MatrixMIDFACE™ Plate and Screw System

Surgical Technique

DePuy Synthes

PART OF THE Johnson&Johnson FAMILY OF COMPANIES

Image intensifier control

This description alone does not provide sufficient background for direct use of DePuy Synthes products. Instruction by a surgeon experienced in handling these products is highly recommended.

Processing, Reprocessing, Care and Maintenance
For general guidelines, function control and dismantling of multi-part instruments, as well as processing guidelines for implants, please contact your local sales representative or refer to:
http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance
For general information about reprocessing, care and maintenance of Synthes reusable devices, instrument trays and cases, as well as processing of Synthes non-sterile implants, please consult the Important Information leaflet (SE_023827) or refer to:
http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance

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MatrixMIDFACE Plate and Screw System

Introduction

The aim of surgical fracture treatment is to reconstruct the bony anatomy and restore its function. According to the AO, internal fixation is distinguished by anatomical reduction, stable fixation, preservation of blood supply, and early, active mobilization.[1] Plate and screw osteosynthesis has been established and clinically recognized for some time.

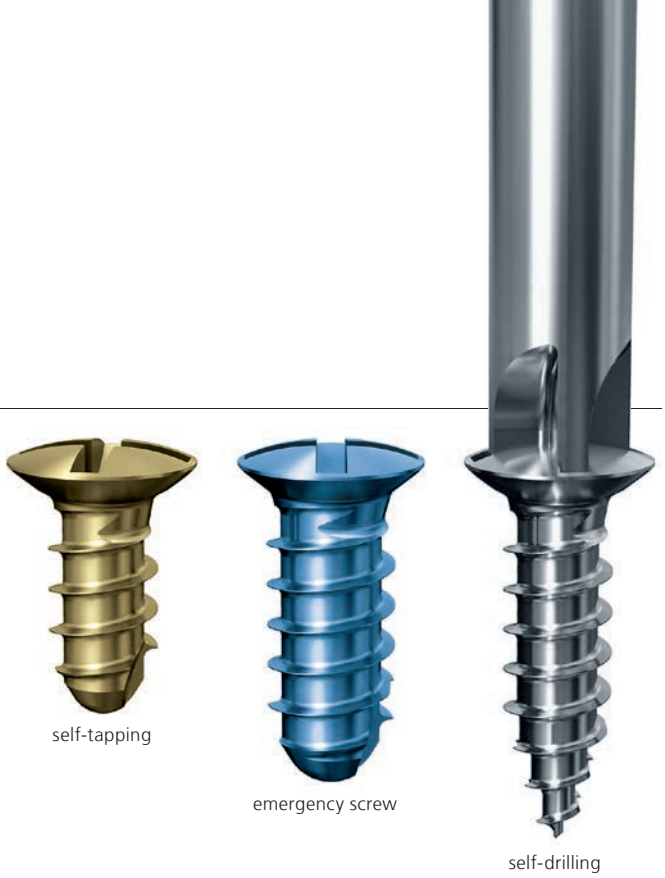
Keeping the AO philosophy at its core, Matrix is the new plating platform for internal fixation of the cranio-maxillo-facial skeleton-addressing neuro, craniofacial, mandibular, and orthognathic surgery. Matrix is a simple yet comprehensive system that offers flexibility and ease of use.

- All screws work with all plates within each Matrix system
- One blade for all screws within each Matrix system
- Reduced plate/screw profile, where applicable
- Self-retaining screws/blades that minimize cam-out*
- Standardized instrumentation
- Color-coding by strength for easy identification
- Rounded edges on plates for less irritation to soft tissue, where applicable
- Reduced inventory for hospitals without compromising clinical solutions

*Data on file at DePuy Synthes

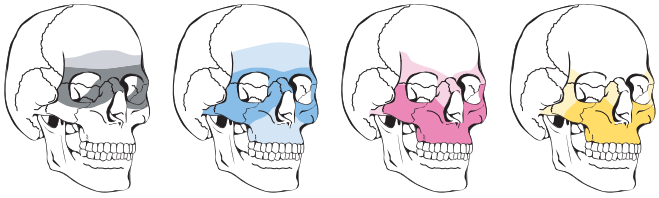
[1] Müller ME, Allgöwer M, Schneider R, Willenegger H. Manual of Internal Fixation. 3rd, expanded and completely revised edition. Berlin, Heidelberg, New York: Springer. 1995.

One screwdriver blade works for all screws



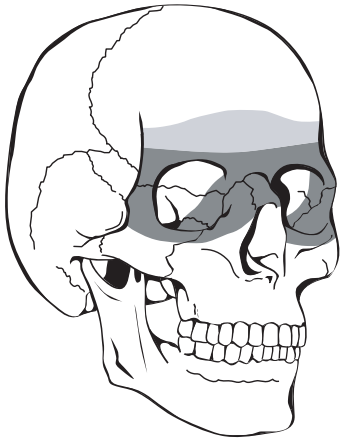
One screw diameter works for all plates

One system for all midface trauma anatomical regions



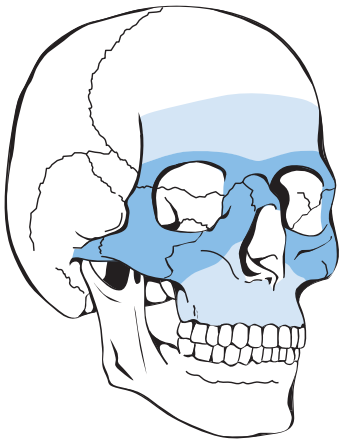
Micro plates, silver
Anatomical Region: Nasal, orbital, and frontal region

Midface plates 0.4 mm thick
Orbital plates 0.2 mm thick



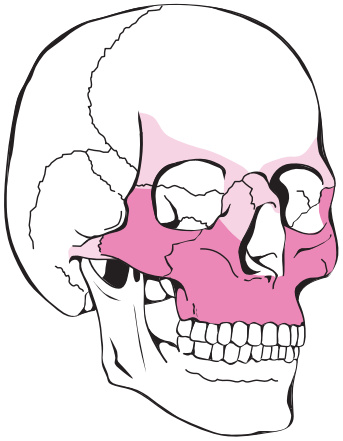
Mini plates, blue
Anatomical Region: Nasal, orbital, zygoma, frontal and maxillary region

Midface plates 0.5 mm thick
Orbital plates 0.3 mm thick



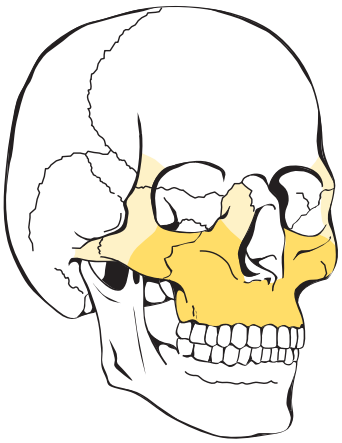
Medium plates, pink
Anatomical Region: Nasal, orbital, zygoma, and maxillary region

Midface plates 0.7 mm thick
Orbital plates 0.4 mm thick

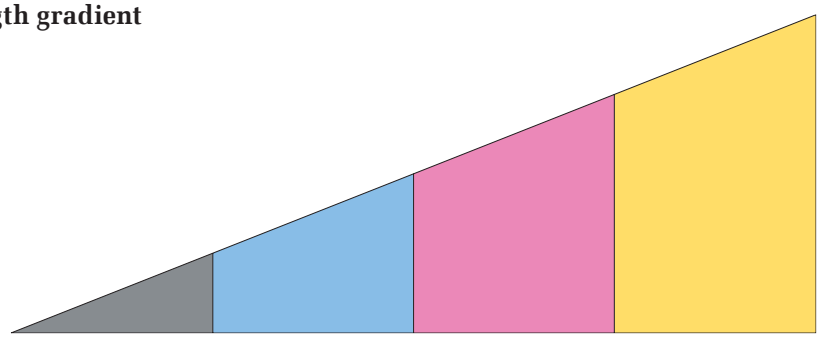


Large plates, gold
Anatomical Region: Central and lateral midface, orbital and zygoma region

Midface plates 0.8 mm thick
Orbital plates 0.5 mm thick



MatrixMIDFACE plates color-coding/strength gradient



Midface plates, thickness	0.4 mm	0.5 mm	0.7 mm	0.8 mm
Orbital plates, thickness	0.2 mm	0.3 mm	0.4 mm	0.5 mm

AO Principles

In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation[1,2]. They are:

Anatomic reduction
Fracture reduction and fixation to restore anatomical relationships. A comprehensive implant and instrument selection offers the ability to address most simple and complex fixation needs.

Stable fixation
Stability by rigid fixation or splintage, as the personality of the fracture and the injury requires. The MatrixMIDFACE Plate and Screw System is optimized to achieve stable bone fixation.

Preservation of blood supply
Preservation of the blood supply to soft tissue and bone by careful handling and gentle reduction techniques.

Early, active mobilization
Early and safe mobilization of the part and patient. The MatrixMIDFACE Plate and Screw System, combined with AO technique, provides stable fixation enough to allow a functional aftercare.

[1] Müller ME, Allgöwer M, Schneider R, Willenegger H. Manual of Internal Fixation. 3rd, expanded and completely revised edition. Berlin, Heidelberg, New York: Springer. 1995.
[2] Rüedi TP, Buckley RE, Moran CG. AO Principles of Fracture Management. 2nd expanded edition. Stuttgart, New York: Thieme. 2007.

Intended Use, Indications, Contraindications, Warnings, Precautions, General Adverse Events and MRI Information

Intended Use
MatrixMIDFACE Plate and Screw System is intended for use as trauma repair and reconstruction of the craniomaxillofacial skeleton.

Indications
MatrixMIDFACE Plate and Screw System is indicated for use in trauma repair and reconstruction of the craniomaxillofacial skeleton.

MatrixMIDFACE Orbital Plates are indicated for orbital fracture treatment.
MatrixMIDFACE Preformed Orbital Plates are indicated for use in:
- Orbital floor fractures
- Medial orbital wall fractures
- Combined orbital floor and medial wall fractures

Contraindications
No specific contraindications.

Warnings:
- **Using an internal fixation system on patients with active or latent infection may cause potential risks which may include construct failure and deterioration of infection. It is at the physician's discretion to evaluate the patient's medical conditions and select a fixation device most appropriate for the individual patient. It is also at the physician's discretion to consider all other necessary treatment methods to effectively manage the infection.**
- **Confirm the quality of bone at the selected plate position. Using an internal fixation system on patients with insufficient quantity or quality of bone may cause potential risks which may include device loosening and construct failure. It is at the physician's discretion to evaluate the patient's medical conditions and select a fixation device most appropriate for the individual patient.**
- **These devices can break during use (when subjected to excessive forces or outside the recommended surgical technique). While the surgeon must make the final decision on removal of the broken part based on associated risk in doing so, we recommend that whenever possible and practical for the individual patient, the broken part should be removed. Be aware that implants are not as strong as native bone. Implants subjected to substantial loads may fail.**
- **Instruments, screws and cut plates may have sharp edges or moving joints that may pinch or tear user's glove or skin.**
- **Take care to remove all fragments that are not fixated during the surgery.**
- **While the surgeon must make the final decision on implant removal, we recommend that whenever possible and practical for the individual patient, fixation devices should be removed once their service as an aid to healing is accomplished. Implant removal should be followed by adequate post-operative management to avoid refracture.**

Precautions:
- **Confirm functionality of instruments and check for wear during reprocessing. Replace worn or damaged instruments prior to use.**
- **It is recommended to only use the instruments identified for use within the MatrixMIDFACE (DSEM/CMF/0216/0113) and MatrixORBITAL surgical techniques (DSEM/CMF/0216/0114) with the MatrixMIDFACE implants.**
- **Handle devices with care and dispose worn bone cutting instruments in a sharps container.**
- **Always irrigate and apply suction for removal of debris potentially generated during implantation or removal.**

General Adverse Events
As with all major surgical procedures, risks, side effects and adverse events can occur. While many possible reactions may occur, some of the most common include: Problems resulting from anesthesia and patient positioning (e.g. nausea, vomiting, dental injuries, neurological impairments, etc.), thrombosis, embolism, infection, nerve and/or tooth root damage or injury of other critical structures including blood vessels, excessive bleeding, damage to soft tissues incl. swelling, abnormal scar formation, functional impairment of the musculoskeletal system, pain, discomfort or abnormal sensation due to the presence of the device, allergy or hypersensitivity reactions, side effects associated with hardware prominence, loosening, bending, or breakage of the device, mal-union, non-union or delayed union which may lead to breakage of the implant, reoperation.

Device-specific Adverse Events

Device-specific adverse events include but are not limited to:

- Malunion / non-union that may be associated with:
  - Implant inappropriately dimensioned for the intended use
  - Hole deformation due to plate bending
  - Construct failure due to inadequate strength design
  - Construct strength too weak for post-operative loading forces
  - Plate/mesh hole diameter too large or screw head too small
  - Wrong implant material/design
  - Misleading/incorrect label
  - Information provided to the end-user (i.e. IFU, TG, care guide) is insufficient, incorrect or imprecise
  - Insufficient screw holes left after plate has been cut
  - Reverse and repeated bending applied
- Adverse Tissue Reaction that may be associated with:
  - Instruments debris/particle created during cutting
  - Instruments debris/particle created during implantation and/or removal
  - Incorrect label i.e. wrong data provided on the LMD i.e. wrong text, missing symbols, wrong expiry date
- Damage to vital organs / surrounding structures that may be associated with:
  - Premature plate/mesh failure
  - Plate/mesh does not offer enough options for screw placement
  - Plate/mesh too thick for anatomical area
  - Fixation holes do not allow for appropriate fixation
  - Insufficient mesh structure
  - Screw placement into nerve, tooth buds/roots and or any other critical structures
  - Screw core diameter is too small leading to screw breakage post-operatively
  - Screw deforms or breaks during insertion with generation of fragments that the surgeon is unaware of or unable to retrieve, potentially resulting in fragment migration
  - Screw recess strips due to blade cam-out
  - Burrs/sharp edges on edge of plate
  - Plate/mesh inadequately contoured resulting in inadequate reduction
  - Screw breaks during insertion and fragments are not retrieved
  - Screw breakage post-operatively
  - Blade cams-out of screw recess
  - Screw passes completely through plate
  - Generation of particle debris during surgical procedure
  - Screw strips bone post-operatively
  - Screw not safely retained resulting in loss of screw intra-operatively
  - Screw or plate migrates or deforms post-operatively
  - Plate hole does not hold screw head
  - Implant loses functionality post-operatively
  - Improper use of implant resulting in treatment failure
  - Wrong plate selection
  - Incorrect plate/screw position resulting in irreversible damage
  - Inappropriate use of screws or drill bits
  - Overheating of drill bit causing thermal necrosis of bone
- Injury to user that may be associated with:
  - Sharp edges caused during cutting of plates punctures surgical glove/hand
- Loosening that may be associated with:
  - Insufficient implant fixation
  - Screw breakage post-operatively
  - Inappropriate screw used
- Peripheral Nerve that may be associated with:
  - Screws inserted into nerve, tooth buds/roots and or any other critical structures
- Soft Tissue Damage that may be associated with:
  - Premature plate/mesh failure
  - Screw breakage post-operatively
  - Burrs/sharp edges on edge of plate
  - Implant loses its function post-operatively
- Systemic Infection that may be associated with:
  - Incomplete/incorrect processing leading to implantation of a non-sterile product
  - Sterile barrier compromised leading to implantation of a non-sterile product
  - Implantation of non-sterile product
  - Implantation of non-sterile unclean product due to incorrect label
  - Reuse of single use implant

MRI Information

Torque, Displacement and Image Artifacts according to ASTM F 2213-06, ASTM F 2052-14 and ASTM F 2119-07

Non-clinical testing of a worst case scenario in a 3 T MRI system did not reveal any relevant torque or displacement of the construct for an experimentally measured local spatial gradient of the magnetic field of 5.4 T/m. The largest image artifact extended approximately 20 mm from the construct when scanned using the Gradient Echo (GE). Testing was conducted on a Siemens Prisma 3 T MRI system.

Radio-Frequency-(RF-)induced heating according to ASTM F 2182-11a

Non-clinical electromagnetic and thermal simulations of a worst case scenario lead to temperature rises of 9.3 °C (1.5 T) and 6 °C (3 T) under MRI Conditions using RF Coils (whole body averaged specific absorption rate [SAR] of 2 W/kg for 15 minutes).

Precautions: **The above mentioned test relies on nonclinical testing. The actual temperature rise in the patient will depend on a variety of factors beyond the SAR and time of RF application. Thus, it is recommended to pay particular attention to the following points:**

- **It is recommended to thoroughly monitor patients undergoing MR scanning for perceived temperature and/or pain sensations.**
- **Patients with impaired thermoregulation or temperature sensation should be excluded from MR scanning procedures.**
- **Generally, it is recommended to use an MRI system with low field strength in the presence of conductive implants. The employed specific absorption rate (SAR) should be reduced as far as possible.**
- **Using the ventilation system may further contribute to reduce temperature increase in the body.**

1. Expose and reduce fracture

After completing the preoperative plan, expose the fracture or osteotomy site. In trauma reduce the fracture as required.

Notes:

- **For the reduction of displaced craniofacial fractures the MatrixMIDFACE Threaded Reduction Tools and T-Handle can be used.**
- **For handling instructions please refer to the MatrixMIDFACE Threaded Reduction Tools and T-Handle brochure (036.000.331).**

2. Select and prepare the implant

Instruments	
03.503.032	Plate Holder, short
03.503.034	Plate Holder, long
03.503.039	Plate Cutter for MatrixMIDFACE

Select the appropriate plate for the nature of the fracture. Orient the plate so that the topside is facing out. Cut to length, if necessary.

top side

bony side

Optional Instruments	
03.503.367– 03.503.380	Bending Templates for MatrixMIDFACE

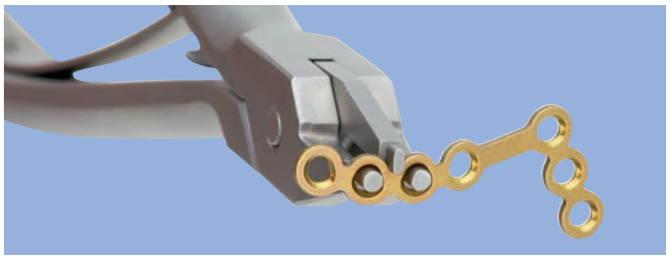
Note: **When working with sterile implants, bending templates can be used to support the plate selection.**

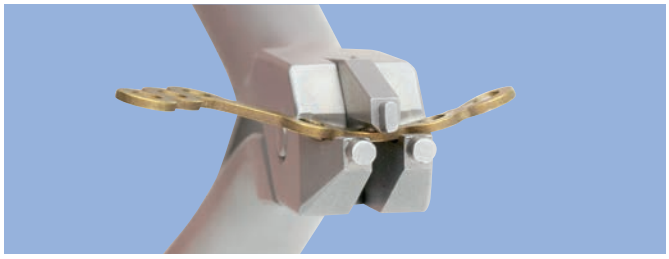
Precautions:

- **Bending templates are not intended to be implanted or used as a drill guide for surgical planning.**
- **In order to determine the appropriate amount of screws needed to achieve stable construct fixation, the surgeon should consider the fracture size and shape.**
- **Take care to protect soft tissue from trimmed plate edges.**

3. Contour the plate

Instruments	
03.503.035	Bending Pliers 3D for MatrixMIDFACE Plates
03.503.038	Bending Pliers for MatrixMIDFACE Plates (two bending pliers required)





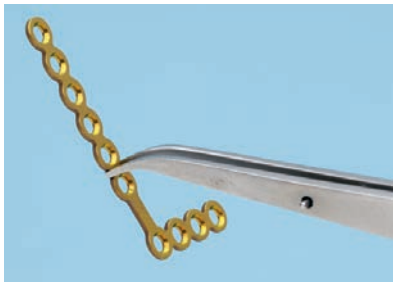
Contour the plate to fit to the patient anatomy using the bending pliers. Ensure the plate is passively adapted to the bone.

Precautions:

- **If contouring is necessary, the surgeon should avoid bending the device at a screw hole.**
- **Avoid sharp bends, repetitive and reverse bending as it increases the risk of implant breakage.**

4. Position the plate

Instruments	
03.503.032	Plate Holder, short
03.503.034	Plate Holder, long



Place the plate over the fracture or osteotomy site.

Precaution: Confirm that plate positioning allows for adequate clearance of nerves, tooth buds and/or tooth roots and any other critical structures.

5. Drill the hole

Predrilling is recommended in complex fractures of the midface and in regions with thick cortical bone.

Drill the first hole close to the fracture or osteotomy site.

Notes:

- **Screws are available in self-drilling (silver), self-tapping (bronze), and emergency (blue) designs.**
- **If a pilot hole is desired, use the appropriate 1.1 mm diameter MatrixMIDFACE drill bit for drilling up to 8 mm length and the 1.25 mm diameter MatrixMIDFACE drill bit for screw lengths of 10 mm or more.**

Precautions:

- **Confirm that drill bit length and diameter correspond to selected screw length prior to drilling.**
- **Predrilling not recommended for 3 mm self-drilling screws.**
- **Drill speed rate should never exceed 1,800 rpm, particularly in dense, hard bone. Higher drill speed rates can result in:**
  - **thermal necrosis of the bone,**
  - **soft tissue burns,**
  - **an oversized hole, which can lead to reduced pull-out force, increased ease of the screws stripping in bone, suboptimal fixation, and/or the need for emergency screws.**
- **Always irrigate during drilling to avoid thermal damage to the bone and ensure drill bit is concentric to plate hole.**
- **Avoid damaging the plate threads with the drill.**
- **Avoid drilling over nerve or tooth roots.**
- **Take care while drilling as to not damage, entrap, or tear a patient's soft tissue or damage critical structures. Be sure to keep drill clear of loose surgical materials.**

6. Screw insertion

Instruments	
03.503.201	Screwdriver Shaft MatrixMIDFACE, short, self-holding, length 52 mm, with Hexagonal Coupling
03.503.202	Screwdriver Shaft MatrixMIDFACE, medium, self-holding, length 76 mm, with Hexagonal Coupling
03.503.203	Screwdriver Shaft MatrixMIDFACE, long, self-holding, length 96 mm, with Hexagonal Coupling
03.503.205	Screwdriver Shaft MatrixMIDFACE, medium, with Holding Sleeve, length 79 mm, with Hexagonal Coupling
03.503.206	Screwdriver Shaft MatrixMIDFACE, long, with Holding Sleeve, length 95 mm, with Hexagonal Coupling
311.005	Handle, small, with Hexagonal Coupling
311.006	Handle, medium, with Hexagonal Coupling
311.007	Handle, large, with Hexagonal Coupling

To engage the screw on the blade, align the blade over the cruciform recess and slowly rotate it counter-clockwise until the blade drops into the recess; firmly press the blade to fully seat it into the screw. A half counter-clockwise rotation of the engaged screwdriver facilitates the screw removal from the clip.

Insert the first screw close to the fracture or osteotomy site, and tighten until secure.

Insert the second screw on the opposite side of the fracture or osteotomy site, and then all remaining screws following the outlined procedure.

If the screw is inserted with angulation, verify that the screw is safely retained in the plate hole and that the construct profile is not significantly increased.

Precautions:

- **Confirm screw length prior to implantation.**
- **In order to determine the appropriate amount of screws needed to achieve stable construct fixation, the surgeon should consider the fracture size and shape.**
- **Tighten screws in a controlled manner. Applying too much torque to the screws may cause screw/plate deformation or bone stripping. If bone becomes stripped, remove the screw from the bone and replace with an emergency screw.**

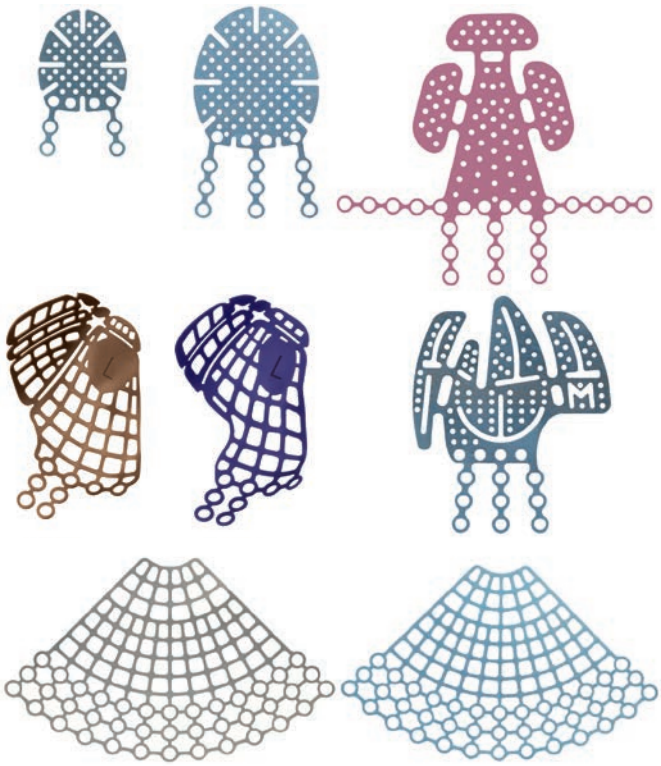
Orbital Plates

1. Select plate design

Instruments	
03.503.032	Plate Holder, short
03.503.034	Plate Holder, long

Select the appropriate plate shape and thickness that best suits the bony anatomy and treatment objective.

Optional Instruments	
03.503.360– 03.503.366	Bending Templates for MatrixMIDFACE



Notes:

- **When working with sterile implants bending templates can be used for the plate selection.**
- **For surgical technique for MatrixMIDFACE Preformed Orbital Plates including correct handling of the orbital retractors refer to the surgical technique DSEM/CMF/0216/0114.**

2. Adapt plate to the bone

Instruments	
03.503.033	Cutting Scissor for Mesh Plates, short
03.503.037	Cutting Scissor for Mesh Plates, long
03.503.035	Bending Pliers 3D for MatrixMIDFACE Plates
03.503.038	Bending Pliers for MatrixMIDFACE Plates (two bending pliers required)

If required, cut and contour the plate to fit to the patient anatomy using the cutting scissor and the bending pliers respectively. Ensure that the plate is passively adapted to the bone.

Precautions:

- **Confirm that plate positioning allows for adequate clearance of nerves and any other critical structures.**
- **If contouring is necessary, the surgeon should avoid bending the device at a screw hole.**
- **Avoid sharp bends, repetitive and reverse bending as it increases the risk of implant breakage.**
- **The lateral anterior part of the MatrixMIDFACE Preformed Orbital Plate is intentionally prebent higher than the orbital rim anatomy to allow free plate movement during plate positioning. The lateral anterior part can be further contoured to match patient anatomy.**
- **Avoid contouring of the implant in situ that may lead to implant malposition and/or posterior cantilever effect.**
- **Take care to protect soft tissue from trimmed edges.**

3. Drill the hole

Drill the hole with the appropriate diameter drill bit.

Notes:
- **Self-tapping and self-drilling screws are available.**
- **If a pilot hole is desired, use the appropriate 1.1 mm diameter MatrixMIDFACE drill bit for drilling up to 8 mm length and the 1.25 mm diameter MatrixMIDFACE drill bit for screw lengths of 10 mm or more.**

Precautions:
- **Confirm that drill bit length and diameter correspond to selected screw length prior to drilling.**
- **Predrilling not recommended for 3 mm self-drilling screws.**
- **Drill speed rate should never exceed 1,800 rpm, particularly in dense, hard bone. Higher drill speed rates can result in:**
  - **thermal necrosis of the bone,**
  - **soft tissue burns,**
  - **an oversized hole, which can lead to reduced pull-out force, increased ease of the screws stripping in bone, suboptimal fixation, and/or the need for emergency screws.**
- **Always irrigate during drilling to avoid thermal damage to the bone and ensure drill bit is concentric to plate hole.**
- **Avoid drilling over nerve or tooth roots.**
- **Take care while drilling as to not damage, entrap, or tear a patient's soft tissue or damage critical structures. Be sure to keep drill clear of loose surgical materials.**

4. Fixate plate to the bone

Instruments	
03.503.201	Screwdriver Shaft MatrixMIDFACE, short, self-holding, length 52 mm, with Hexagonal Coupling
03.503.202	Screwdriver Shaft MatrixMIDFACE, medium, self-holding, length 76 mm, with Hexagonal Coupling
03.503.203	Screwdriver Shaft MatrixMIDFACE, long, self-holding, length 96 mm, with Hexagonal Coupling
03.503.205	Screwdriver Shaft MatrixMIDFACE, medium, with Holding Sleeve, length 79 mm, with Hexagonal Coupling
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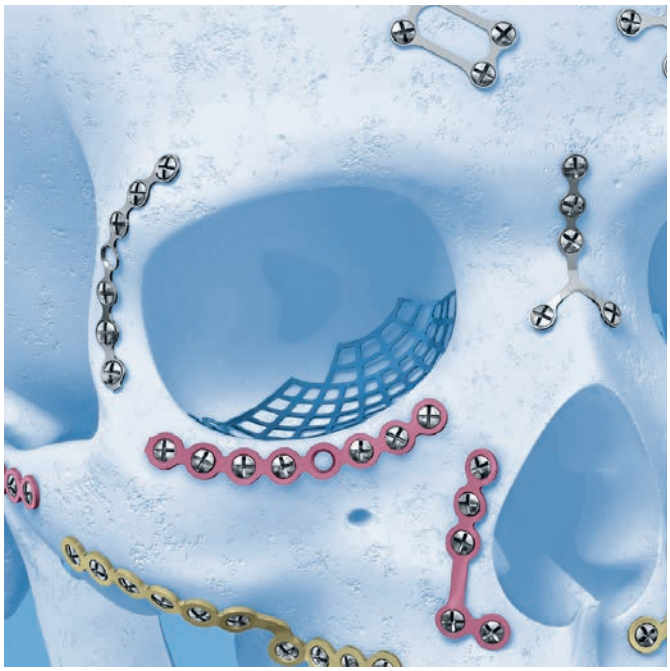
311.005	Handle, small, with Hexagonal Coupling
311.006	Handle, medium, with Hexagonal Coupling
311.007	Handle, large, with Hexagonal Coupling



To engage the screw on the blade, align the blade over the cruciform recess and slowly rotate it counter-clockwise until the blade drops into the recess; firmly press the blade to fully seat it into the screw. A half counter-clockwise rotation of the engaged screwdriver facilitates the screw removal from the clip.

Stabilize the implant with screws inserted through selected screw holes in the plate. Insert 1.5 mm MatrixMIDFACE screws of appropriate length to secure the plate to the bone.

If the screw is inserted with angulation, verify that the screw is safely retained in the plate hole and that the construct profile is not significantly increased.

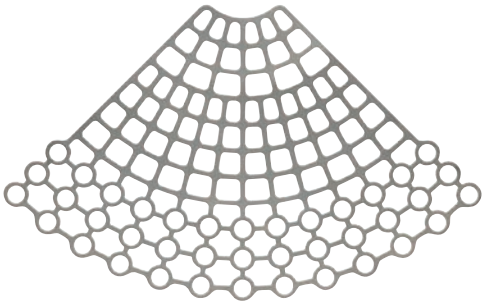
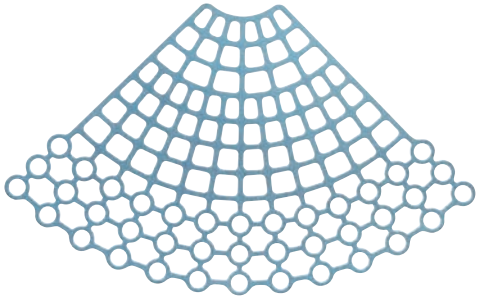
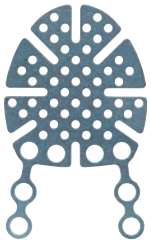
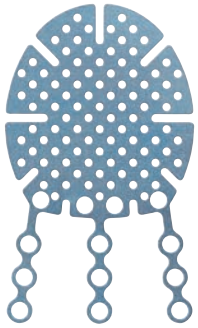
Notes:

- **Test for impingement: A forced duction test must be completed to ensure unrestricted lateral and medial movement of the globe.**
- **For the surgical technique for MatrixMIDFACE Preformed Orbital Plates refer to the surgical technique DSEM/CMF/0216/0114.**

Precautions:

- **Confirm screw length prior to implantation.**
- **Tighten screws in a controlled manner. Applying too much torque to the screws may cause screw/plate deformation or bone stripping. If bone becomes stripped, remove the screw from the bone and replace with an emergency screw.**
- **In order to determine the appropriate amount of screws needed to achieve stable construct fixation, the surgeon should consider the fracture size and shape.**

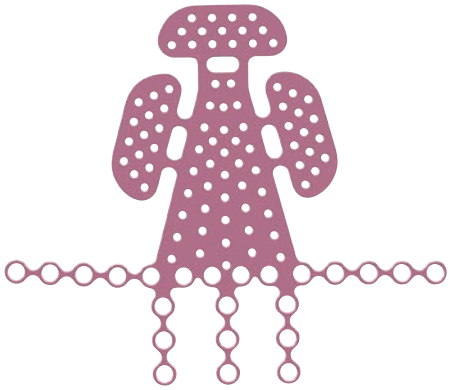
MatrixMIDFACE Plates – Orbital

04.503.306	Orbital Floor Mesh Plate, thickness 0.2 mm, Pure Titanium	
04.503.307	Orbital Floor Mesh Plate, thickness 0.3 mm, Pure Titanium	
04.503.301	Anatomic Orbital Floor Plate, small, thickness 0.3 mm, Pure Titanium	
04.503.302	Anatomic Orbital Floor Plate, medium, thickness 0.3 mm, Pure Titanium	

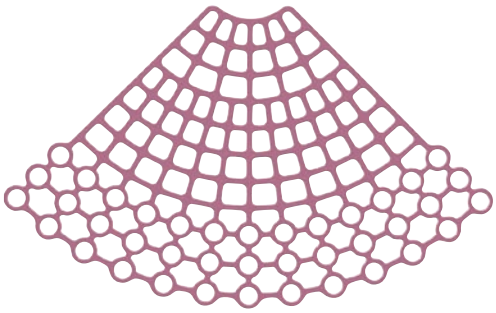
Shown in actual size

04.503.303 Anatomic Orbital Floor Plate, large, thickness 0.3 mm, Pure Titanium

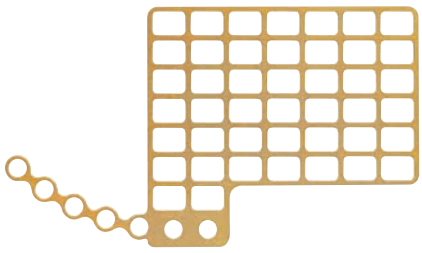
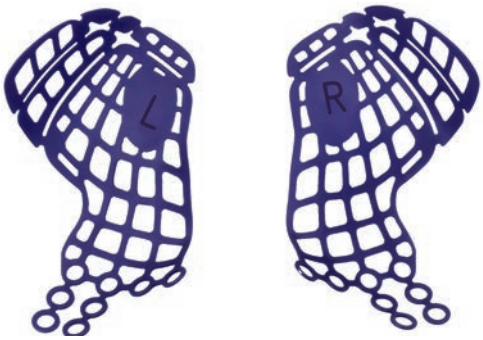
04.503.304 Universal Orbital Floor Plate, thickness 0.4 mm, Pure Titanium



04.503.308 Orbital Floor Mesh Plate, thickness 0.4 mm, Pure Titanium



Shown in actual size

04.503.305	Universal Orbital Plate, thickness 0.5 mm, Pure Titanium	
04.503.801/ 04.503.811	MatrixMIDFACE Preformed Orbital Plate, small, left/right, Pure Titanium	
04.503.802/ 04.503.812	MatrixMIDFACE Preformed Orbital Plate, large, left/right, Pure Titanium	

Shown in actual size

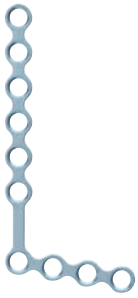
MatrixMIDFACE Plates – Standard

Micro Plates

04.503.313	Orbital Rim Plate, 12 holes, thickness 0.4 mm, Pure Titanium	
04.503.314	MatrixMIDFACE Adaption Plate, 6 holes, thickness 0.4 mm, Pure Titanium	
04.503.315	MatrixMIDFACE Adaption Plate, 8 holes, thickness 0.4 mm, Pure Titanium	
04.503.316	Adaption Plate, 20 holes, thickness 0.4 mm, Pure Titanium	
04.503.317	Y-Plate, 3 holes, thickness 0.4 mm, Pure Titanium	
04.503.318	Double-Y-Plate, 6 holes, thickness 0.4 mm, Pure Titanium	
04.503.330	Frame Plate, 4 holes, 5×10 mm, thickness 0.4 mm, Pure Titanium	
04.503.331	Frame Plate, 4 holes, 10×10 mm, thickness 0.4 mm, Pure Titanium	
04.503.332	X-Plate, 4 holes, thickness 0.4 mm, Pure Titanium	
04.503.333	Strut Plate, 18 holes, thickness 0.4 mm, Pure Titanium	

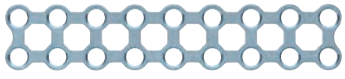
Shown in actual size

Mini Plates

04.503.322	H-Plate, 11 holes, thickness 0.5 mm, Pure Titanium	
04.503.323	L-Plate, 2+3 holes, left, thickness 0.5 mm, Pure Titanium	
04.503.324	L-Plate, 2+3 holes, right, thickness 0.5 mm, Pure Titanium	
04.503.325	L-Plate, 3+4 holes, left, thickness 0.5 mm, Pure Titanium	
04.503.326	L-Plate, 3+4 holes, right, thickness 0.5 mm, Pure Titanium	
04.503.327	T-Plate, 3+4 holes, thickness 0.5 mm, Pure Titanium	
04.503.334	L-Plate, 4+6 holes, left, thickness 0.5 mm, Pure Titanium	
04.503.335	L-Plate, 4+6 holes, right, thickness 0.5 mm, Pure Titanium	
04.503.343	Orbital Rim Plate,12 holes, thickness 0.5 mm, Pure Titanium	

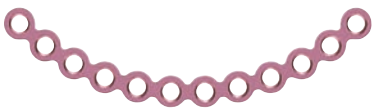
Shown in actual size

Mini Plates

04.503.344	Adaption Plate, 6 holes, thickness 0.5 mm, Pure Titanium	
04.503.345	Adaption Plate, 8 holes, thickness 0.5 mm, Pure Titanium	
04.503.346	Adaption Plate, 20 holes, thickness 0.5 mm, Pure Titanium	
04.503.347	Y-Plate, 3 holes, thickness 0.5 mm, Pure Titanium	
04.503.348	Double-Y-Plate, 6 holes, thickness 0.5 mm, Pure Titanium	
04.503.360	Frame Plate, 4 holes, 5×10 mm, thickness 0.5 mm, Pure Titanium	
04.503.361	Frame Plate, 4 holes, 10×10 mm, thickness 0.5 mm, Pure Titanium	
04.503.362	X-Plate, 4 holes, thickness 0.5 mm, Pure Titanium	
04.503.363	Strut Plate, 18 holes, thickness 0.5 mm, Pure Titanium	

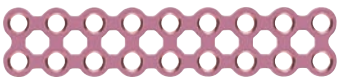
Shown in actual size

Medium Plates

04.503.352	H-Plate, 11 holes, thickness 0.7 mm, Pure Titanium	
04.503.353	L-Plate, 2+3 holes, left, thickness 0.7 mm, Pure Titanium	
04.503.354	L-Plate, 2+3 holes, right, thickness 0.7 mm, Pure Titanium	
04.503.355	L-Plate, 3+4 holes, left, thickness 0.7 mm, Pure Titanium	
04.503.356	L-Plate, 3+4 holes, right, thickness 0.7 mm, Pure Titanium	
04.503.357	T-Plate, 3+4 holes, thickness 0.7 mm, Pure Titanium	
04.503.364	L-Plate, 4+6 holes, left, thickness 0.7 mm, Pure Titanium	
04.503.365	L-Plate, 4+6 holes, right, thickness 0.7 mm, Pure Titanium	
04.503.373	Orbital Rim Plate, 12 holes, thickness 0.7 mm, Pure Titanium	

Shown in actual size

Medium Plates

04.503.374	Adaption Plate, 6 holes, thickness 0.7 mm, Pure Titanium	
04.503.375	Adaption Plate, 8 holes, thickness 0.7 mm, Pure Titanium	
04.503.376	Adaption Plate, 20 holes, thickness 0.7 mm, Pure Titanium	
04.503.377	Y-Plate, 3 holes, thickness 0.7 mm, Pure Titanium	
04.503.378	Double-Y-Plate, 6 holes, thickness 0.7 mm, Pure Titanium	
04.503.390	Frame Plate, 4 holes, 5×10 mm, thickness 0.7 mm, Pure Titanium	
04.503.391	Frame Plate, 4 holes, 10×10 mm, thickness 0.7 mm, Pure Titanium	
04.503.392	X-Plate, 4 holes, thickness 0.7 mm, Pure Titanium	
04.503.393	Strut Plate, 18 holes, thickness 0.7 mm, Pure Titanium	

Shown in actual size

Large Plates

04.503.382	H-Plate, 11 holes, thickness 0.8 mm, Pure Titanium	
04.503.383	L-Plate, 2+3 holes, left, thickness 0.8 mm, Pure Titanium	
04.503.384	L-Plate, 2+3 holes, right, thickness 0.8 mm, Pure Titanium	
04.503.385	L-Plate, 3+4 holes, left, thickness 0.8 mm, Pure Titanium	
04.503.386	L-Plate, 3+4 holes, right, thickness 0.8 mm, Pure Titanium	
04.503.387	T-Plate, 3+4 holes, thickness 0.8 mm, Pure Titanium	
04.503.394	L-Plate, 4+6 holes, left, thickness 0.8 mm, Pure Titanium	
04.503.395	L-Plate, 4+6 holes, right, thickness 0.8 mm, Pure Titanium	
04.503.396	Adaption Plate, 20 holes, thickness 0.8 mm, Pure Titanium	

Shown in actual size

04.503.397	Orbital Rim Plate, 12 holes, thickness 0.8 mm, Pure Titanium	
04.503.398	Adaption Plate, 6 holes, thickness 0.8 mm, Pure Titanium	
04.503.399	Adaption Plate, 8 holes, thickness 0.8 mm, Pure Titanium	

Shown in actual size

Instruments

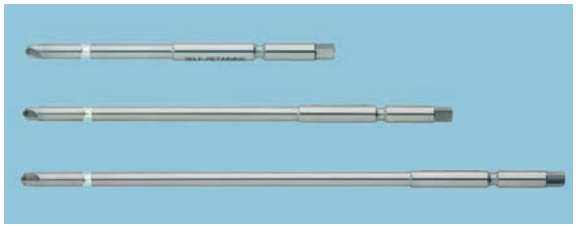
Plate Holders

03.503.032	Short
03.503.034	Long

Handles, with Hexagonal Coupling

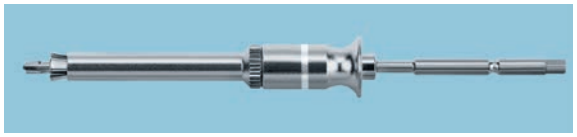
311.005	Small
311.006	Medium
311.007	Large

Screwdriver Shaft MatrixMIDFACE, self-holding, with Hexagonal Coupling



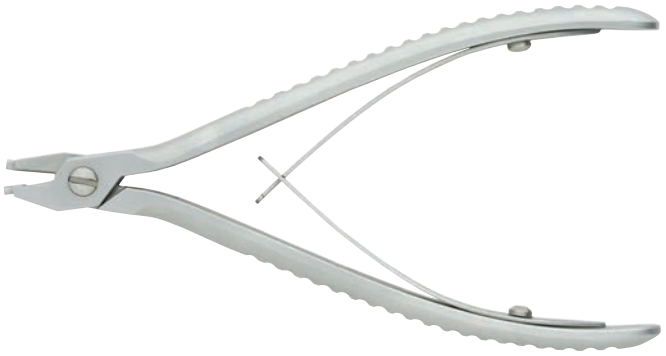
03.503.201	Short, length 52 mm
03.503.202	Medium, length 76 mm
03.503.203	Long, length 96 mm

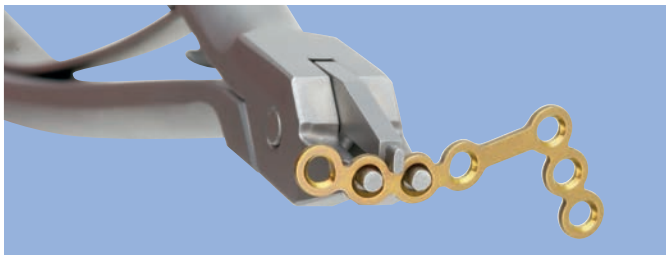
Screwdriver Shaft MatrixMIDFACE, with Holding Sleeve, with Hexagonal Coupling



03.503.205	Medium, length 79 mm
03.503.206	Long, length 95 mm

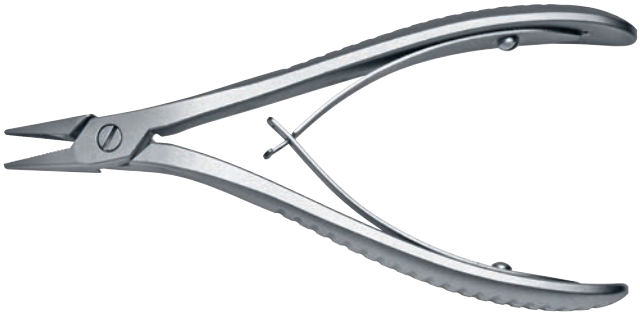
03.503.035 Bending Pliers 3D for MatrixMIDFACE Plates



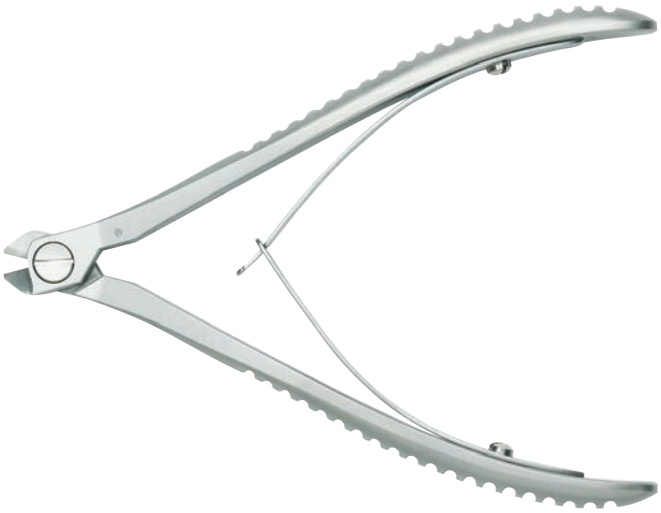


03.503.033	Cutting Scissors for Mesh Plates, short
03.503.037	Cutting Scissors for Mesh Plates, long

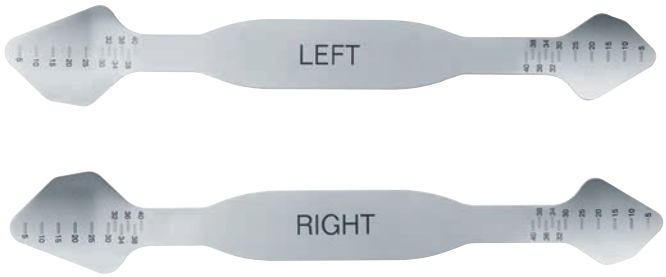
03.503.038	Bending Pliers for MatrixMIDFACE Plates



03.503.039	Plate Cutter for MatrixMIDFACE



03.503.801	Orbital Retractor, left
03.503.802	Orbital Retractor, right



03.507.000	T-Handle, small, with Hexagonal Coupling

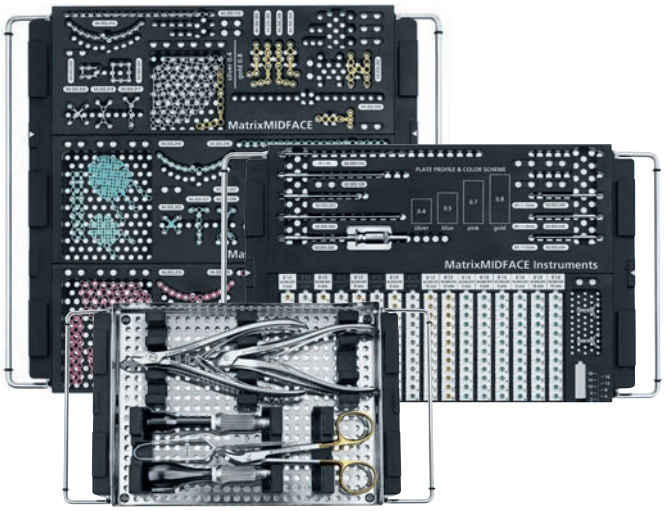
Threaded Reduction Tools, hex coupling

03.507.002S	Threaded Reduction Tool ∅ 2.4 mm, self-drilling, length 78 mm, with Hexagonal Coupling, sterile
03.507.003	Threaded Reduction Tool ∅ 3.5 mm, self-tapping, length 78 mm, with Hexagonal Coupling
03.507.004	Threaded Reduction Tool ∅ 3.5 mm, self-tapping, length 43 mm, with Hexagonal Coupling

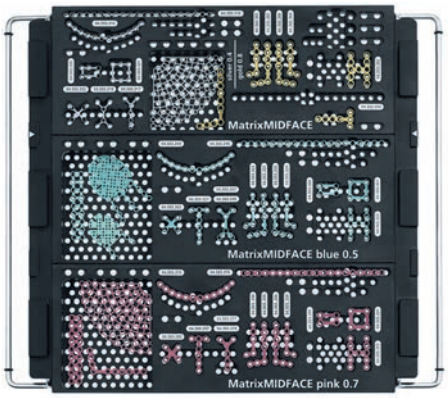
MatrixMIDFACE Modules

MatrixMIDFACE Standard Set Configuration

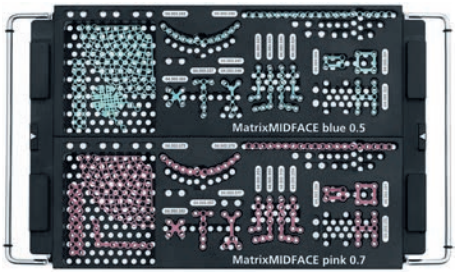
61.503.623	Module for MatrixMIDFACE Plates, 3/3, with Lid, without Contents
61.503.613	Module for MatrixMIDFACE Screws and Instruments, 2/3, with Lid, without Contents
61.503.603	Instrument Tray MatrixMIDFACE, 2/3, with Lid, without Contents



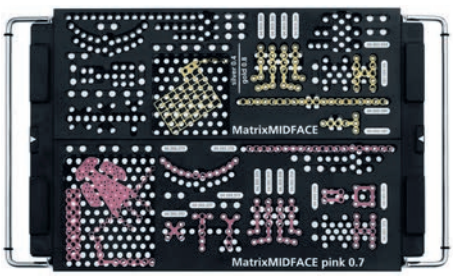
61.503.623	Module for MatrixMIDFACE Plates, 3/3, with Lid, without Contents
01.503.623	MatrixMIDFACE Plate Set, 3/3



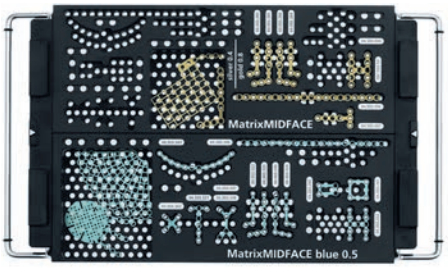
61.503.630	Module for MatrixMIDFACE Plates, blue 0.5 mm and pink 0.7 mm, 2/3, with Lid, without Contents
01.503.634	MatrixMIDFACE Plate Set, blue 0.5 mm and pink 0.7 mm, 2/3



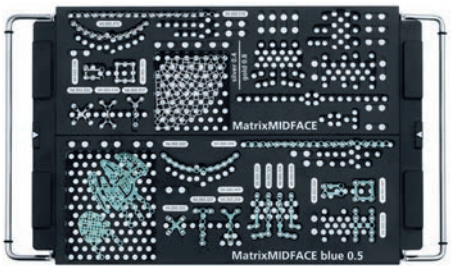
61.503.650	Module for MatrixMIDFACE Plates, pink 0.7 mm and gold 0.8 mm, 2/3, with Lid, without Contents
01.503.654	MatrixMIDFACE Plate Set, pink 0.7 mm and gold 0.8 mm, 2/3



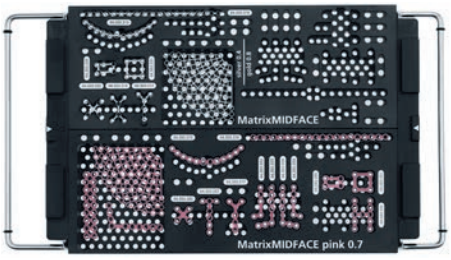
61.503.640	Module for MatrixMIDFACE Plates, blue 0.5 mm and gold 0.8 mm, 2/3, with Lid, without Contents
01.503.644	MatrixMIDFACE Plate Set, blue 0.5 mm and gold 0.8 mm, 2/3



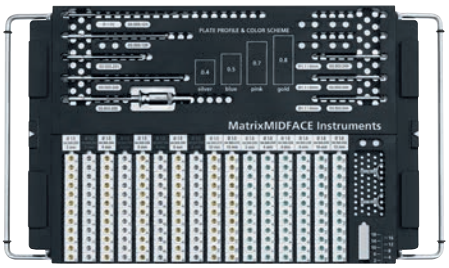
61.503.610	Module for MatrixMIDFACE Plates, silver 0.4 mm and blue 0.5 mm, 2/3, with Lid, without Contents
01.503.614	MatrixMIDFACE Plate Set, silver 0.4 mm and blue 0.5 mm, 2/3



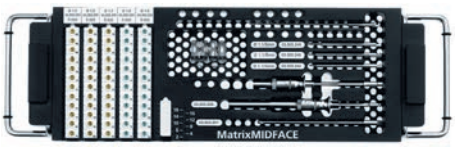
61.503.620	Module for MatrixMIDFACE Plates, silver 0.4 mm and pink 0.7 mm, 2/3, with Lid, without Contents
01.503.624	MatrixMIDFACE Plate Set, silver 0.4 mm and pink 0.7 mm, 2/3

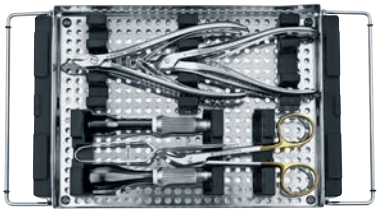
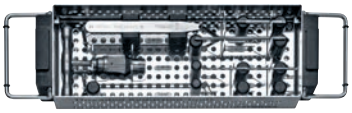


61.503.613	Module for MatrixMIDFACE Screws and Instruments, 2/3, with Lid, without Contents
01.503.613	MatrixMIDFACE Screws and Instrument Set, 2/3



61.503.600	Module MatrixMIDFACE, 1/3, with Lid, without Contents, for use with sterile Implants
01.503.606	MatrixMIDFACE Set, 1/3, for use with sterile Implants

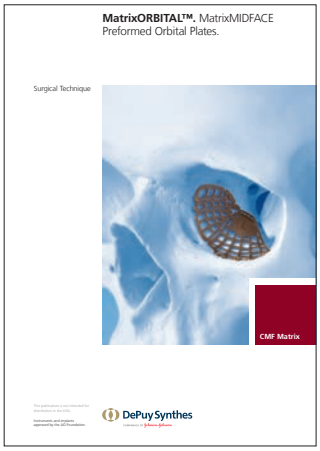


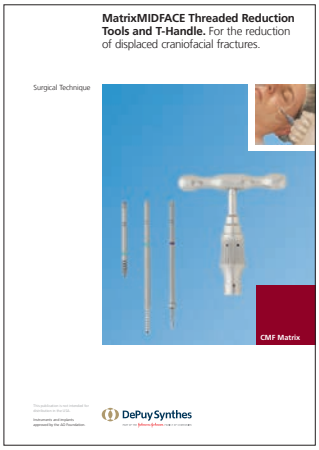
61.503.603	Instrument Tray MatrixMIDFACE, 2/3, with Lid, without Contents	
01.503.603	MatrixMIDFACE Instrument Set, 2/3	
61.507.000	Instrument Tray for MatrixMIDFACE Threaded Reduction Tools and T-Handle, 1/3, with Lid, without Contents	
01.507.000	MatrixMIDFACE Threaded Reduction Tool and T-Handle Set, 1/3	
61.503.604	Module MatrixMIDFACE Compact, 3/3, with Lid, without Contents	
01.503.604	MatrixMIDFACE Compact Set, 3/3	

Also available

MatrixORBITAL
Surgical Technique (DSEM/CMF/0216/0114)

MatrixMIDFACE Threaded Reduction Tools and T-Handle
Surgical Technique (DSEM/CMF/0916/0154)





Ordering Information

MatrixMIDFACE Modules

61.503.600	Module MatrixMIDFACE, 1/3, with Lid, without Contents, for use with sterile Implants
61.503.603	Instrument Tray MatrixMIDFACE, 2/3, with Lid, without Contents
61.503.610	Module for MatrixMIDFACE Plates, silver 0.4 mm and blue 0.5 mm, 2/3, with Lid, without Contents
61.503.613	Module for MatrixMIDFACE Screws and Instruments, 2/3, with Lid, without Contents
61.503.620	Module for MatrixMIDFACE Plates, silver 0.4 mm and pink 0.7 mm, 2/3, with Lid, without Contents, 2/3
61.503.623	Module for MatrixMIDFACE Plates, 3/3, with Lid, without Contents
61.503.630	Module for MatrixMIDFACE Plates, blue 0.5 mm and pink 0.7 mm, 2/3, with Lid, without Contents
61.503.640	Module for MatrixMIDFACE Plates, blue 0.5 mm and gold 0.8 mm, 2/3, with Lid, without Contents
61.503.650	Module for MatrixMIDFACE Plates, pink 0.7 mm and gold 0.8 mm, 2/3, with Lid, without Contents
61.503.604	Module MatrixMIDFACE Compact, 3/3, with Lid, without Contents

MatrixMIDFACE Screws, Titanium Alloy (TAN)

Predrilling is recommended with 1.1 mm MatrixMIDFACE Drill Bits for screw lengths 3 mm–8 mm and 1.25 mm MatrixMIDFACE Drill Bits for screw lengths of 10 mm or more. Drill bits are combined with power tools.

	Self-tapping Screws ∅ 1.5 mm
04.503.203	Length 3 mm
04.503.204	Length 4 mm
04.503.205	Length 5 mm
04.503.206	Length 6 mm
04.503.208	Length 8 mm
04.503.210	Length 10 mm
04.503.212	Length 12 mm
04.503.214	Length 14 mm
04.503.216	Length 16 mm
04.503.218	Length 18 mm

	Self-drilling Screws ∅ 1.5 mm
04.503.223	Length 3 mm (predrilling not recommended)
04.503.224	Length 4 mm
04.503.225	Length 5 mm
04.503.226	Length 6 mm
04.503.228	Length 8 mm

	Emergency Screws ∅ 1.8 mm, self-tapping
04.503.233	Length 3 mm
04.503.234	Length 4 mm
04.503.235	Length 5 mm
04.503.236	Length 6 mm
04.503.238	Length 8 mm
04.503.240	Length 10 mm
04.503.242	Length 12 mm
04.503.244	Length 14 mm
04.503.246	Length 16 mm
04.503.248	Length 18 mm

MatrixMIDFACE Plates, Pure Titanium

	Orbital Floor Plates
04.503.301	Anatomic Orbital Floor Plate, small, thickness 0.3 mm
04.503.302	Anatomic Orbital Floor Plate, medium, thickness 0.3 mm
04.503.303	Anatomic Orbital Floor Plate, large, thickness 0.3 mm
04.503.304	Universal Orbital Floor Plate, thickness 0.4 mm
04.503.305	Universal Orbital Plate, thickness 0.5 mm
04.503.306	Orbital Floor Mesh Plate, thickness 0.2 mm
04.503.307	Orbital Floor Mesh Plate, thickness 0.3 mm
04.503.308	Orbital Floor Mesh Plate, thickness 0.4 mm

	Preformed Orbital Plates
04.503.801	Small, left
04.503.802	Large, left
04.503.811	Small, right
04.503.812	Large, right

	Orbital Rim Plates
04.503.313	12 holes, thickness 0.4 mm
04.503.343	12 holes, thickness 0.5 mm
04.503.373	12 holes, thickness 0.7 mm
04.503.397	12 holes, thickness 0.8 mm

	Adaption Plates
04.503.314	6 holes, thickness 0.4 mm
04.503.344	6 holes, thickness 0.5 mm
04.503.374	6 holes, thickness 0.7 mm
04.503.398	6 holes, thickness 0.8 mm
04.503.315	8 holes, thickness 0.4 mm
04.503.345	8 holes, thickness 0.5 mm
04.503.375	8 holes, thickness 0.7 mm
04.503.399	8 holes, thickness 0.8 mm
04.503.316	20 holes, thickness 0.4 mm
04.503.346	20 holes, thickness 0.5 mm
04.503.376	20 holes, thickness 0.7 mm
04.503.396	20 holes, thickness 0.8 mm

	Y-Plates
04.503.317	Y-Plate, 3 holes, thickness 0.4 mm
04.503.347	Y-Plate, 3 holes, thickness 0.5 mm
04.503.377	Y-Plate, 3 holes, thickness 0.7 mm
04.503.318	Double-Y-Plate, 6 holes, thickness 0.4 mm
04.503.348	Double-Y-Plate, 6 holes, thickness 0.5 mm
04.503.378	Double-Y-Plate, 6 holes, thickness 0.7 mm

	Frame Plates
04.503.330	4 holes, 5×10 mm, thickness 0.4 mm
04.503.360	4 holes, 5×10 mm, thickness 0.5 mm
04.503.390	4 holes, 5×10 mm, thickness 0.7 mm
04.503.331	4 holes, 10×10 mm, thickness 0.4 mm
04.503.361	4 holes, 10×10 mm, thickness 0.5 mm
04.503.391	4 holes, 10×10 mm, thickness 0.7 mm

	X-Plates
04.503.332	4 holes, thickness 0.4 mm
04.503.362	4 holes, thickness 0.5 mm
04.503.392	4 holes, thickness 0.7 mm

	Strut Plates
04.503.333	18 holes, thickness 0.4 mm
04.503.363	18 holes, thickness 0.5 mm
04.503.393	18 holes, thickness 0.7 mm

	L-Plates
04.503.323	2+3 holes, left, thickness 0.5 mm
04.503.353	2+3 holes, left, thickness 0.7 mm
04.503.383	2+3 holes, left, thickness 0.8 mm
04.503.324	2+3 holes, right, thickness 0.5 mm
04.503.354	2+3 holes, right, thickness 0.7 mm
04.503.384	2+3 holes, right, thickness 0.8 mm
04.503.325	3+4 holes, left, thickness 0.5 mm
04.503.355	3+4 holes, left, thickness 0.7 mm
04.503.385	3+4 holes, left, thickness 0.8 mm
04.503.326	3+4 holes, right, thickness 0.5 mm
04.503.356	3+4 holes, right, thickness 0.7 mm
04.503.386	3+4 holes, right, thickness 0.8 mm
04.503.334	4+6 holes, left, thickness 0.5 mm
04.503.364	4+6 holes, left, thickness 0.7 mm
04.503.394	4+6 holes, left, thickness 0.8 mm
04.503.335	4+6 holes, right, thickness 0.5 mm
04.503.365	4+6 holes, right, thickness 0.7 mm
04.503.395	4+6 holes, right, thickness 0.8 mm

	T-Plates
04.503.327	3+4 holes, thickness 0.5 mm
04.503.357	3+4 holes, thickness 0.7 mm
04.503.387	3+4 holes, thickness 0.8 mm

	H-Plates
04.503.322	11 holes, thickness 0.5 mm
04.503.352	11 holes, thickness 0.7 mm
04.503.382	11 holes, thickness 0.8 mm

Screw/plate overview

	Pack of 1 unit	Pack of 4 units	Pack of 1 unit, sterile	Pack of 4 units, sterile	Labelling clips
Self-tapping screws (in clips)[3]	04.503.xxx.**01C**	04.503.xxx.**04C**	04.503.xxx.**01S**	04.503.xxx.**04S**	04.503.xxx**LC**
Self-drilling screws (in clips)	04.503.xxx.**01C**	04.503.xxx.**0**	04.503.xxx.**01S**	04.503.xxx.**04S**	04.503.xxx**LC2**
Emergency screws (in clips)	04.503.xxx.**01C**	04.503.xxx.**01S**	04.503.xxx**LC**		
Plates[1]	04.503.xxx	04.503.xxx**S**	04.503.xxx**LC**		
Drill bits	03.503.xxx	03.503.xxx**S**	03.503.xxx**LC**		

[1] For color-coding of MatrixMIDFACE plates refer to strength gradient on page 5.
[2] Labelling clips for self-drilling screws are marked with "SD".
[3] 04.503.214, 04.503.216 and 04.503.218 self-tapping screws are only available in packs of 1 unit.

Instruments

03.503.032	Plate Holder, short
03.503.033	Cutting Scissors for Mesh Plates, short
03.503.034	Plate Holder, long
03.503.035	Bending Pliers 3D for MatrixMIDFACE Plates
03.503.037	Cutting Scissors for Mesh Plates, long
03.503.038	Bending Pliers for MatrixMIDFACE Plates
03.503.039	Plate Cutter for MatrixMIDFACE

	Screwdriver Shaft MatrixMIDFACE, self-holding, with Hexagonal Coupling
03.503.201	Short, length 52 mm
03.503.202	Medium, length 76 mm
03.503.203	Long, length 96 mm

	Screwdriver Shaft MatrixMIDFACE, with Holding Sleeve, with Hexagonal Coupling
03.503.205	Medium, length 79 mm
03.503.206	Long, length 95 mm

	MatrixMIDFACE Drill Bits ∅ 1.1 mm, for J-Latch Coupling
03.503.244	Drill Bit with Stop, length 44.5/4 mm
03.503.246	Drill Bit with Stop, length 44.5/6 mm
03.503.248	Drill Bit with Stop, length 44.5/8 mm

	MatrixMIDFACE Drill Bits ∅ 1.25 mm, for J-Latch Coupling
03.503.110	Drill Bit with Stop, length 10/44.5 mm, 2-flute
03.503.112	Drill Bit with Stop, length 12/44.5 mm, 2-flute
03.503.118	Drill Bit with Stop, length 18/44.5 mm, 2-flute
03.503.123	Drill Bit with Stop, length 18/125 mm, 2-flute
03.503.120	Drill Bit, length 80 mm, 2-flute
03.503.121	Drill Bit, length 125 mm, 2-flute

	MatrixMIDFACE Drill Bits ∅ 1.1mm, for Mini Quick Coupling
03.503.284	Drill Bit with Stop, length 44.5/4 mm
03.503.286	Drill Bit with Stop, length 44.5/6 mm
03.503.288	Drill Bit with Stop, length 44.5/8 mm

	MatrixMIDFACE Drill Bits ∅ 1.25 mm, for Mini Quick Coupling
03.503.140	Drill Bit with Stop, length 10/44.5 mm, 2-flute
03.503.142	Drill Bit with Stop, length 12/44.5 mm, 2-flute
03.503.148	Drill Bit with Stop, length 18/44.5 mm, 2-flute
03.503.153	Drill Bit with Stop, length 18/125 mm, 2-flute
03.503.150	Drill Bit, length 80 mm, 2-flute
03.503.151	Drill Bit, length 125 mm, 2-flute

	Handles, with Hexagonal Coupling
311.005	Small
311.006	Medium
311.007	Large

	MatrixMIDFACE Bending Templates
03.503.360	Anatomic Orbital Floor Plate, small
03.503.361	Anatomic Orbital Floor Plate, medium
03.503.362	Anatomic Orbital Floor Plate, large
03.503.363	Universal Orbital Floor Plate
03.503.364	Universal Orbital Plate
03.503.365	Orbital Floor Mesh Plate
03.503.366	Adaption Plate, 20 holes
03.503.367	Orbital Rim Plate, 12 holes
03.503.368	L-Plate, 2+3 holes
03.503.369	L-Plate, 3+4 holes
03.503.370	L-Plate, 4+6 holes
03.503.371	Y-Plate, 3 holes
03.503.372	X-Plate, 4 holes
03.503.373	H-Plate, 11 holes
03.503.374	T-Plate, 3+4 holes
03.503.375	Frame Plate, 4 holes, 5 × 10 mm
03.503.376	Frame Plate, 4 holes, 10 × 10 mm
03.503.377	Strut Plate, 18 holes
03.503.378	Double-Y-Plate, 6 holes, thickness 0.4 mm
03.503.379	Double-Y-Plate, 6 holes, thickness 0.5 mm
03.503.380	Double-Y-Plate, 6 holes, thickness 0.7 mm

Additionally Available

	MatrixMIDFACE Orbital Retractors
03.503.801	Orbital Retractor, left
03.503.802	Orbital Retractor, right

MatrixMIDFACE Threaded Reduction Tools and T-Handle

	Module
61.507.000	Instrument Tray for MatrixMIDFACE Threaded Reduction Tools and T-Handle, 1/3, with Lid, without Contents

	Instruments
03.507.000	T-Handle, small, with Hexagonal Coupling
03.507.002S	Threaded Reduction Tool ∅ 2.4 mm, self-drilling, length 78 mm, with Hexagonal Coupling, sterile
03.507.003	Threaded Reduction Tool ∅ 3.5 mm, self-tapping, length 78 mm, with Hexagonal Coupling
03.507.004	Threaded Reduction Tool ∅ 3.5 mm, self-tapping, length 43 mm, with Hexagonal Coupling
03.507.005	Drill Guide 2.4
310.441	Drill Bit ∅ 2.4 mm, length 80 mm, 2-flute, for J-Latch Coupling

	Additionally Available
310.565	Drill Bit ∅ 1.8 mm, length 80 mm, 2-flute, for J-Latch Coupling
312.180	Double Drill Guide 2.4/1.8

DePuy Synthes
PART OF THE Johnson&Johnson FAMILY OF COMPANIES

Synthes GmbH
Eimattstrasse 3
4436 Oberdorf
Switzerland
Tel: +41 61 965 61 11
Fax: +41 61 965 66 00
www.depuysynthes.com

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