceps

Zurich II Distraction System
Storage Module

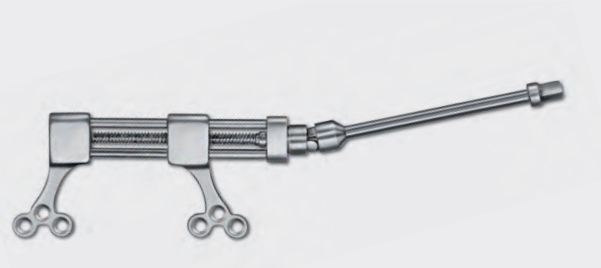
Storage Module

This storage proposal offers yourself enough room to integrate the most important application tools.

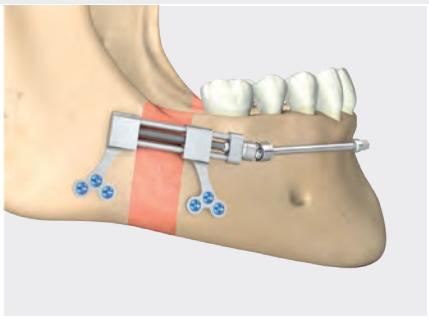
	Item No.
Basic module, purple	55-962-08-04
Insert, universal	55-964-17-04
Insert for activation arms	55-964-26-04
Lid for Zurich II distraction module	55-963-18-04
Storage module, purple	55-962-18-04
Lid for storage module	55-963-09-04


Storage Module
KLS
martin
55-963-09
Made in Germany
55-963-09-04
55-962-18-04
55-963-18-04
55-964-17-04
55-962-08-04
55-964-26-04

Unidirectional Mandibular Distraction



Horizontal Distractor
1:1 scale

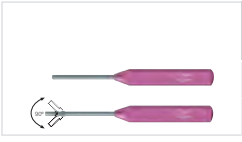


Horizontal Distractor

- Low-profile distractors
- Use for mandibular body
- Symmetrical design – no right or left versions
- Fixation optionally with the screw holes downwards or upwards (for fixation in the oblique line)
- Cardanic activators offer maximum flexibility for intraoral activation.
- Activation arm is already included.

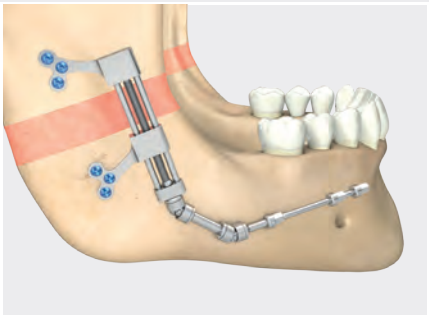
Horizontal Distractors

Distractors	Item No.
10 mm	51-500-10-09
15 mm	51-500-15-09
20 mm	51-500-20-09



1 turn = 0.5 mm distraction length Recommended patient screwdrivers:	
Straight	51-500-90-07
Angled	51-505-90-07

Ramus Distractor
1:1 scale

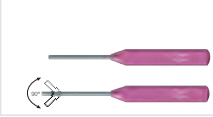


Ramus Distractor

- Low-profile distractors
- Use for ascending ramus
- Symmetrical design – no right or left versions
- Fixation optionally with the screw holes downwards or upwards (for fixation in the oblique line)
- Cardanic activators offer maximum flexibility for intraoral activation.
- Activation arm is already included.

Ramus Distractors

Distractors	Item No.
15 mm	51-510-15-09
20 mm	51-510-20-09
25 mm	51-510-25-09

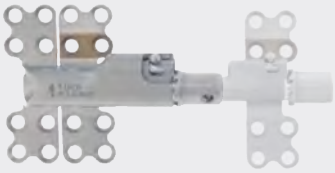


1 turn = 0.5 mm distraction length Recommended patient screwdrivers:	
Straight	51-500-90-07
Angled	51-505-90-07

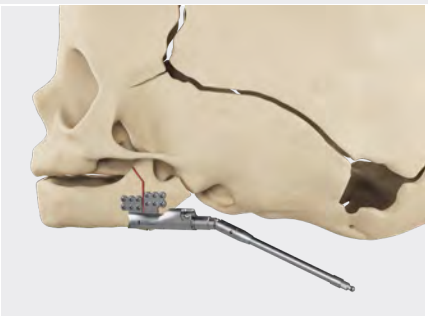
Unidirectional Mandibular Distraction

30 mm, 51-526-30-09
Standard Version
1:1 scale

30 mm, 51-528-30-09
Micro Version, for patients
under 12 months of age
1:1 scale



20 mm, 51-351-20-09
Standard Version
1:1 scale



HyperDrive Mandibular Distractor

The HyperDrive Mandibular Distractor is designed for mandibular distraction in the neonatal and infant population and thus available in three different versions. It is truly a one-stop-shop for mandibular distraction needs.

The HyperDrive body contains a very compact distraction mechanism that allows for greater distraction capability per mm of initial length. The 30 mm HyperDrive is shorter in initial length than a standard 20 mm device. This limits lateral dissection and is ideal for patients in need of a large movement without much initial space to work in. The enclosed gearing limits soft tissue interference.

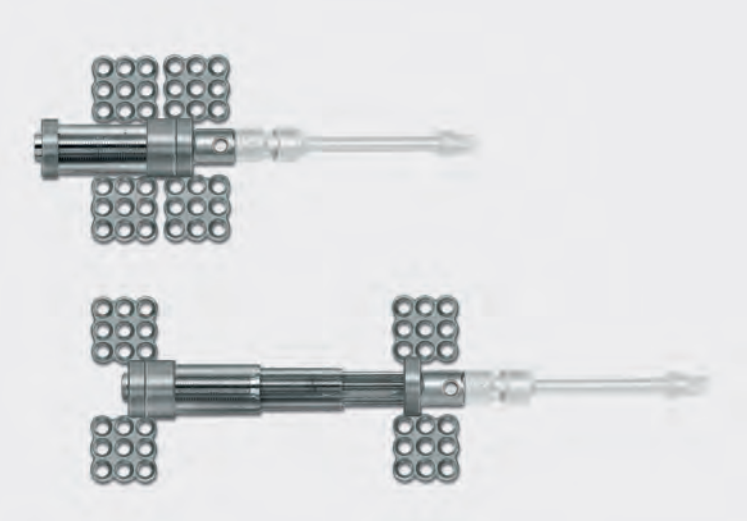
HyperDrive Mandibular Distractors

	Distractors w/o activation arms	Screws	Item No.	Item No. STERILE R
	30 mm (Standard)	1.5 Micro	51-526-30-09	51-526-30-71
	30 mm (Micro)	1.0 Micro	51-528-30-09	51-528-30-71
	20 mm (Standard)*	1.5 Micro	51-351-20-09	51-351-20-71

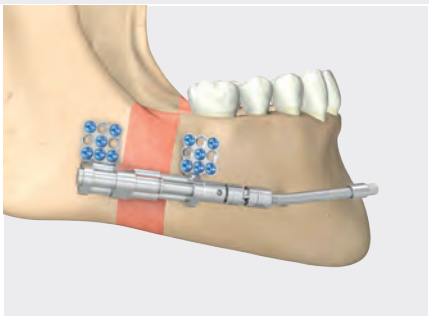
Activation arms see page 8-11

	1 turn = 1.0 mm distraction ength Recommended patient screwdrivers:	
	Straight	51-510-90-07

* Note:
The etched stripe across the footplate of 51-351-20-XX denotes holes where the user should not place raised profile screws.



Mandibular Telescoping Distractor, 30 mm
1:1 scale

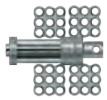


Mandibular Telescoping Distractor

Using intraoral distractors for the therapy of serious mandibular micrognathias or asymmetries poses the basic problem of how to accommodate the relatively large spindle of the distractor in the patient's mouth.

The telescopic mandibular distractor provides the solution. Just like a car antenna, this distractor extends continuously in various phases, reaching its full volume only at the end of the distraction process.

Mandibular Telescoping Distractors

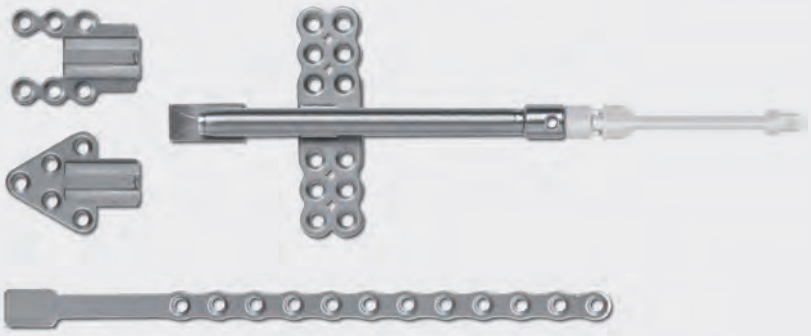


Distractors w/o activation arms	Item No.
20 mm	51-350-20-09
30 mm	51-350-30-09

Activation arms see page 8-11

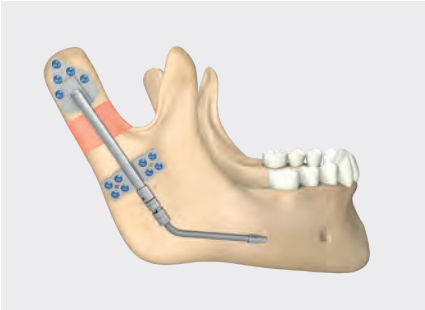
1 turn = 0.35 mm distraction length Recommended patient screwdrivers:	
Straight	51-555-85-07
Angled	51-555-95-07

Unidirectional Mandibular Distraction

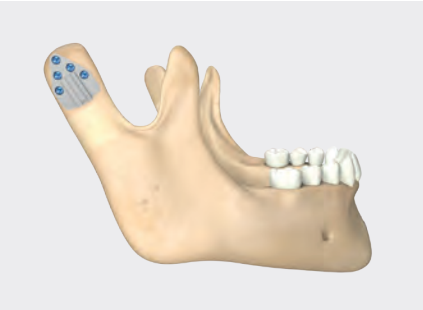


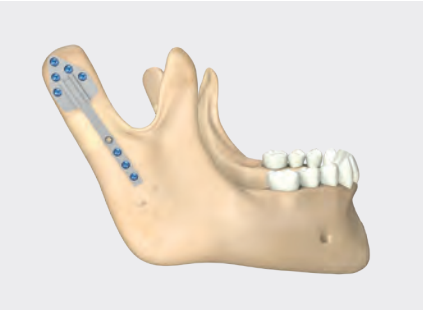
Consolidation plate

Ramus Transport Distractor
1:1 scale



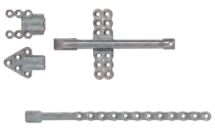
Ramus Transport Distractors





Optionally: Use of the consolidation plate

Ramus Transport Distractors



Distractors w/o activation arms	Item No.
End-driven	
20 mm	51-421-20-09
25 mm	51-421-25-09
30 mm	51-421-30-09

Activation arms see page 8-11

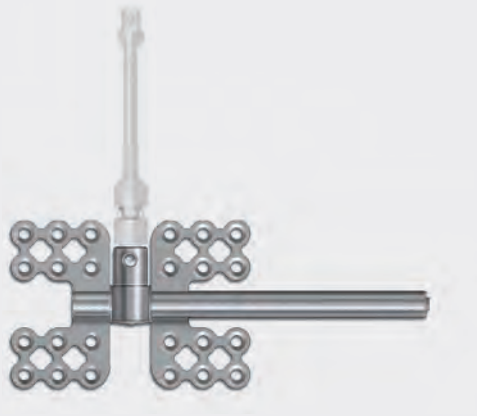
To order separately	
Consolidation plate	51-422-12-09

1 turn = 0.5 mm distraction length Recommended patient screwdrivers:	
Straight	51-500-90-07

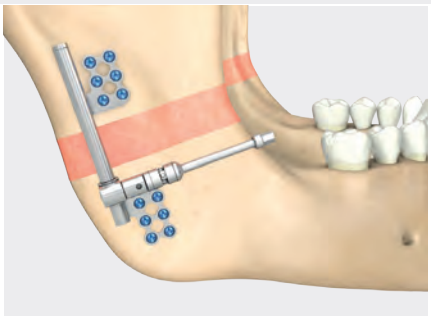
The Ramus Transport Distractor has a completely symmetrical design and therefore can be used on both sides. Thanks to the availability and modular use of activators, together with the two alternative posterior attachments provided, the surgeon can respond flexibly and individually to any anatomical challenge.

A special retention plate (51-422-12-09) is optionally available for increased patient convenience during the consolidation phase.

In case of using the retention plate, the distractor is detached from the posterior plate and removed. The retention plate is then attached from the front (caudally) and firmly locked in place. The posterior plate remains firmly connected to the condyle
at any time.



Right Angle Driven (RAD) Distractor
1:1 scale

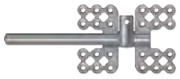


Intraoral fixation of a distractor with 90° activation

Distraction of the ascending ramus makes special demands on intraoral distractors. The surgeon normally prefers intraoral activation in these cases as well, but this is especially hard to realize here because space is scarce.

Due to their offset activator providing 90-degree access, these distractors offer excellent support in this situation, facilitating intraoral activation a great deal. They are always fixed in place with 1.5-mm micro screws. One screwdriver turn is equivalent to a distraction length of 0.1 mm.

Right Angle Driven (RAD) Distractors

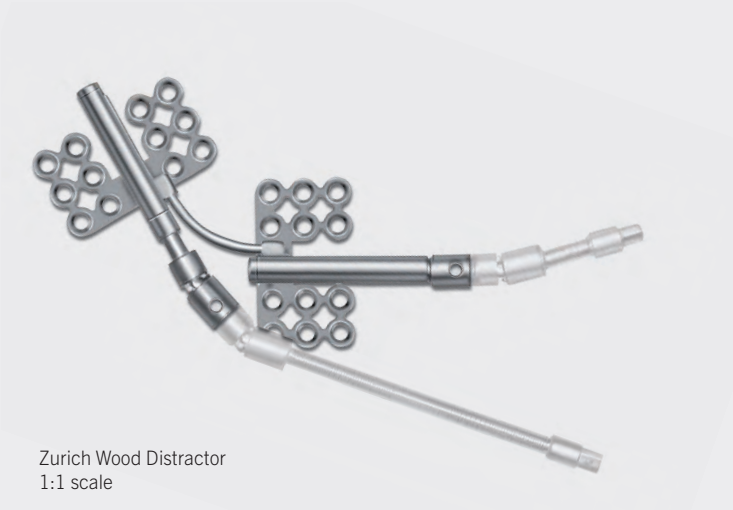


Distractors w/o activation arms	Item No.
20 mm, left	51-612-20-09
25 mm, left	51-612-25-09
20 mm, right	51-613-20-09
25 mm, right	51-613-25-09

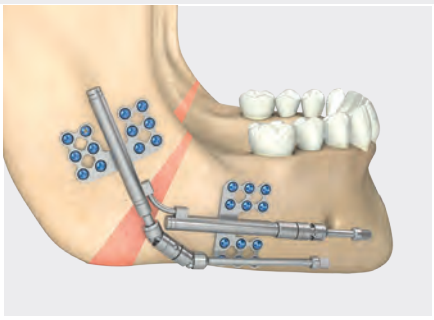
Activation arms see page 8-11

1 turn = 0.1 mm distraction length Recommended patient screwdrivers:	
Straight	51-560-90-07

Mandibular Distraction



Zurich Wood Distractor
1:1 scale



Zurich Wood distractors require only one osteotomy line to be performed in the mandibular angle.

Mandibular micrognathias frequently affect both the mandibular body and the ascending ramus. Bidirectional distractors offer surgeons an opportunity to treat both sectors in a targeted but independent way.

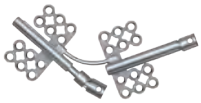
As opinions differ with regard to the question whether single or double osteotomy is indicated in the mandibular angle, the KLS Martin range of distractors offers solutions that satisfy the demands of both parties.

Zurich Wood distractors are a combination of two Zurich distractors. Their design reflects a very frequent type of mandibular micrognathias and asymmetries in which both the mandibular body and the ascending ramus are affected.

However, the entire range of activators contained in the Zurich II distractor line can be used in addition to supplement or modify the two activators as required.

Zurich Wood distractors require only one osteotomy line to be performed in the mandibular angle region.

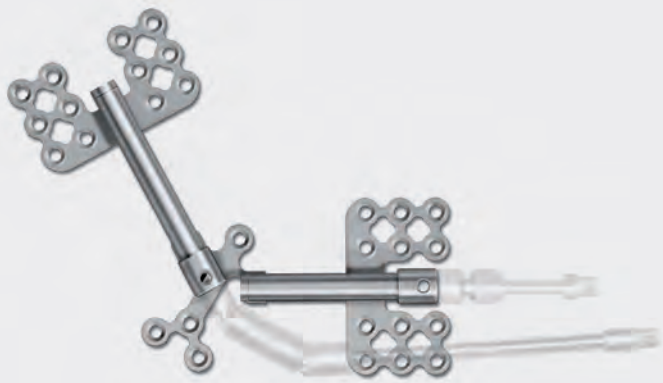
Zurich Wood Distractors



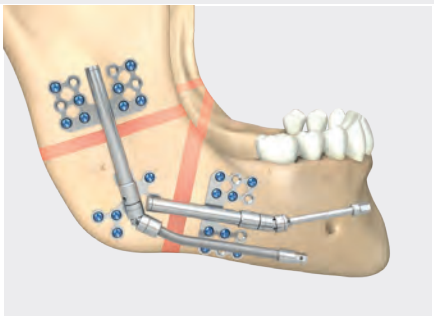
Distractors w/o activation arms	Item No.
20 x 20 mm, left	51-300-20-09
20 x 20 mm, right	51-301-20-09

Activation arms see page 8-11

1 turn = 0.5 mm distraction length Recommended patient screwdrivers:	
straight	51-500-90-07



Zurich Bidirectional Distractor
1:1 scale



Distractor fitted to the mandible.
The two osteotomies are marked.

By means of a double osteotomy, the gonial angle will be clearly identified and formed. Individual bone formation of both, the ascending ramus and the mandibular body are guaranteed applying the two different activation spindles.

Zurich Bidirectional Distractors

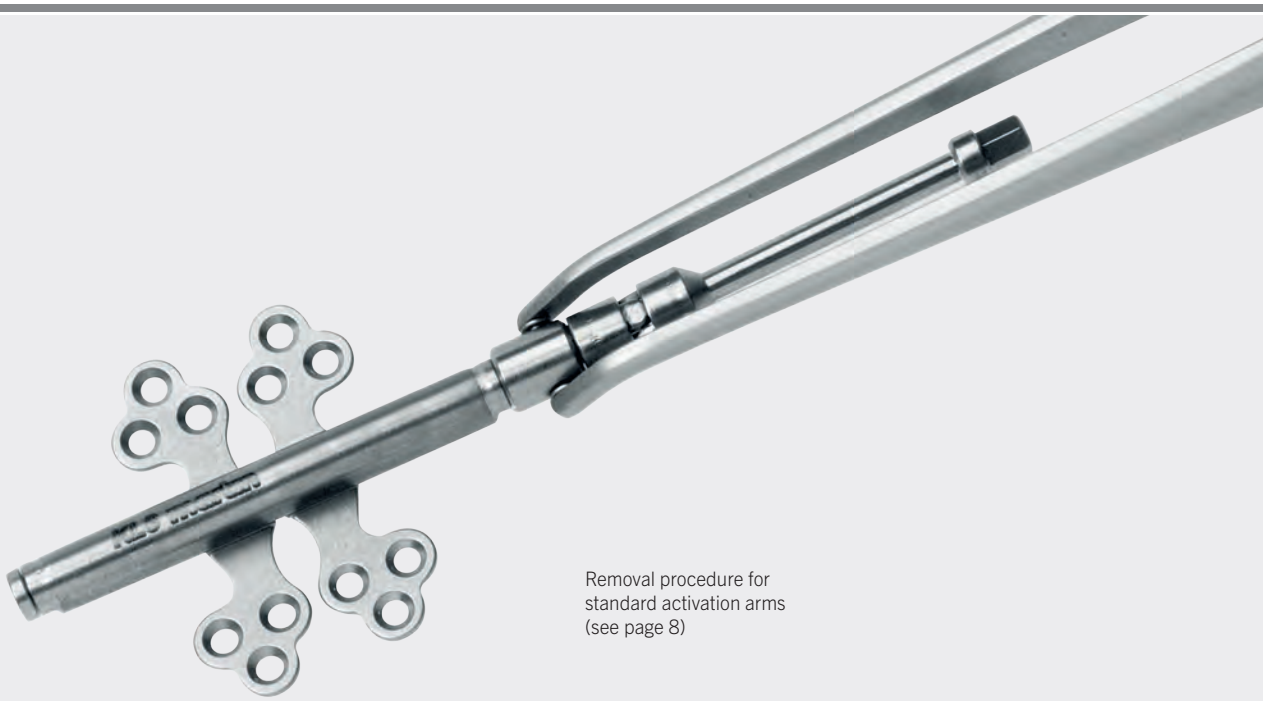
Distractors w/o activation arms	Item No.
15 x 20 mm, left	51-310-20-09
15 x 20 mm, right	51-311-20-09

Activation arms see page 8-11

1 turn = 0.5 mm distraction length Recommended patient screwdrivers:	
Straight	51-500-90-07

Useful tips

- Select the appropriate device and activation arm. A stereolithographic (STL) model may be very helpful to determine the exact anatomical conditions and to select the right distractor. Specific STL models, based on your CT scan, can be ordered at KLS Martin Group.
- Make a mucosal or extra-oral incision. Then elevate the periosteum to give good access. Place the distractor in the desired position and mark the osteotomy site.
- Applying the activation arm measuring device 51-400-04-07 the accurate length of the activation arm can be determined. The distractor can be adjusted using the cutting plier 51-400-02-07.
- A firm anchorage according to the desired distraction vector applying at least three 1.0- or 1.5-mm micro screws on each side of the osteotomy line is recommended.
- Bend the micro plates as necessary to ensure good bone contact establishing a stable distraction vector. Caution: Take extreme care to protect the welding zone during bending procedure. Place one plate bender 25-486-13-07 next to the weld and use the other bender to modify the plate.
- The KLS Martin measuring device 51-400-04-07 is a good tool to confirm the distraction vector and the length of the activator. If performing bilateral distraction, ensure that both vectors are parallel to each other.
- Remove the device and perform a complete osteotomy taking care about the anatomical situation of the alveolar nerve. Then refix the distractor with 1.5- mm micro screws, 4 to 7 mm in length.
- Connect the selected activation arm to the distraction device. This can also be done prior to the surgery. Caution: Take care to ensure that the ball on the arm interlocks with the distractor body.
- Confirm device function intra-operatively by activating the device. Then return to starting position and suture the wound.



Removal procedure for
standard activation arms
(see page 8)

Latency Phase

- A latency phase of 3-7 days is recommended, based on patient's age, health status, and surgeon's treatment plan.
- After the desired latency period, distraction begins at a standard rate of 1 mm per day (usually 2 turns of 360°).

Activation arm removal of conventional activators (page 8-11)

- Activation arm can be removed after completion of distraction phase. This can be done in the O.R. or the office, depending on the access.
- Expose the activator and by using the forceps 51-400-01-07, depress the ball at the base of the activation arm and pull off the activation arm.

Distraction Device Removal

Remove distractor according to the surgical treatment protocol, approximately 8-12 weeks, based on patient's age, actual lengthening and any other therapeutic considerations.

Please note:

This brochure does not replace the user manual. The instructions will accompany the product and must be considered before use.

CMF Surgery

SonicWeld Rx®

Resorbable implants for use in craniomaxillofacial osteosynthesis

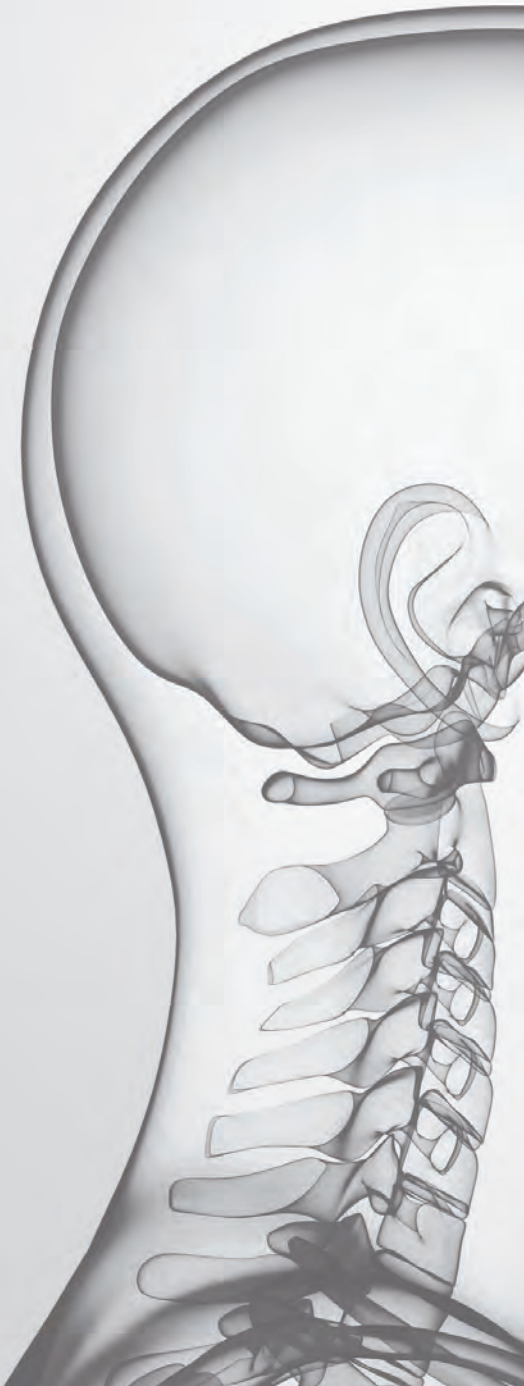
- Resorb x®
- Resorb xG

It is the face that 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 craniofacial surgery with specially designed implant systems that ensure optimum satisfaction for both surgeon and patient. Together with renowned users we translate new ideas into innovative products and are constantly enhancing them.

Our range of products includes everything necessary for modern craniofacial surgery. We not only set standards but we also go beyond to take advantage of modern technology in the development of solutions customized for the individual patient.

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



* © Kurt Haberstich (*1948)

Distractors

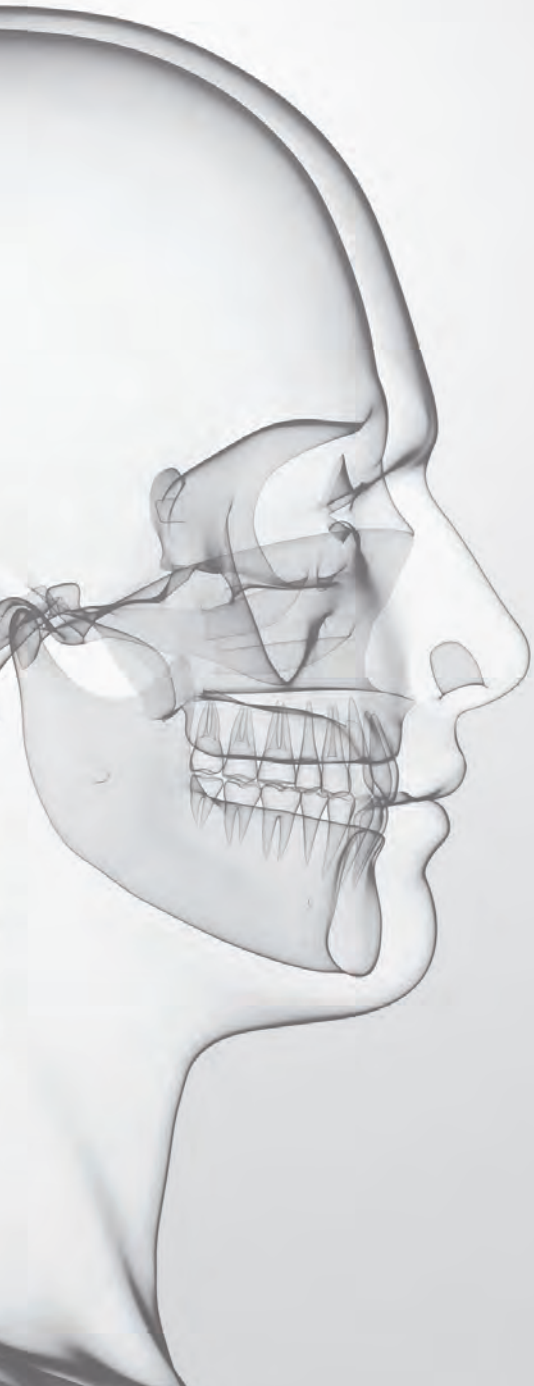
Devices for use in correction of malformations

- Cranial distraction
- Midface distraction
- Mandibular distraction

Individual Patient Solutions

Patient-specific solutions for use in craniomaxillofacial surgery

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



LevelOne Fixation

Titanium implants and instruments for use in craniomaxillofacial osteosynthesis

- Traumatology
- Reconstruction
- Orthognatic surgery

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CMF

App for CMF products

All important information about the CMF portfolio at one glance.

iOS

Android

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