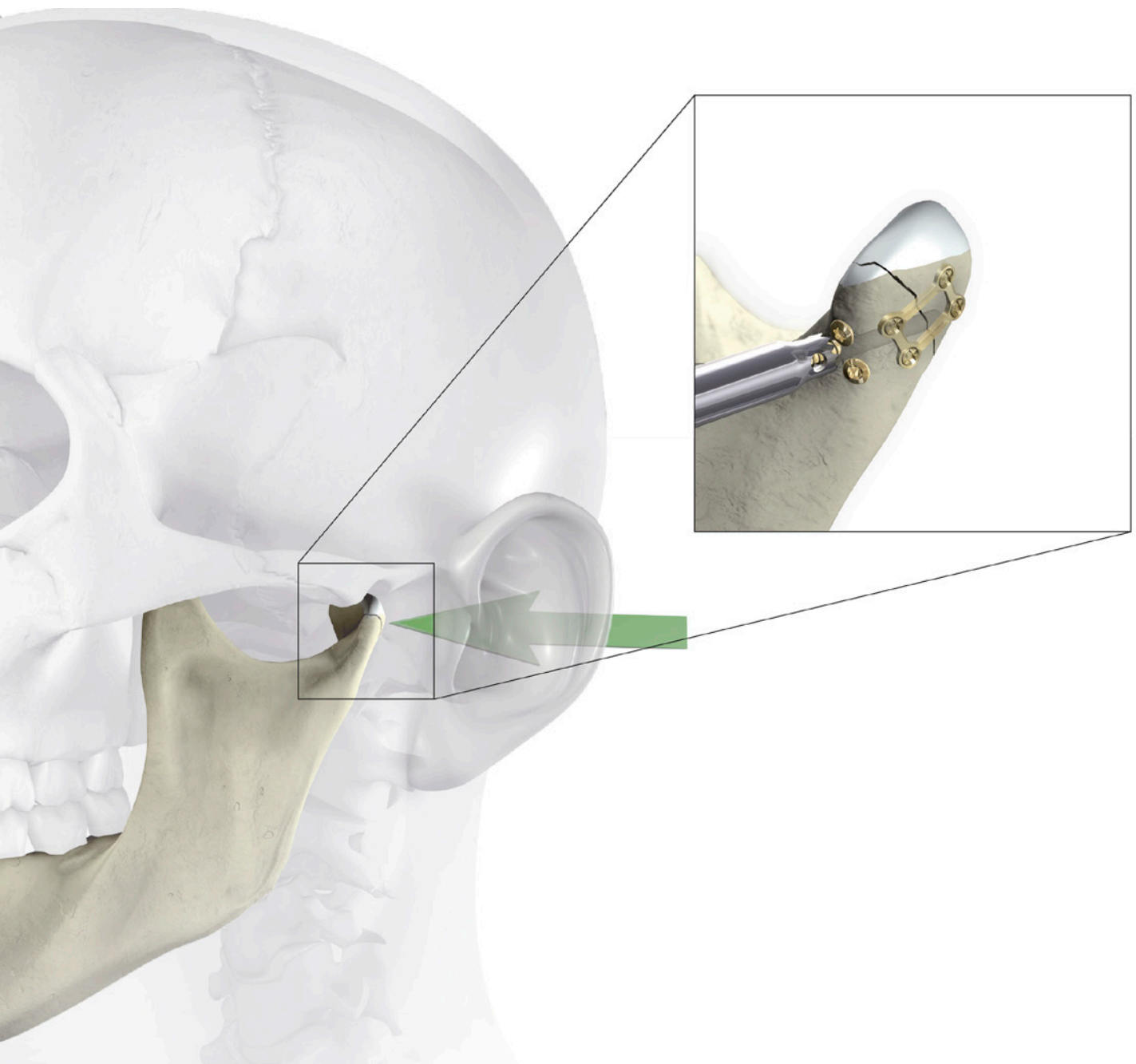


SURGICAL TECHNIQUE

CFS 1.8

# Condylar Head Fracture System



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For further information regarding the MODUS product line visit [www.medartis.com](http://www.medartis.com)

# Introduction

## Product Materials

Product	Material
Plates	Pure titanium, titanium alloy
Screws	Pure titanium, titanium alloy
Instruments	Stainless steel, PEEK, aluminum, titanium, Nitinol
Containers	Stainless steel, aluminum, PEEK, polyphenylsulfone, polyurethane, silicone

## Indications

### MODUS

Maxillofacial fractures, osteotomies and reconstructive procedures

- 1.8 Condylar Head Fracture system
  - stabilization of diacapitular/intracapsular condylar neck and head fractures

## Contraindications

- Pre-existing or suspected infection at or near the implantation site
- Known allergies and/or hypersensitivity to implant materials
- Inferior or insufficient bone quality to securely anchor the implant
- Patients who are incapacitated and/or uncooperative during the treatment phase
- Blocking of growth plates with plates and screws

## Color Coding

System Size	Color Code
0.9	Red
1.2	Red
1.8	Green

### Plates and Screws

Special implant plates and screws have their own color:

Implant plates gold	Fixation plates (fixation)
Implant screws gold	Cortical screws (fixation)

## Possible Combination of Plates and Screws

Plates and screws can be combined within one system size:

### 0.9/1.2 Fixation Plate

- 0.9 Cortical Screws, Cross-Drive
- 1.2 Cortical Screws, Cross-Drive

## Symbols



HexaDrive



cross-drive



# Instrument Application

## General Instrument Application

### Drilling

Color-coded twist drills are available for every MODUS system size.

System Size	Color Code
0.9	Red
1.2	Red
1.8	Green

#### Core Hole Drills

Drills for screws  $\varnothing$  0.9 mm

Dental	Stryker	Drill stop
one red ring	one red ring	
M-3271	M-3221	3 mm

Drill  $\varnothing$  0.6 mm    Drill  $\varnothing$  0.6

Dental	Stryker	Drill stop
one red ring	one red ring	
M-3271	M-3221	3 mm

Drill  $\varnothing$  0.6 mm    Drill  $\varnothing$  0.6

Drills for screws  $\varnothing$  1.2 mm

Dental	Stryker	Drill stop
three red rings	three red rings	
M-3251	M-3331	5 mm

Drill  $\varnothing$  0.9 mm    Drill  $\varnothing$  0.9 mm



M-3221



M-3271



M-3231



M-3281



M-3251



M-3331

## Drilling with Drill Guide

The twist drill for screws  $\varnothing$  1.8 mm must always be guided by the drill guide (M-2820). This protects the surrounding tissue from direct contact with the drill.



### Drills for use in combination with the drill guide

Drills for screws  $\varnothing$  1.8 mm

Dental	Stryker	Drill stop
M-3432	M-3442	25 mm
Drill $\varnothing$ 1.5 mm	Drill $\varnothing$ 1.5 mm	



## Screw Pick-Up

The appropriate screwdriver must be chosen for the corresponding screw diameter. 0.9/ 1.2 mm screws feature a cross-drive connection screwdriver with a tension sleeve for screw retention. 1.8 mm screws feature the patented self-holding technology HexaDrive and do not require a tension sleeve for screw retention.

### 0.9/1.2 mm screws

To remove the screws from the implant container, insert the appropriate screwdriver blade (M-2511) perpendicularly into the screw head of the desired screw and slide the tension sleeve (M-2551) forward to secure the screw.



The screw length is checked with the measuring module. Check the correct screw diameter: The screw can be inserted into the hole of the appropriate screw diameter. The screw will not fit in the hole for the next screw size down.

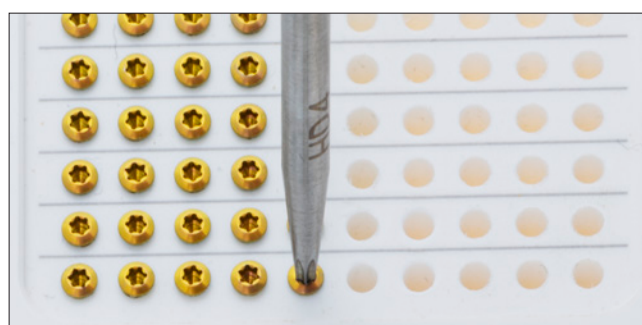


### 1.8 mm screws

To remove the screws from the implant container, insert the appropriately color-coded screwdriver blade perpendicularly into the screw head of the desired screw and pick up the screw with axial pressure.

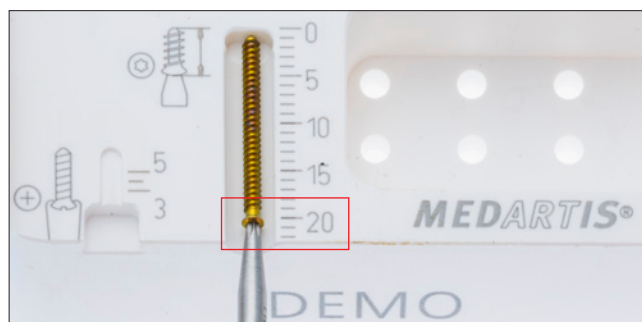
### Caution

Picking up the screw repeatedly may lead to permanent deformation of the self-retaining area of the HexaDrive inside the screw head. Therefore, the screw may no longer be able to be picked up correctly. In this case, a new screw has to be used.



The screw length is checked with the measuring module and read at the end of the screw head.

Check the correct screw diameter: The screw can be inserted into the hole of the appropriate screw diameter. The screw will not fit in the hole for the next screw size down.

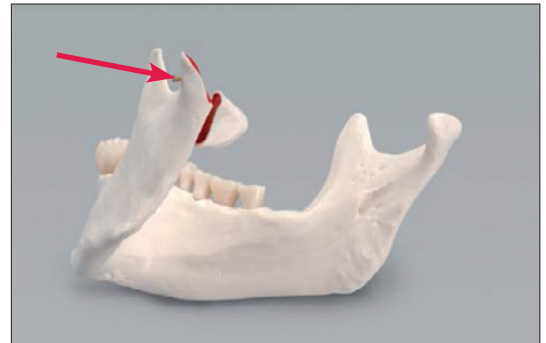


# Surgical Techniques

## CFS 1.8 Condylar Head Fracture System

### 1. Screw placement for retention

The anteriomedially displaced fragment is repositioned under a full relaxation of the patient after visualizing the lower joint space. For an exact distraction of the joint, an auxiliary cortical screw (HexaDrive, self-tapping, Ø 1.8mm, length approximately 9 mm) is inserted into the condylar process while protecting the tissue with the CFS drill guide M-2820.



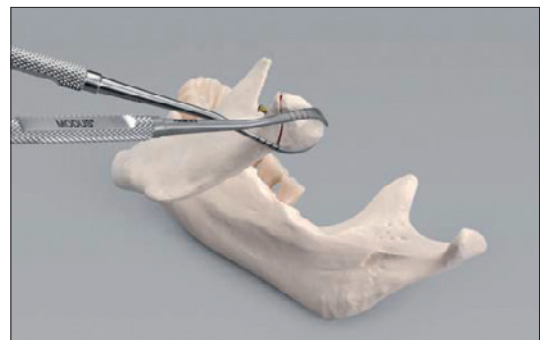
### 2. Placement of Repositioning Hook

The screw head is thereby not countersunk at the level of the bone. It functions as a retention for the repositioning hook (M-2800), which is used for an exact manipulation of the large fragment during repositioning and simultaneously functions as a soft tissue retractor and protection for the facial and auriculotemporal nerves.



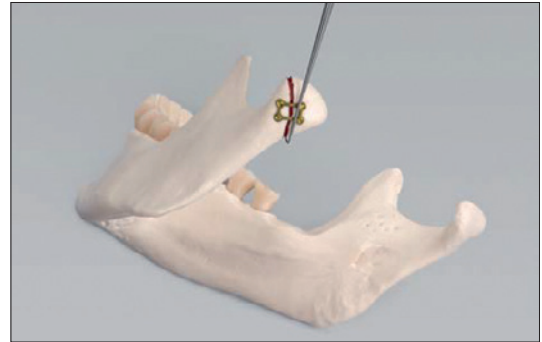
### 3. Small fragment repositioning

The repositioning of the normally medially displaced articular disc, which is part of the small fragment, is achieved together with the condylar head. Using alternating manipulation with the repositioning elevators which have been designed to fit the anatomy of the condylar head, this is conducted in a way to protect the lateral pterygoid muscle. The scale markings of the repositioning elevators allow an orientation of the transverse condylar diameter.



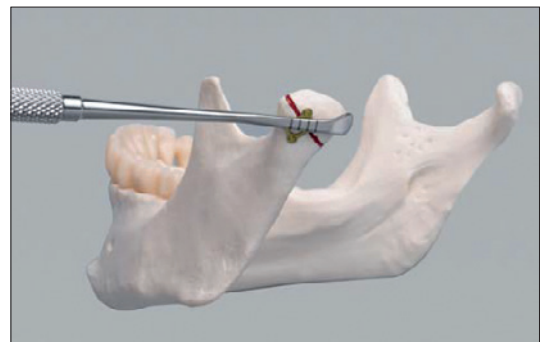
#### 4. Fracture stabilization with grid plate

After a three dimensional position verification of the dorsocaudal fragment (reference cranial and dorsal fracture area), possibly supported by the bone hook (M-2790) (only for the fine corrections), a precisely adapted auxiliary plate (M-4192 – grid plate, 2x2 hole, rectangular), thickness 0.5 mm, with MODUS 0.9 mm screws M-5100.xx, length 4 up to 6 mm, is attached in an anatomically correct position to the dorsal area of the condylar head for a temporary fixation of the fragment.



#### 5. Screw length assessment

Definition of the direction of the axis. Length assessment by means of the corresponding repositioning elevator. Scale marks at 11, 13, 15 and 17 mm.



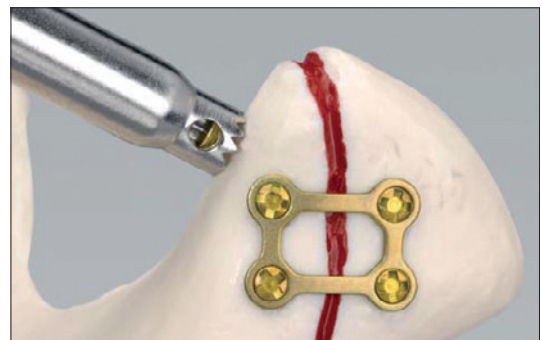
#### 6. Preparation for final osteosynthesis

The final osteosynthesis with – generally three – positioning screws (M-5230.xx – cortical screw  $\varnothing$  1.8mm with HexaDrive 4), which are inserted laterally in the transverse axis direction of the condyle neck, is now performed in an already secured, anatomically correct position. The length of the screw is determined using the scale markings on the repositioning elevators, which functions as tissue protection and abutment in the medial pole area during drilling.



#### 7. Screw placement for final osteosynthesis

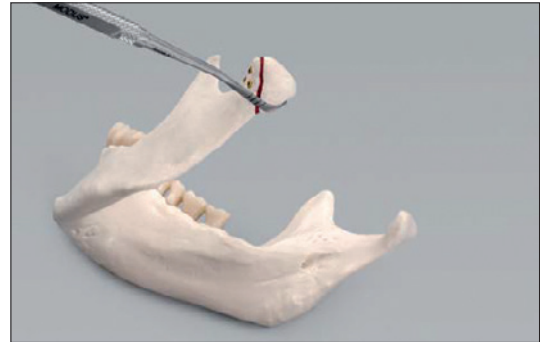
Removal of the drill bushing from the drill guide (M-2820). Insertion of the screw via the tissue protection. Insertion of the screw until the screw head appears in the viewing window. Tightening of the screw at the level of the bone. Generally, the auxiliary plate is removed after the second screw application. If necessary, the auxiliary plate can be left to improve the stability, specifically for multi-fragment fractures of the head.





### 8. Inspection of screw length

An inspection for potential over-instrumentation follows after every screw application using the corresponding Repositioning Elevator. If necessary, a screw can be exchanged to a shorter one without the risk of dislocation.



### 9. Final check

Stable osteosynthesis with three HexaDrive screws in the direction of the axis of the condyle head in a dorsolateral view according to the surgical situs.



# Explantation

## Explantation of Cortical Screws

The choice to remove the implants lies with the operating surgeon. However, an early removal of osteosynthesis material is strongly recommended.

Use the appropriate screwdrivers to remove the screws to explant MODUS implants. It is recommended that the implants are removed by using only original MODUS instruments.

### **Caution**

When removing the screws, ensure that any bone ingrowth in the screw head has been removed, that the screwdriver/screw head connection is aligned in axial direction, and that a sufficient axial force is used between blade and screw.

# Implants, Instruments and Containers

## 0.9 Cortical Screws, Cross-Drive

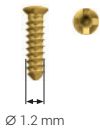
Material: Titanium (ASTM F67)



Length	Art. No.	Piece/Pkg	Art. No.	Piece/Pkg
3 mm	M-5100.03/1	1	M-5100.03	5
4 mm	M-5100.04/1	1	M-5100.04	5
5 mm	M-5100.05/1	1	M-5100.05	5
6 mm	M-5100.06/1	1	M-5100.06	5

## 1.2 Cortical Screws, Cross-Drive

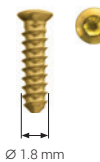
Material: Titanium (ASTM F67)



Length	Art. No.	Piece/Pkg	Art. No.	Piece/Pkg
3 mm	M-5110.03/1	1	M-5110.03	5
4 mm	M-5110.04/1	1	M-5110.04	5
5 mm	M-5110.05/1	1	M-5110.05	5
6 mm	M-5110.06/1	1	M-5110.06	5

## 1.8 Cortical Screws, HexaDrive 4

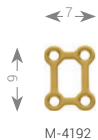
Material: Titanium Alloy (ASTM F136)



Length	Art. No.	Piece/Pkg	Art. No.	Piece/Pkg
9 mm	M-5230.09/1	1	M-5230.09	5
11 mm	M-5230.11/1	1	M-5230.11	5
12 mm	M-5230.12/1	1	M-5230.12	5
13 mm	M-5230.13/1	1	M-5230.13	5
14 mm	M-5230.14/1	1	M-5230.14	5
15 mm	M-5230.15/1	1	M-5230.15	5
16 mm	M-5230.16/1	1	M-5230.16	5
17 mm	M-5230.17/1	1	M-5230.17	5
18 mm	M-5230.18/1	1	M-5230.18	5
19 mm	M-5230.19/1	1	M-5230.19	5
20 mm	M-5230.20/1	1	M-5230.20	5

### 0.9, 1.2 Grid Plate

Material: Titanium (ASTM F67)  
Plate thickness: 0.5 mm



Art. No.	Description	Holes	Piece/Pkg
M-4192	Square	4 (2x2)	1

### Twist Drills Ø 0.6/0.7 mm



M-3271



M-3231



M-3221



M-3281

Art. No.	Ø Drill	System Size	Stop	Length	Shaft End	Piece/Pkg
M-3221	0.6	0.9	3 mm	50 mm	Stryker J-Latch	1
M-3231	0.7	0.9	5 mm	50 mm	Stryker J-Latch	1
M-3271	0.6	0.9	3 mm	37 mm	Dental	1
M-3281	0.7	0.9	5 mm	37 mm	Dental	1

### Twist Drills Ø 0.9 mm



M-3331



M-3251

Art. No.	Ø Drill	System Size	Stop	Length	Shaft End	Piece/Pkg
M-3331	0.9	1.2	5 mm	37 mm	Dental	1
M-3251	0.9	1.2	5 mm	50 mm	Stryker J-Latch	1

### Twist Drills Ø 1.5 mm



M-3432

Scale 1:1



M-3442

Scale 1:1

Art. No.	Ø Drill	System Size	Stop	Length	Shaft End	Piece/Pkg
M-3432	1.5	1.8	25 mm	120 mm	Stryker J-Latch	1
M-3442	1.5	1.8	25 mm	120 mm	Dental	1

### Screwdriver Handles



M-2501



M-2502

Art. No.	System Size	Interface	Length	Piece/Pkg
M-2501	0.9/1.2		90 mm	1
M-2502	1.8		100 mm	1

### Screwdriver Blades



M-2511



M-2662

Art. No.	System Size	Interface	Length	Piece/Pkg
M-2511	0.9/1.2		57 mm	1
M-2662	1.8		69 mm	1

### Tension Sleeve



M-2551

Art. No.	System Size	Description	Length	Piece/Pkg
M-2551	0.9/1.2	Tension Sleeve for M-2511	30 mm	1

## Repositioning Elevators



M-2760



M-2780

Art. No.	Description	Length	Piece/Pkg
M-2760	Slightly Curved	197 mm	1
M-2780	Strongly Curved	196 mm	1

## Bone Hook



Art. No.	Description	Length	Piece/Pkg
M-2790		145 mm	1

## Repositioning Hook



Art. No.	Description	Length	Piece/Pkg
M-2800		210 mm	1

## Drill and Screw Guide



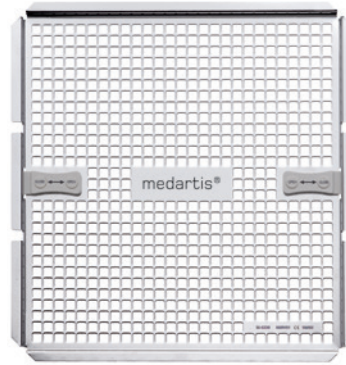
Art. No.	Description	Length	Piece/Pkg
M-2820		114 mm	1

### Instrument Case



M-6320

### Lid for Instrument Case



M-6330

Art. No.	Description	Dimension (W x L)	Pieces/Pkg
M-6320	Instrument Case, Steel	231 x 245 mm	1
M-6330	Lid for Instrument Case M-6320	228 x 243 mm	1

### Instrument Trays for M-6320

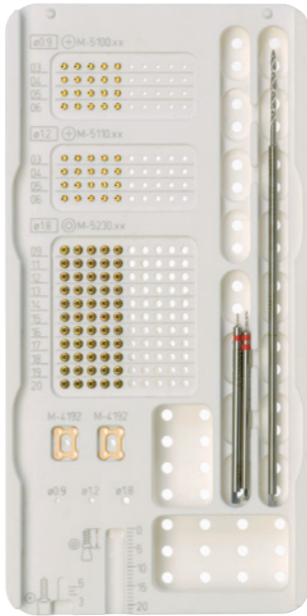


M-6340

Art. No.	Description	Dimension (W x L)	Pieces/Pkg
M-6340	Instrument Tray MODUS CFS	214 x 229 mm	1

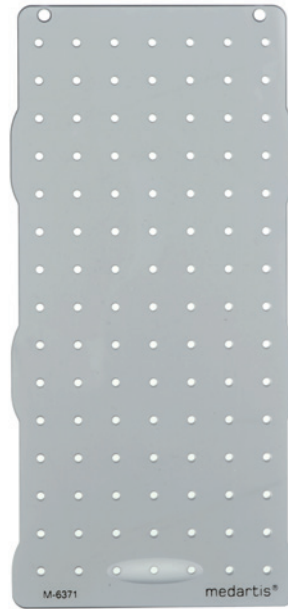


### Implant Container MODUS CFS



M-6370 excl. implants

### Lid for Implant Container (Spare Part)



M-6371

Art. No.	Description	Dimension (W x L)	Piece/Pkg
M-6370	Implant Container MODUS CFS	80 x 160 mm	1
M-6371	Lid for Containers M-6370	76 x 160 mm	1

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