



Endo-Condyle Unit

Special instruments for the endoscopic restoration of fractures of the temporo-mandibular joint



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

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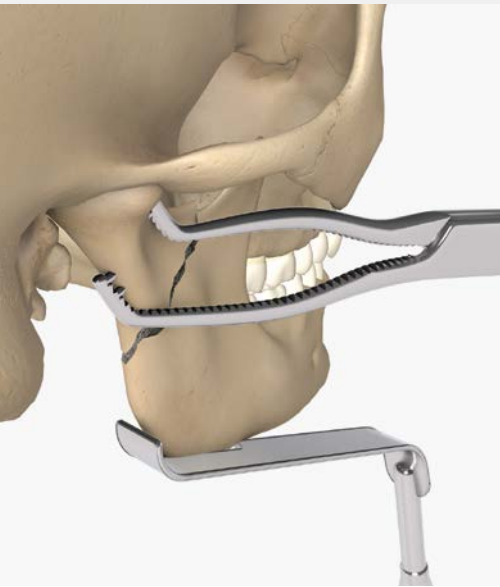
Endo-Condyle Unit

Special instruments for the endoscopic restoration of fractures of the temporo-mandibular joint

Temporomandibular joint surgery has received major impulses during the past 20 years, such as the introduction of functionally stable osteosynthesis techniques such as the mini-plates and the tension screw.

Depending on the localization of the fracture – diacapitular fractures, joint neck fractures and joint base fractures – the developed access methods are being continuously advanced. The support of endoscopes is gaining increased importance in this area. The access techniques are becoming less invasive and at the same time less traumatic for the patient, but more elaborate and more technically demanding for the surgeon. The specially developed instruments of the Endo-Condyle Unit offer a number of options for reduction of the dislocated fragment of the temporo-mandibular joint. In combination with our osteosynthesis plates they round off our portfolio for the restoration of temporo-mandibular fractures.

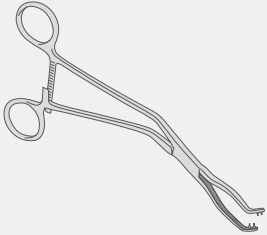
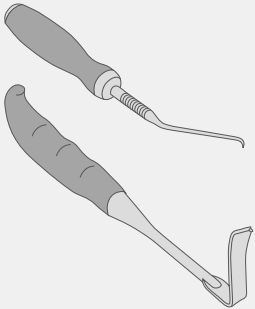
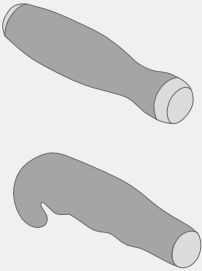
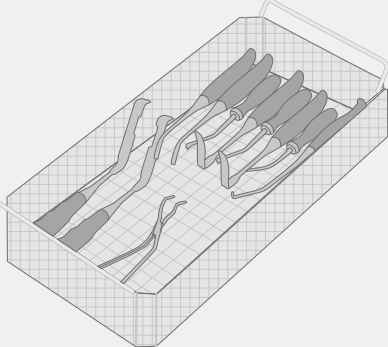
Feature, Function and Benefit



The Endo-Condyle Unit contains a complete selection of instruments for endoscopically supported transoral restoration of fractures of the temporomandibular joint. The 14-part instrument set consists of the following modules:

- Instruments for reduction of the dislocated fragments
 - Retractors
 - Elevators
 - Reduction clamp
- Instruments for stabilizing the ramus
 - Metz hook
- Instruments for extraoral access
 - Surgical spreader

Instruments – Endo-Condyle Unit

	Feature	Benefit
<p>Reduction clamp</p> 	<ul style="list-style-type: none"> Reduction clamp designed to suit the anatomy of the temporo-mandibular joint 	<ul style="list-style-type: none"> Easy, reliable reduction of the fracture
<p>Instrument design</p> 	<ul style="list-style-type: none"> Instruments specifically designed for transoral restoration Wide range of different instruments for reduction 	<ul style="list-style-type: none"> Usage for transoral and extraoral restoration Various options for the best possible response to the actual situation
<p>Silicone handles</p> 	<ul style="list-style-type: none"> Ergonomically shaped silicone handles 	<ul style="list-style-type: none"> Good haptics for easy and safe reduction
<p>Mesh tray</p> 	<ul style="list-style-type: none"> Standard dimensions: <ul style="list-style-type: none"> L 477 x W 251 x H 94 Silicone and PPSU storage elements Lid Instruments clearly arranged in one layer 	<ul style="list-style-type: none"> Made for standardized sterile goods containers Secure storage of all set components without displacement Protected from falling out Clear and fast access

Step by Step to Optimal Care

Fields of Use

The instruments of the Endo-Condyle Unit are used primarily for the reduction of the dislocated fragment in all types of fractures of the temporomandibular joint. They can be used with both transoral and extraoral accesses.



Diacapitular fractures



Fractures of the condyle
of the mandible



Fractures of the base
of the mandible



Surgical Technique

Fracture of the base of the mandible
Restoration with two mini-plates 2.0 mm

Pages 10 - 19





Source: Dr. Dr. Pit Jacob Voss

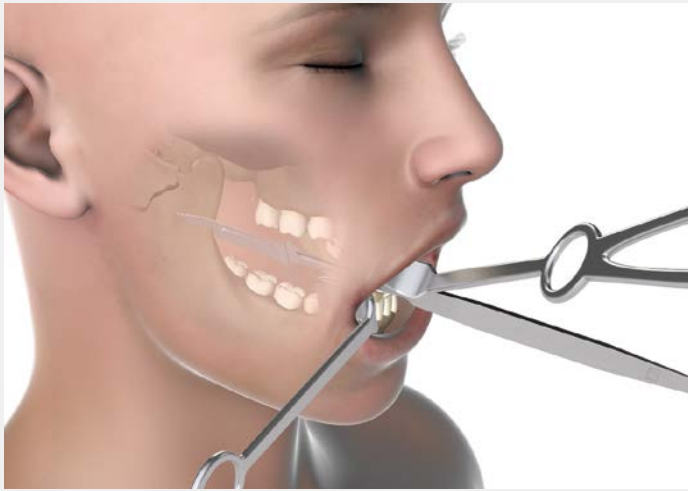
Preoperative planning

The x-ray shows a right-sided fracture of the base of the mandible.



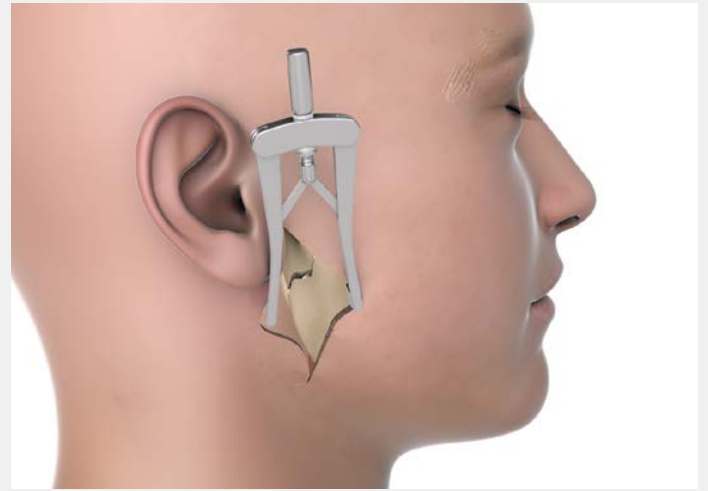
Positioning the patient

The patient is positioned supine on the operating table. Normally, a nasotracheal intubation is implemented.



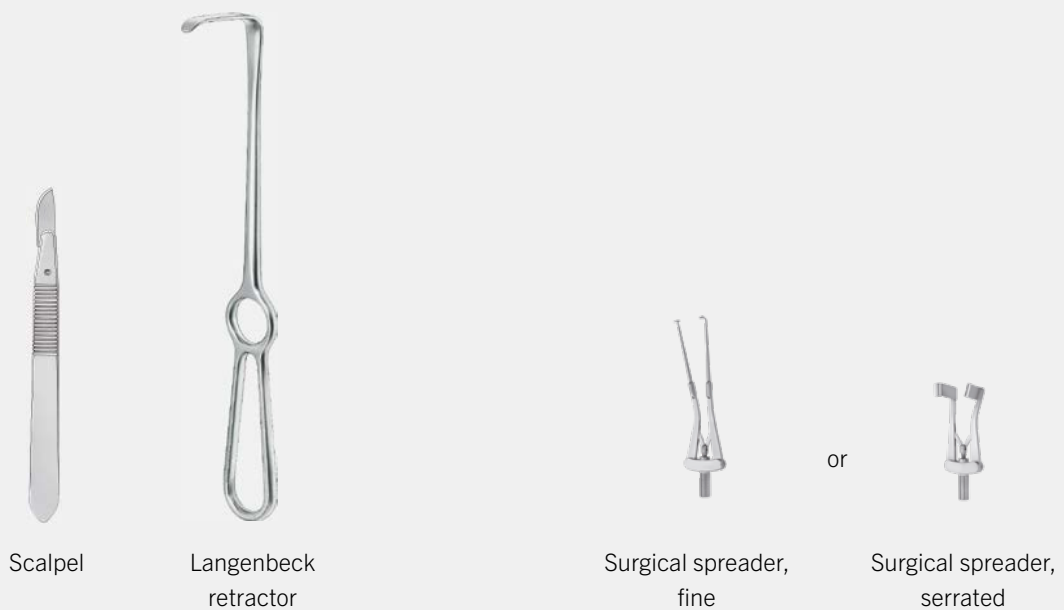
1. Transoral access

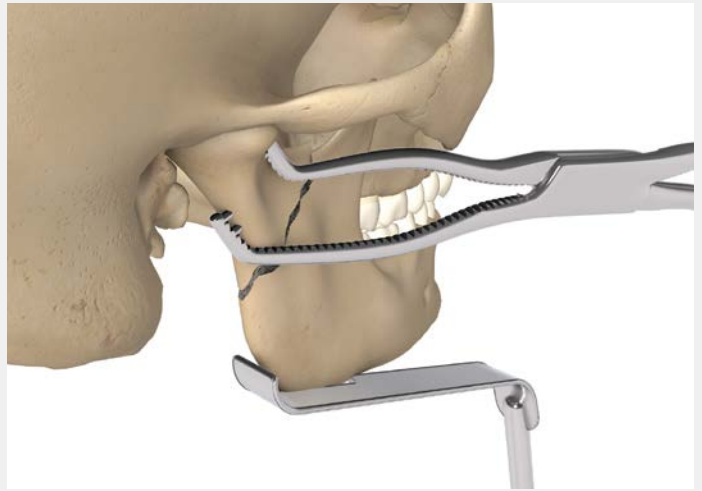
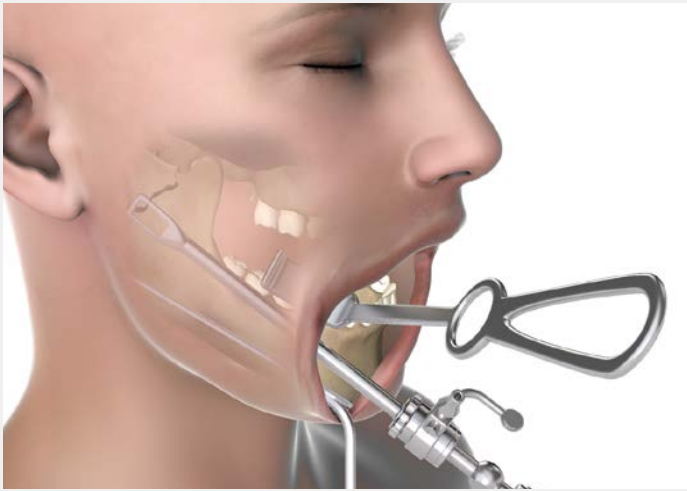
The access to the base of the mandible may be transoral or extraoral. While the extraoral accesses are technically less complex, transoral access means that there will be no visible scars and less danger of damage to the facial nerve. The transoral access is described as the first choice in the following text.



Alternative: extraoral access

As an alternative to the transoral access, an extraoral access (e.g. preauricular or transparotideal) can be selected, which makes it unnecessary to use an endoscope.





2. Exposure of the fracture

An endoscope with a special soft-tissue sheath is used to obtain an overview of the type and position of the fracture. The modified Metz hook is used to stabilize the ramus during reduction.

3. Reduction of the fracture

Various instruments (see below) can be used for the reduction depending on the type and position of the fractured segment.

- Reduction clamp
- Ramus retractors
- Elevators



Detailed view of Metz hook



Langenbeck retractor



Endoscope
(e.g. 30° optics,
Ø = 4 mm, L = 18 cm)
with retractable shaft



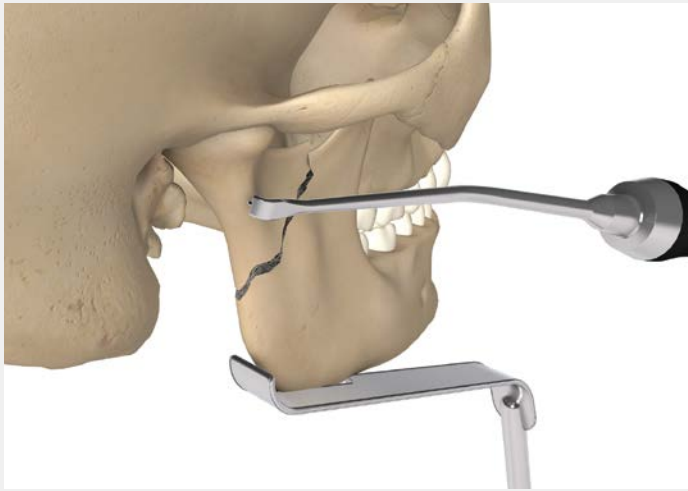
Metz hook,
right



Metz hook,
right

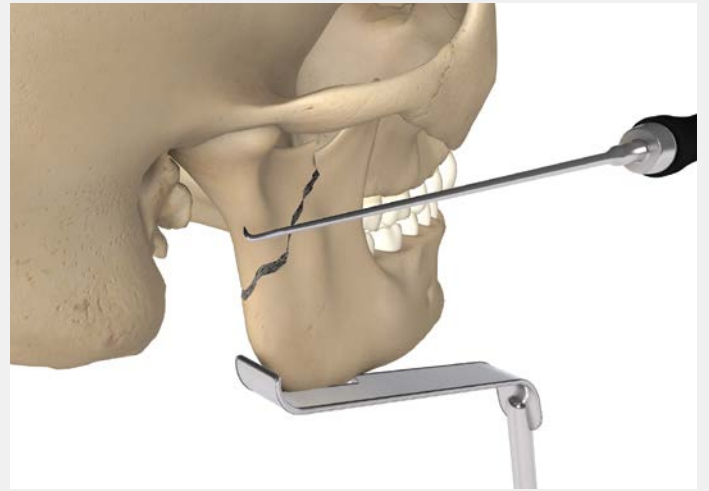


Reduction clamp



3a. Reduction of the fracture

Ramus retractor,
angled, with mandrel



3b. Reduction of the fracture

Ramus retractor,
straight



Ramus retractor,
angled, with mandrel



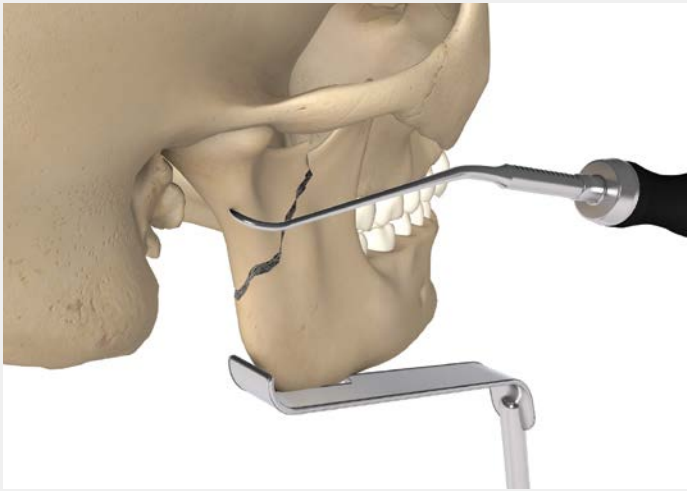
Metz hook,
right



Ramus retractor,
straight



Metz hook,
right



3c. Reduction of the fracture

Ramus retractor,
sharp



3d. Reduction of the fracture

Ramus retractor
with mandrel



Ramus retractor,
sharp

Metz hook,
right



Ramus retractor
with mandrel

Metz hook,
right



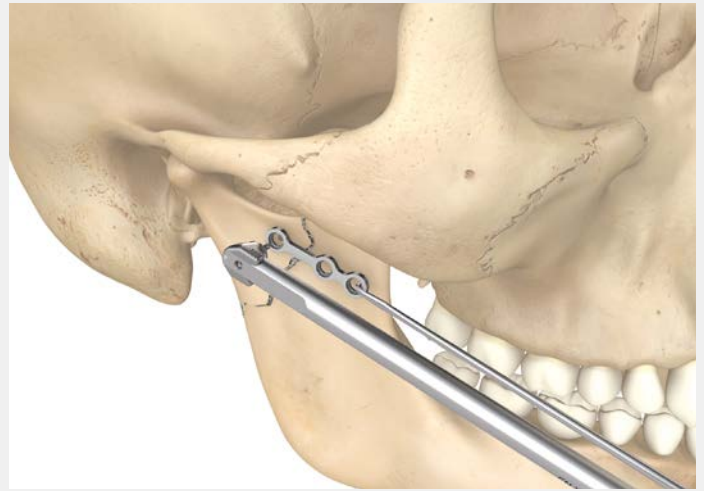
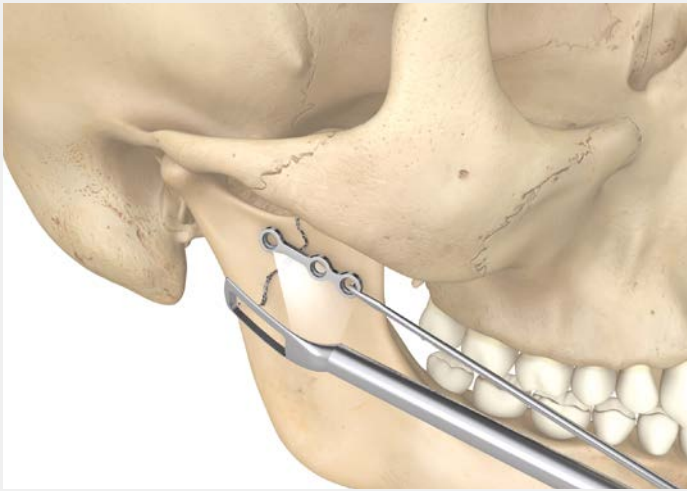
3e. Reduction of the fracture

Elevators
wide and narrow



Elevators
wide or narrow

Metz hook,
right



4. Placement of the superior plate

The position of the reduced fragment and the placement of the cranial plate is checked visually with the endoscope. Use of a shortened 4-hole plate.

5. Predrilling with the Angulus 2

The drill hole for the osteosynthesis screw is generally predrilled in the joint-supporting fragment. Insertion of the anterior-positioned osteosynthesis plate from the dorsal direction has the advantage that the reduction of the fracture at the posterior margin of the ramus can be more easily controlled. The dorsal plate can also be inserted first, depending on the course of the fracture.



Endoscope with retractable shaft



Ramus hook, straight



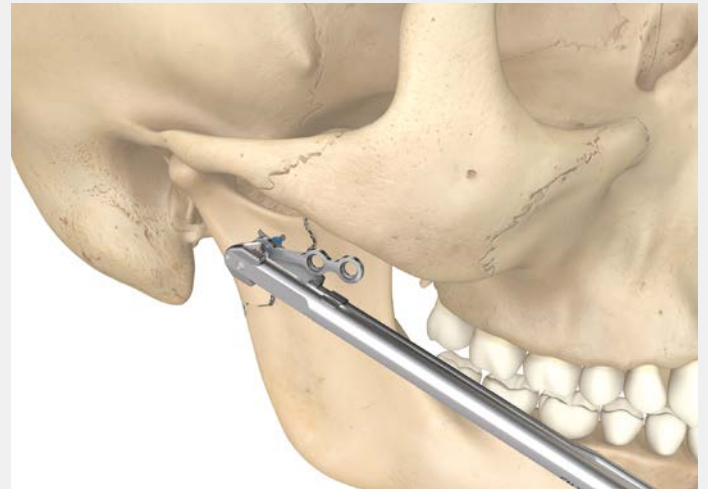
Angled screwdriver Angulus 2 with motor



Twist drill Angulus 2



Ramus hook, straight



6. Clamping screw and plate in the Angulus 2

The screw is picked up and the plate with the corresponding plate hole is clipped to the screw.

Then the screw holding device, which can optionally also be used as plate holding device, is pushed forward to fix the implants.

7. Implantation of the implants

To implant the first screw, the manual drive is first attached to the angled screwdriver. Once the screw has found purchase in the bone, the screw and plate holding device is retracted. Then the implants can be pre-fixated.



Angled screwdriver
Angulus 2
with manual drive



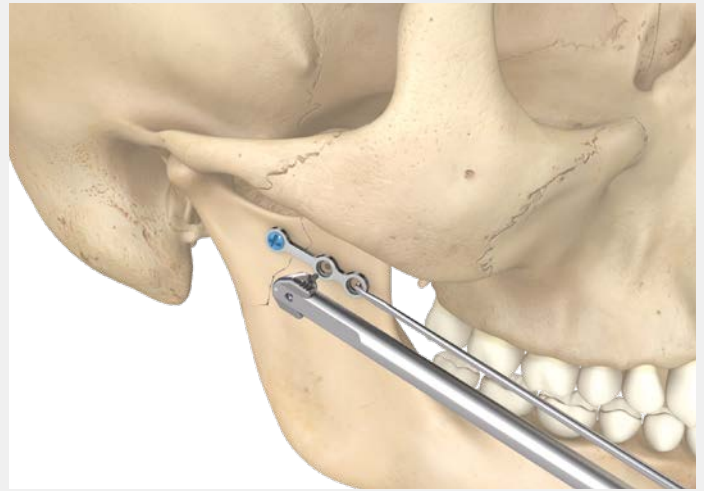
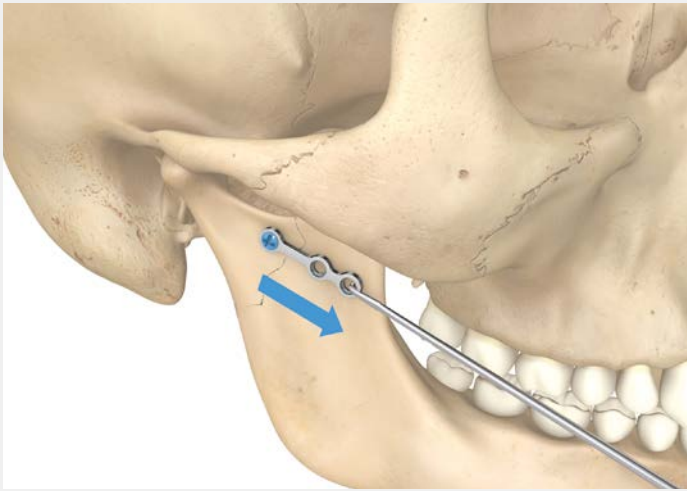
Bit
Angulus 2



Angled screwdriver
Angulus 2
with manual drive



Bit
Angulus 2



8. Final reduction of the condylar process

After reduction of the condylar process the plate can be fixed in position by tension in the anterior direction with the holding instrument.

9. Implantation of the second screw

Once the surgeon is sure of the correct anatomical position of the condyle or the cranial fragment, then this position can be secured successively with further screws in the caudal, intact region of the jaw.



Ramus hook,
straight



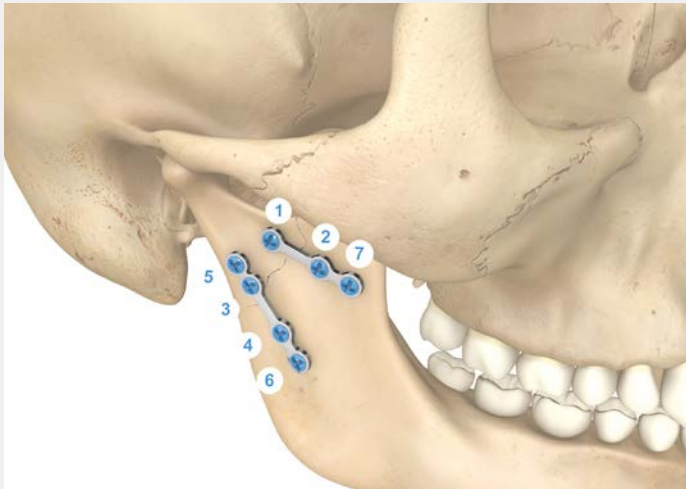
Angled screwdriver
Angulus 2
with motor



Bit
Angulus 2



Ramus hook,
straight



10. Placement of the caudal plate

The caudal plate is placed in the same way as parallel as possible to the posterior margin of the mandible. The screws are placed in the sequence as shown below. Finally, after the plate is inserted successfully, the wound can be closed.



Dr. Dr. Pit Jacob Voss

Postoperative check

The postoperative x-ray image shows the reduced condylar process and the correct position of the two plates.

Instruments **Endo-Condyle Unit**

Stabilization instrument



1/2

38-684-03-07

26 cm/10 5/8"

Metz hook

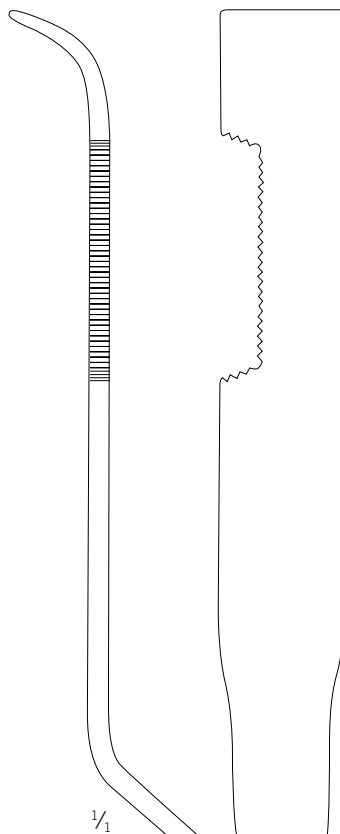
modified, right

St Sic 1



Explanation of icons

- St** Steel
- Sic** Silicone
- 1** Packaging unit



1/2

38-684-04-07

26 cm/10 3/4"

Metz hook
modified, left

St **Sic** **1**

Instruments **Endo-Condyle Unit**

Reduction instruments

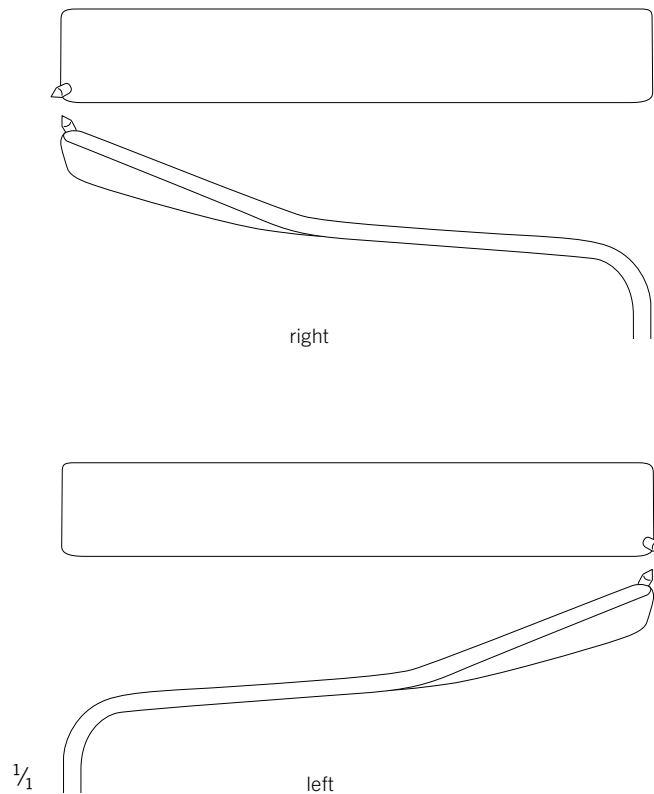


1/2

15-318-01-07 left
15-318-02-07 right

24.5 cm/9 5/8"

Ramus retractor, with mandrel



right

left

1/4



Explanation of icons

- St** Steel
- Sic** Silicone
- 1** Packaging unit



1/2
38-684-01-07
24 cm/9 3/8"
Ramus retractor,
sharp

- St**
- Sic**
- 1**



1/2
38-715-22 07
21.5 cm/8 3/8"
Ramus retractor with mandrel,
angled

- St**
- Sic**
- 1**

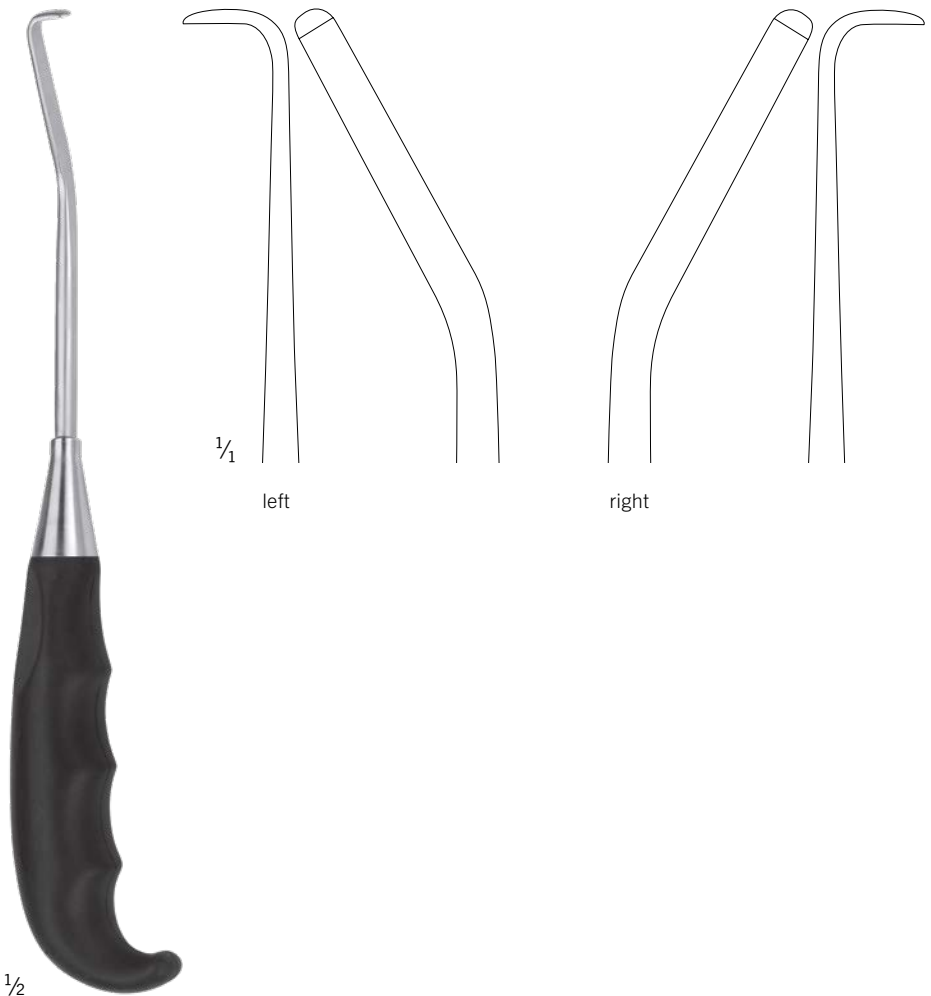


1/2
38-684-02-07
25.5 cm/10"
Ramus retractor,
straight

- St**
- Sic**
- 1**

Instruments **Endo-Condyle Unit**

Reduction instruments



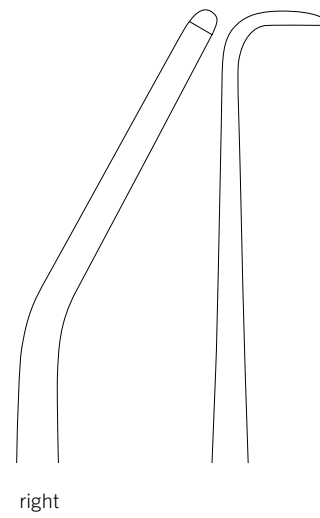
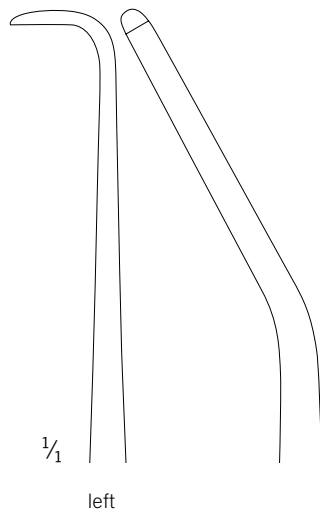
37-544-03-07 left
37-544-04-07 right
25.5 cm/10"
Elevator, wide





Explanation of icons

- St Steel
- Sic Silicone
- 1 Packaging unit



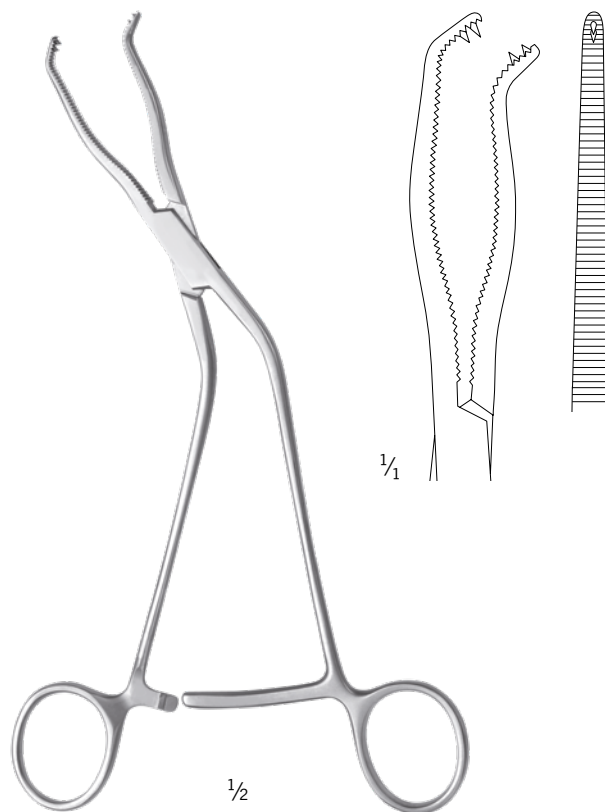
1/2

37-544-05-07 left
37-544-06-07 right
25.5 cm/10"
Elevator, narrow

St Sic 1

Instruments **Endo-Condyle Unit**

Reduction instruments



50-242-12-07

21.5 cm/8 5/8"

Universally applicable reduction clamp
(left + right)

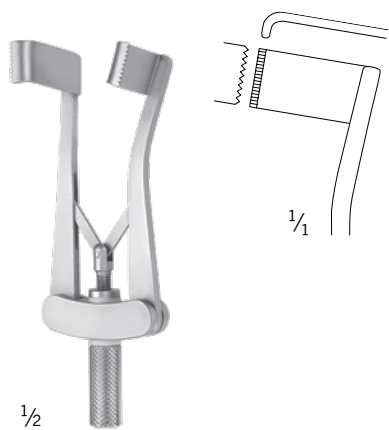
St 1



Explanation of icons

- St** Steel
- 1** Packaging unit

Optional: extraoral access instruments



1/2

15-716-01-07
7 cm/2 7/8"
Surgical spreader,
serrated

St **1**

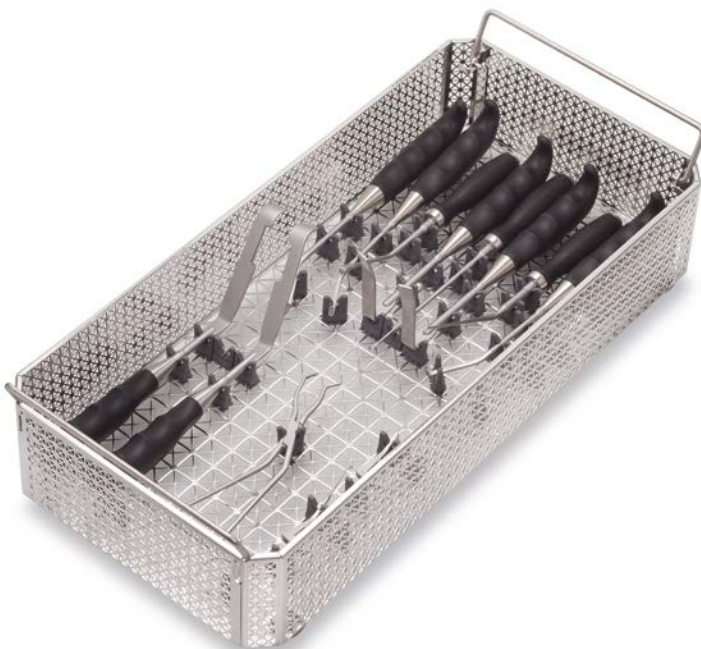


1/2

15-716-03-07
10 cm/3 7/8"
Surgical spreader,
fine

St **1**

Storage **Endo-Condyle Unit**



55-969-69-04

Storage tray with lid,
plastic feet and retainer elements
(without contents)

St 1



Explanation of icons

- St** Steel
- 1** Packaging unit

Endo-Condyle Unit

Recommended set configuration

Metz hook

38-684-03-07	Endo-Condyle Unit, Metz hook, modified, right	1 piece
38-684-04-07	Endo-Condyle Unit, Metz hook, modified, left	1 piece

Retractors

15-318-01-07	Endo-Condyle Unit, ramus retractor with mandrel, left	1 piece
15-318-02-07	Endo-Condyle Unit, ramus retractor with mandrel, right	1 piece
38-684-01-07	Endo-Condyle Unit, ramus hook, sharp	1 piece
38-715-22-07	Endo-Condyle Unit, ramus hook, angled	1 piece
38-684-02-07	Endo-Condyle Unit, ramus hook, straight	1 piece

Elevators

37-544-03-07	Endo-Condyle Unit, elevator, wide, left	1 piece
37-544-04-07	Endo-Condyle Unit, elevator, wide, right	1 piece
37-544-05-07	Endo-Condyle Unit, elevator, narrow, left	1 piece
37-544-06-07	Endo-Condyle Unit, elevator, narrow, right	1 piece

Reduction clamp and surgical spreader

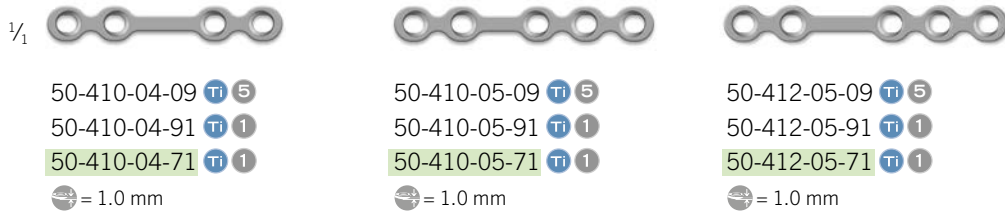
50-242-12-07	Endo-Condyle Unit, reduction clamp	1 piece
15-716-01-07	Endo-Condyle Unit, surgical spreader, serrated	1 piece
15-716-03-07	Endo-Condyle Unit, surgical spreader, fine	1 piece

Storage

55-969-69-04	Endo-Condyle Unit, storage tray	1 piece
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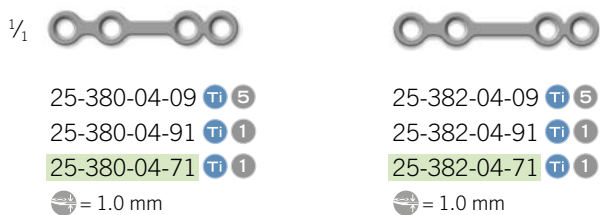
Implants **Endo-Condyle Unit** Condylar fracture plates

Compression plates



for fixing with standard screws (not locking, 2.0 mm)

Magdeburg Condylar fracture plates



for fixing with standard screws (not locking, 2.0 mm)



Explanation of icons

- Pure titanium
- Titanium alloy
- Packaging unit
- Plate profile

STERILE | R Sterile packed implants

Rhomboid 3D
Condylar fracture plates

developed in cooperation with:
Prof. Dr. Dr. G. Lauer, University of Dresden, Germany



25-285-05-09
25-285-05-71

20 x 13 mm
 = 1.0 mm

for fixing with standard screws
(not locking, 2.0/2.3 mm)

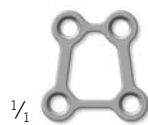


25-283-05-09
25-283-05-71

20 x 13 mm
 = 1.0 mm

for fixing with locking screws (ThreadLock TS, 2.0 /2.3 mm) or
standard screws (not locking, 2.0/2.3 mm)

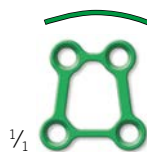
Trapezoid 3D
Condylar fracture plates



25-285-10-91

14 x 14.5 mm
 = 1.0 mm

for fixing with standard screws
(not locking, 2.0/2.3 mm)

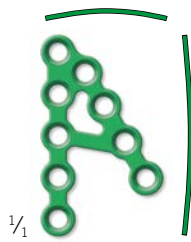


25-283-15-91
25-283-15-71

14 x 14.5 mm
 = 1.0 mm

for fixing with locking screws (ThreadLock TS, 2.0 /2.3 mm)
or standard screws (not locking, 2.0/2.3 mm)

Implants **Endo-Condyle Unit** Condylar fracture plates



25-283-25-91 Ti 1

25-283-25-71 Ti 1

26.5 x 16.1 mm, right

⌀ = 1.0 mm

for fixing with locking screws (ThreadLock TS, 2.0 /2.3 mm)
or standard screws (not locking, 2.0/2.3 mm)



25-283-26-91 Ti 1

25-283-26-71 Ti 1

26.5 x 16.1 mm, left

⌀ = 1.0 mm



25-283-20-91 Ti 1

25-283-20-71 Ti 1

35 x 18.2 mm, right

⌀ = 1.0 mm

for fixing with locking screws (ThreadLock TS, 2.0 /2.3 mm)
or standard screws (not locking, 2.0/2.3 mm)



25-283-21-91 Ti 1




25-283-21-71 Ti 1

35 x 18.2 mm, left

⌀ = 1.0 mm





Explanation of icons

-  Pure titanium
-  Packaging unit
-  Plate profile


STERILE IR Sterile packed implants





1/1

25-288-08-09  


21.4 x 32.5 mm, right

 = 1.0 mm



25-289-08-09  

21.4 x 32.5 mm, left

 = 1.0 mm

for fixing with locking screws (ThreadLock TS, 2.0 /2.3 mm)
or standard screws (not locking, 2.0/2.3 mm)

Additional brochures



LevelOne Fixation
Osteosynthesis 2.0 Mini



LevelOne Fixation
Osteosynthesis 2.3 fracture



LevelOne Fixation
ThreadLock TS



Rhomboidal 3D
Condylar fracture plate



Catalog
General Surgery



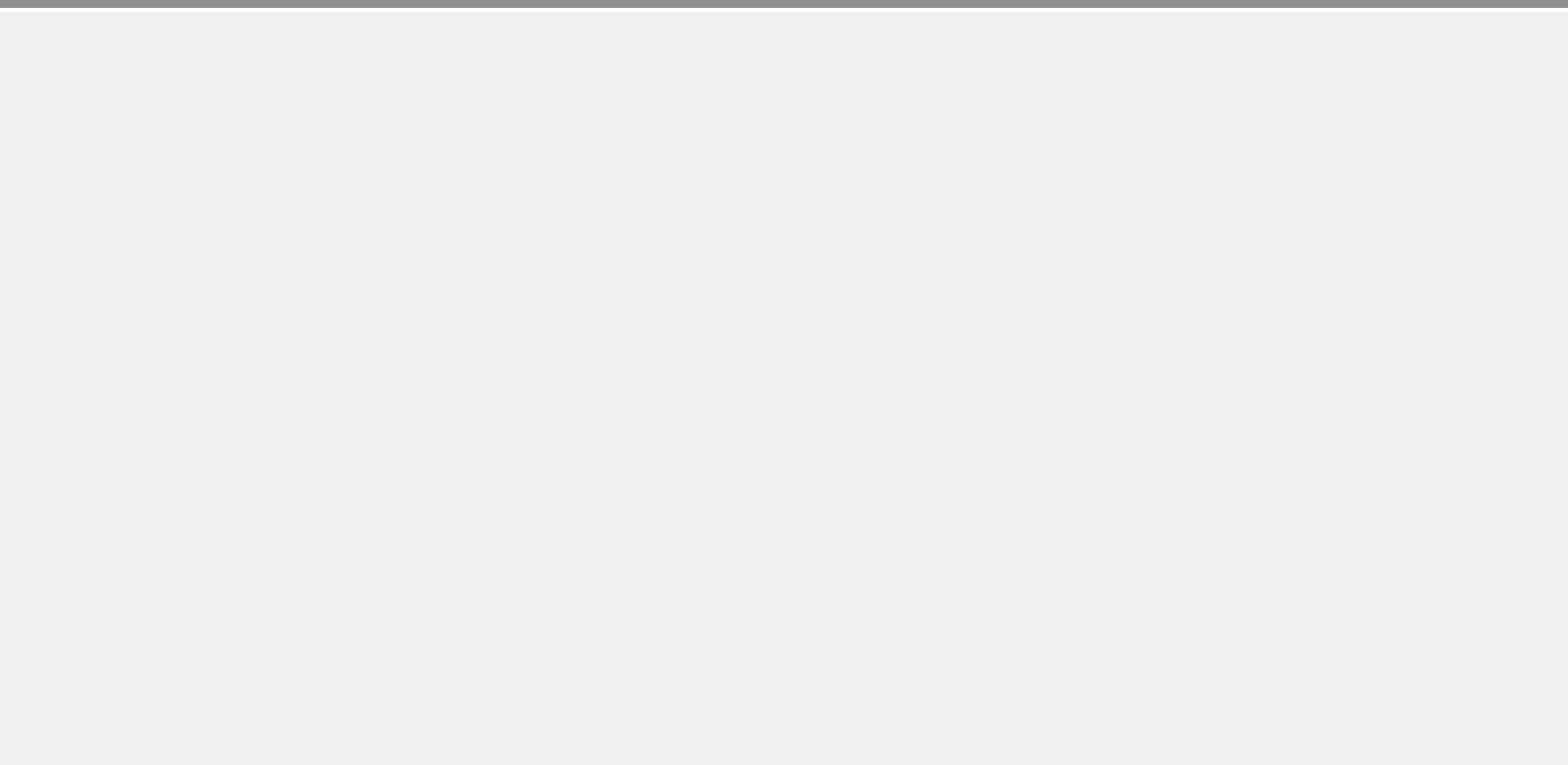
Craniomaxillofacial
Surgery Catalog –
Special Instruments



Angulus 2
angled screwdriver



Instruments for
treatment of condylar
fractures
according to Eckelt and Rasse



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