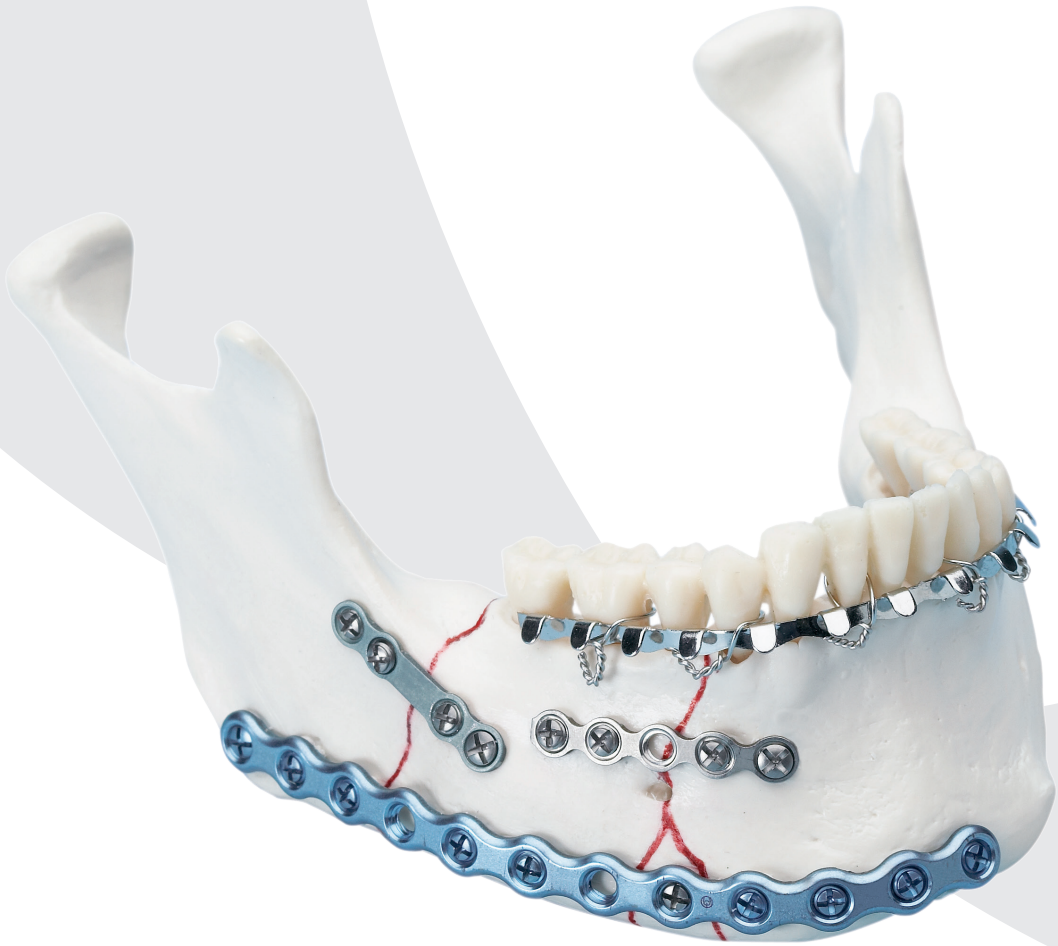
MatrixMANDIBLE™ Plating System

Surgical Technique



DePuy Synthes

PART OF THE Johnson&Johnson FAMILY OF COMPANIES

AO approved by AO Technical Commission

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.

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MatrixMANDIBLE™ Plating System

Comprehensive anatomic locking plate selection in a single streamlined set

Description

Surgical fracture treatment and reconstruction aim at restoring bony anatomy and function. According to the AO, internal fixation is distinguished by anatomic 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, the MatrixMANDIBLE™ Plating System is part of a DePuy Synthes Companies platform for internal fixation of the craniomaxillofacial skeleton – addressing neuro, craniofacial, mandibular, and orthognathic surgery. The MatrixMANDIBLE Plating System is a streamlined, comprehensive system that offers flexibility, ease of use, and the highest quality implants and instruments.

Warnings

- **These devices can break intraoperatively 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 the associated risk in doing so, we recommend that whenever possible and practical for the individual patient, the broken part be removed.**
- **Instruments, screws, and cut plates may have sharp edges or moving joints that may pinch or tear the user's glove or skin.**
- **Select the correct implant size, shape, and design.**
- **Do not use 1.5 mm reconstruction plates for load-bearing procedure. Use only in primary and secondary mandibular reconstruction when a vascularized bone graft is used.**
- **Do not use excessive force during screw insertion. Do not overtighten screws.**

Precautions

- **After implant placement is complete, irrigate and apply suction for removal of debris potentially generated during implantation.**
- **Check instruments periodically for wear or damage. Replace worn or damaged instruments prior to use.**

MRI safety information

The MatrixMANDIBLE Plating System has not been evaluated for safety and compatibility in the MR environment. It has not been tested for heating, migration, or image artifact in the MR environment. The safety of the MatrixMANDIBLE Plating System in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

1. M.E. Müller, M. Allgöwer, R. Schneider, and H. Willenegger. Manual of Internal Fixation, 3rd Edition. Berlin: Springer-Verlag. 1991.

The AO Principles of Fracture Management

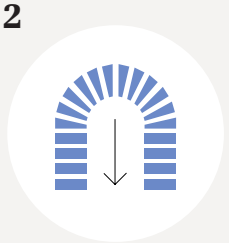
Mission
The AO's mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

AO Principles [1,2]

1

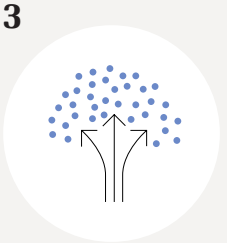
Fracture reduction and fixation to restore anatomical relationships.

2



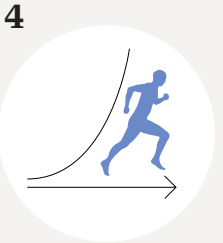
Fracture fixation providing absolute or relative stability, as required by the "personality" of the fracture, the patient, and the injury.

3



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

4



Early and safe mobilization and rehabilitation of the injured part and the patient as a whole.

[1] Müller ME, M Allgöwer, R Schneider, H Willenegger. Manual of Internal Fixation. 3rd ed. Berlin, Heidelberg, New York: Springer. 1991
[2] Buckley RE, Moran CG, Apivatthakakul T. AO Principles of Fracture Management: 3rd ed. Vol. 1: Principles, Vol. 2: Specific fractures. Thieme; 2017.

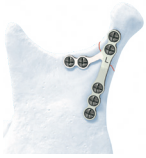
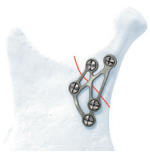
Indications/Contraindications, Sterilization

Indications
The MatrixMANDIBLE Plating System is intended for oral, maxillofacial surgery:
- Trauma
- Reconstructive surgery
- Orthognathic surgery (surgical correction of dentofacial deformities)

The MatrixMANDIBLE Subcondylar Plates are intended for oral, maxillofacial surgery; trauma and reconstructive surgery, specifically for fractures of the subcondylar region of the mandible and fractures of the condylar basis region of the mandible.

Contraindications
- Acute or chronic, local or systemic infections
- Allergy to implant material
- Insufficient bone quality to secure implant

Sterilization
These devices are offered NONSTERILE only.
For additional information, please refer to the package insert or www.e-ifu.com.
For detailed cleaning and sterilization instructions, please refer to www.depuysynthes.com/hcp/cleaning-sterilization or sterilization instructions, if provided in the instructions for use.
In Canada, the cleaning and sterilization instructions will be provided with the loaner shipments.

Plate thickness	Plate type	Primary clinical use	Secondary clinical use
1.0 mm	Mini trauma: – Tension band plates – Adaption plates – Strut/3-D plates – Prebent tension band (Champy) plates	Mandible trauma 	Orthognathic
1.0 mm	Mini trauma/recon: – Lambda plate – Trapezoidal plate – Strut plate	Subcondylar trauma   The Lambda plate 5-hole segment and Strut plate 3-hole segment should be nearly parallel to the posterior border and aligned with the condylar head*	Subcondylar reconstruction n/a For Trapezoidal Plate placement, superior placement is limited by the width of the condylar neck*

* Precaution: Avoid placing holes over nerve or tooth root.

Plate thickness	Plate type	Primary clinical use	Secondary clinical use
1.25 mm	Intermediate trauma: – Adaption plates – Curved/crescent plates – Straight plates – Angle plates	Mandible trauma 	n/a
1.5 mm	Large trauma: – Curved/crescent plates – Straight plates – Angle plates	Mandible trauma 	n/a
1.5 mm	Small reconstruction plates*: – Single-angle – Double-angle	Primary mandibular reconstruction (used with vascularized bone graft) 	Comminuted fracture
2.0 mm	Extra large trauma: – Curved/crescent plates – Straight plates – Angle plates	Mandible trauma 	n/a
2.0 mm	Small reconstruction plates: – Single-angle – Double-angle – 20-hole straight plates	Primary mandibular reconstruction (used with vascularized bone graft) 	Comminuted fractures

* Warning: Do not use 1.5 mm reconstruction plates for load-bearing procedure.

Plate thickness	Plate type	Primary clinical use	Secondary clinical use
2.5 mm	Medium reconstruction plates: – Straight – Single-angle – Double-angle	Primary mandibular reconstruction (used with bone graft) 	Comminuted fractures Temporary bridging with delayed secondary reconstruction*
2.8 mm	Large reconstruction plates: – Straight – Single-angle	Bridging continuity defects prior to secondary reconstruction*[2] 	n/a

* Plate fractures are possible when any plate bears the entire functional load for extended periods. Therefore the implantation of a bone graft immediately, or at a later date, is necessary to support the construct.

[2] Prein J, ed. *Manual of Internal Fixation in the Cranio-Facial Skeleton.* Berlin: Springer-Verlag; 1998.

Handling of Instruments

Warnings and Precautions

Warning: **Instruments, screws, and cut plates may have sharp edges or moving joints that may pinch or tear the user's glove or skin.**

Precautions:

- **Minimize notching or scratching of the device during contouring. These factors may produce internal stresses which may become the focal point for eventual breakage of the implant.**
- **Avoid deburring plates above the surgical site.**

1. Cutting pliers

Instruments

03.503.079	MatrixMANDIBLE Small Plate Cutter
329.148.05	Replacement Plate Holding Insert

Open the jaws of the cutter and place the plate bar section in the angle slot. Confirm that the bar section is centered. Squeeze the handles together to cut the plate. The elastomeric insert will hold the free section of plate until the cutter is released. To remove any burr, rub the plate back and forth on the deburring rasp marked "DEBURR."

Special cleaning instructions
Following each use it is recommended to remove the elastomeric plate-holding insert for cleaning and sterilization. Insert a round cleaning instrument less than 3 mm in diameter into the hole opposite the elastomeric insert, and push the insert out of its slot.

Clean the elastomeric inserts and store them where indicated in the instrument tray for system (306.731). If the elastomeric insert shows signs of excessive wear, replace it with a new one. For detailed cleaning and sterilization instructions, please refer to the "Indications/Contraindications, Sterilization" chapter in this document.

In the OR, while applying sterile technique, manually re-install the plate-holding elastomeric insert prior to using the cutter in surgery.

2. Short cut plate cutters (required in pairs)

Instrument

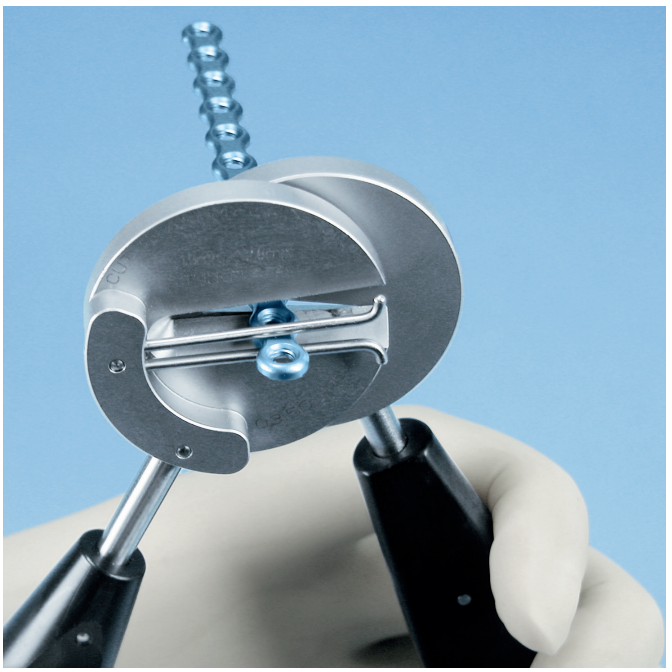
03.503.057	MatrixMANDIBLE Short Cut Plate Cutter (two required)

Place the selected plate into the slot in one of the cutters and slide it until the bar between the plate holes is wedged into the slot.

Place the flat face of the second short cut against the flat face of the first with its slot positioned over the plate. Slide this cutter in the direction of the plate until it also wedges against the plate.

Ensure that the plate bar is centered with the flat faces of the cutters, then grab the two handles in one hand and squeeze to rotate the cutters until the plate is cut.

Precaution: **Minimize notching or scratching of the implant during contouring. These factors may produce internal stresses which may become the focal point for eventual breakage of the implant.**



Deburr the cut portion of the plate as needed by rubbing sharp corners/edges in the recessed diamond file located in the handle.

3. Combination benders

Instrument

03.503.056	MatrixMANDIBLE Combination Bender

In-plane bending
Place the plate into the jaws marked "First Step" (as shown on the laser etch). Squeeze the handles together to achieve the desired in-plane bend. If additional contouring is desired, then continue sliding the plate through the bender, making small incremental bends.

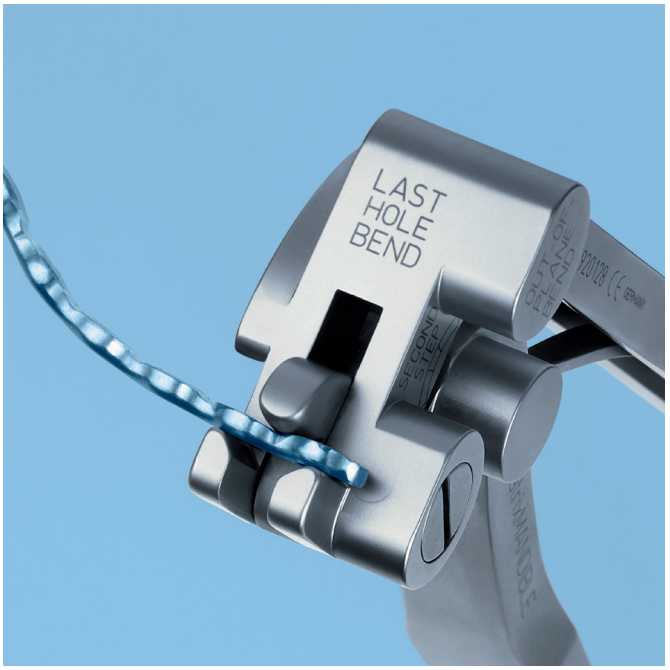
Out-of-plane bending

Place the plate that was previously bent in-plane into the feature marked "Second Step" (as shown on the laser etch). Squeeze the handles together to achieve the desired out-of-plane bend. If additional contouring is desired, then continue sliding the plate through the bender, making small incremental bends.

Bending the last segment of a plate

Place the MatrixMANDIBLE Plate in the "duckbill" end of the Combination Benders, with underside of the plate bar section facing the center bending feature. Squeeze the handles together to make the desired bend. If additional out-of-plane is required, then slide the plate to the next bar section and repeat, making small incremental bends.

Precaution: **Do not use threaded drill guides as benders.**



4. Bending iron for MatrixMANDIBLE Plates

Instruments

03.503.077	MatrixMANDIBLE Plate Bending Iron, left
03.503.078	MatrixMANDIBLE Plate Bending Iron, right

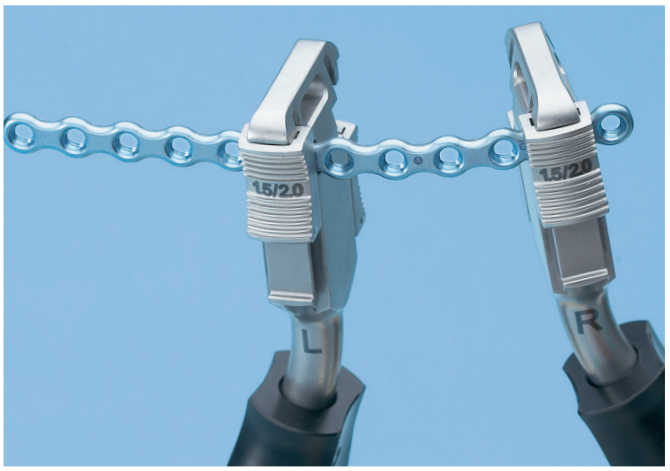
In-plane bending
Position the plate in the appropriate pocket of either bending iron, then in the pocket of the other. Appropriate plate pocket is etched with allowable plate thickness. Move the slider over top of the plate to secure it in the pockets.

Keeping the handles in-plane, make the desired in-plane bend.

Out-of-plane bending

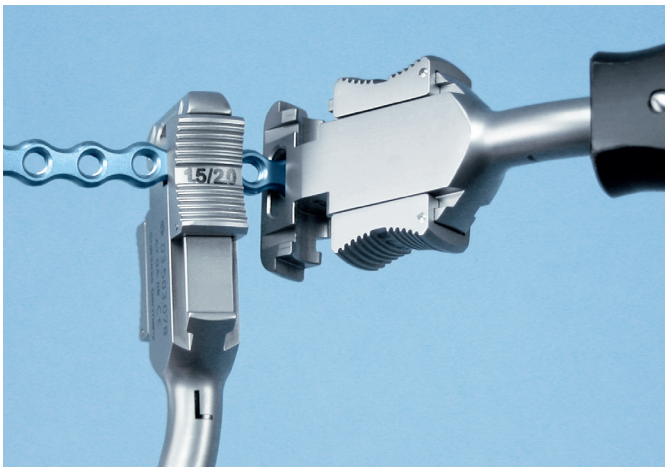
Option 1
Position and secure the plate in the appropriate pocket of either bending iron as shown previously, then use the other bending iron to make the desired out-of-plane bend.

Option 2
Place the plate through the slots in the head of the irons. Rotate the benders outward to achieve the desired outof-plane bend (not pictured).



Torsional bending
Position and secure the plate in the appropriate jaw pocket of either bending iron, then in the jaws of the other bending iron, and apply a twisting motion until achieving the desired torsional bend.

Bending the last segment of a plate
Position and secure the plate in the appropriate pocket of either bending iron, then insert the end of the plate into the slot of the other bending iron and make the desired bend. Two holes must be visible to allow sufficient clearance for making a last hole bend.



5. Depth gauge

Instruments

03.503.036	MatrixMANDIBLE Depth Gauge
03.503.085	Depth Gauge, for 2.0 mm–3.0 mm screws, polymer handle

After drilling bicortically, insert the tip of the depth gauge through the selected plate hole.

Press the slider forward through the hole so that the tip passes the far cortex.

Pull the slider back ensuring the hooked tip catches on the far cortex of the bone and the base of the depth gauge is pressed firmly against the plate.

The arrow on the slider points to an etched line representing the screw length.

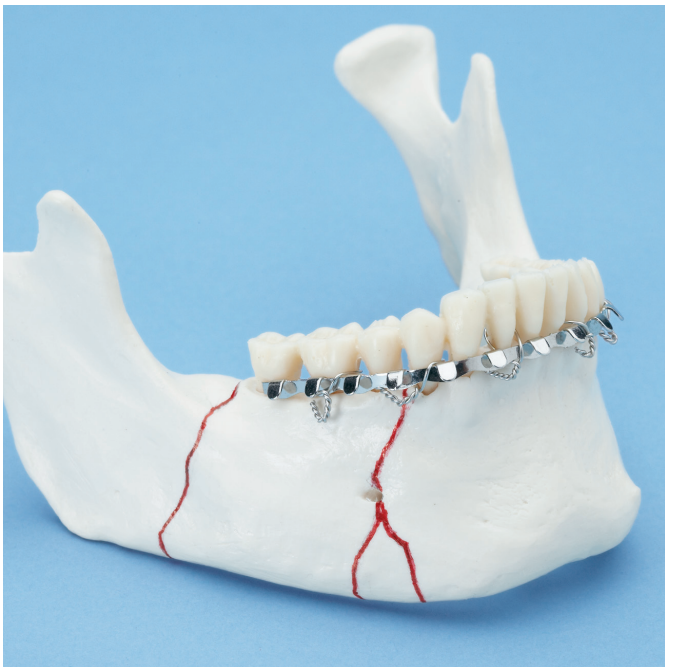
Note: **A screw 2 mm longer may be chosen to ensure full bicortical purchase.**

1. Exposure and reduction

Instruments

	Bone Reduction Forceps
398.985	Large
398.986	Small
398.987	Small, straight
398.98*	With points
03.503.092*	Angled, large
03.503.094*	Small with Toe-In Tip

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



* Also available.

2. Select and prepare implants

Instruments

03.503.034	Mini Plate Holder, long

Select the appropriate plate depending on indication (see preceding pages). Orient the plate so that the top side of the plate is facing out.

Determine the appropriate screw size and type, locking or nonlocking. It is recommended that screws of the same color as the selected plate are used.

Precautions:

- **2.0 mm diameter screws should only be used with a blue or gold plate if inserted into a bone graft, or if bone volume does not permit placement of a larger screw.**
- **To ensure sufficient thread purchase, only use screws of 5 mm or greater length for fixation of 2.5 mm and 2.8 mm thick plates.**
- **After implant placement is complete, discard any fragments or modified parts in an approved sharps container.**

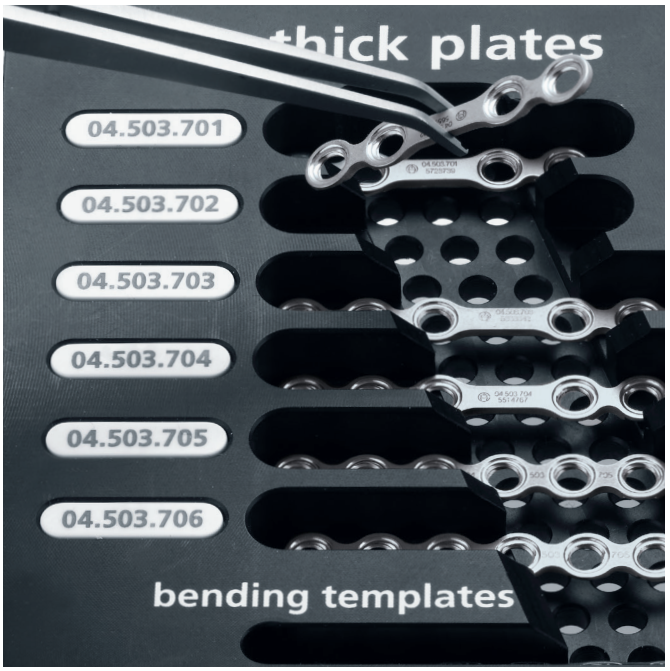
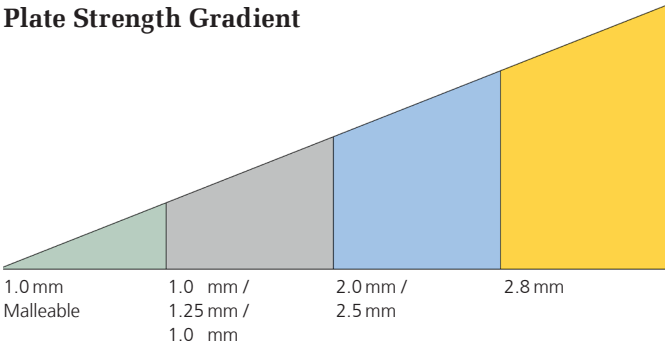


Plate Strength Gradient



Plates	Recommended Screw	Typical Application
Silver Plates (1.0 mm, 1.25 mm, 1.5 mm thick)	Silver screws (2.0 mm)	Simple fractures
Silver-Green Plates (1.0 mm thick Malleable)		
Light Blue Plates (2.0 mm and 2.5 mm thick)	Light blue screws (2.4 mm)	Complex fractures and reconstruction
	Pink screws (2.7 mm emergency)	Fractures and reconstruction
Gold Plates (2.8 mm thick)	Gold screws (2.9 mm)	Reconstruction

Optional technique

Instruments

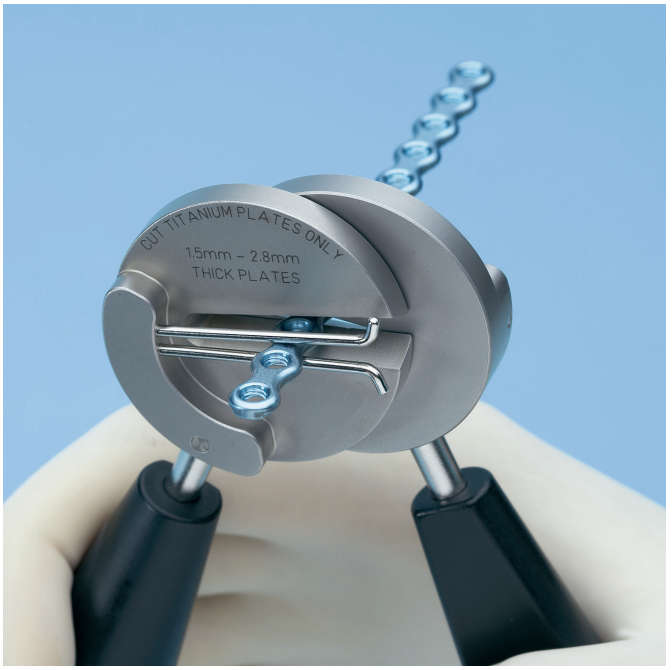
03.503.057	MatrixMANDIBLE Short Cut Plate Cutter (two required)
03.503.079	MatrixMANDIBLE Small Plate Cutter

Cut plate to length if needed Small plates (1.0 mm, 1.25 mm and 1.5 mm thick) can be cut using the small plate cutter. A manual deburring feature is provided on the bottom of the cutter if deburring is needed.

Note: The elastomeric insert helps to retain the plate after cutting. These should be removed during cleaning and held in the dedicated case bin during sterilization.

Plates 1.5 mm thick and larger (2.0 mm, 2.5 mm, 2.8 mm) can be cut using two short cut plate cutters. A manual deburring feature is provided in the handle of each cutter if deburring is desired.

Plate Thickness	Small Plate Cutter 03.503.079	Short Cut Plate Cutter 03.503.057
1.0 mm Malleable		
1.0 mm		
1.25 mm		
1.5 mm		
2.0 mm		
2.5 mm		
2.8 mm		

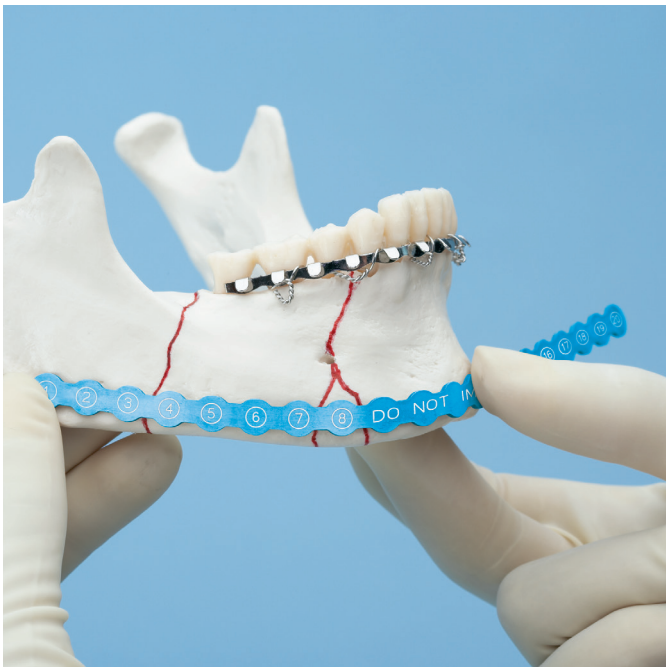


3. Select and form bending template

Instruments

03.503.160– 03.503.184	MatrixMANDIBLE Bending Templates

Select the appropriate shape- and length-bending template, and form it to the bony anatomy. Orient the bending template so the hole numbers are visible.



Precautions:

- **Stable fixation requires a minimum of 2–3 screws per segment.**
- **When using 2.5 mm and 2.8 mm reconstruction plates as a bridging device with 2.4 mm or 2.9 mm locking screws, allow for four screws per segment. If limited bone length or poor bone quality exists, a minimum of three 2.9 mm locking screws should be used.**

4. Contour plate

Plate Thickness	Plate Benders for Midface Plates 03.503.038	Plate Bending Pliers 03.503.040/.041	Combination Benders 03.503.056	Plate Bending Irons 03.503.077/.078
1.0 mm Malleable				
1.0 mm				
1.25 mm				
1.5 mm				
2.0 mm				
2.5 mm				
2.8 mm				

Instruments

	MatrixMANDIBLE Plate Bending Pliers
03.503.040	right
03.503.041	left

All plates can be contoured using the bending pliers.

Contour the plate to the template. Make final adjustments to match the bony anatomy. An exact match is not required when using locking screws because plate stability is not dependent on plate-to-bone contact when screws are locked.

Note: **Extra care should be taken to match the anatomy when nonlocking screws will be used.**

Precaution:

- **Avoid reverse bends as it may weaken the plate and lead to premature implant failure.**
- **Avoid sharp bends. Sharp bends include a single out-of-plane bend of >30 degrees between two adjacent holes.**

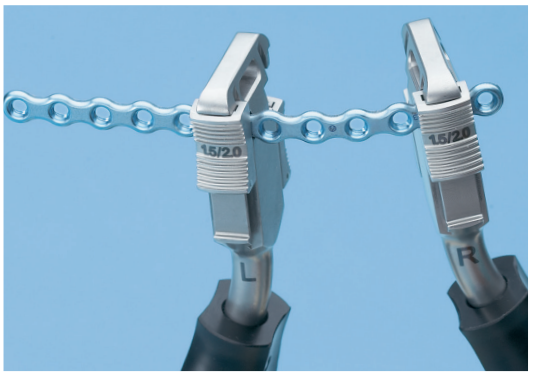
Optional instruments

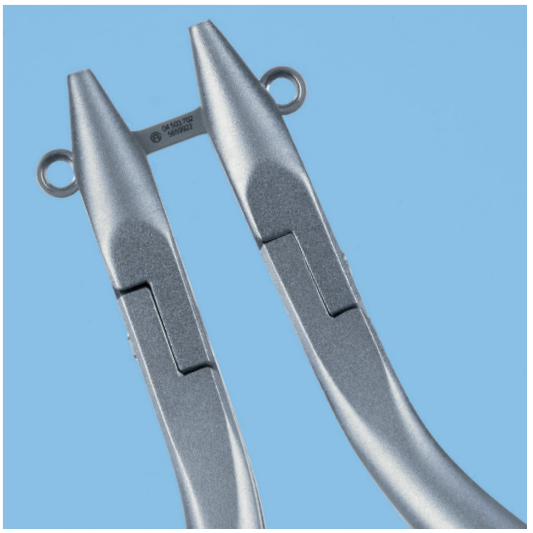
03.503.056	MatrixMANDIBLE Combination Bender
03.503.077	MatrixMANDIBLE Plate Bending Iron, left
03.503.078	MatrixMANDIBLE Plate Bending Iron, right
03.503.080	MatrixMANDIBLE Bending Insert
03.503.038	Plate Bending Pliers for Midface plates (two required)

Plates 1.5 mm thick and larger can be contoured using the combination benders, in-plane and out-of-plane. For torsional bends, use either the bending pliers or the bending irons. Plates should be bent in a stepped process. Perform in-plane bends first, out-of-plane bends second, and torsional bends last.

Notes

- **For out-of-plane bends >30°, perform bend across multiple hole segments. This can be achieved by first using the "OUT-OF-PLANE BEND" feature of the combination bender, then bending to the desired angle.**
- **If the Condylar Head Add-On System will be used, the last three-hole segments of the plate where the condylar head attaches should not be bent.**
- **When using the MatrixMANDIBLE Combination Bender, follow the steps as shown on the instrument. The "Last Hole Bend" feature should only be used for bending the last hole of the plate.**





Prior to contouring the plate to the patient's anatomy, bending inserts may be threaded into the plate holes to prevent hole deformation. For bends that exceed the range typical for adapting to the mandible (e.g. >20° in torsion and in-plane bending, and >30° out-of-plane bending), it is recommended to use bending inserts. Use a MatrixMANDIBLE Screwdriver Blade to thread and fully tighten these into the selected plate hole. Bend the plate to the desired geometry. Once the proper bend is achieved (and before affixing the plate to the bone), remove the bending inserts.

Note: **Bending inserts are made from biocompatible implant grade material (Ti-6Al-7Nb). If bending insert becomes stuck in plate, the plate may be implanted with the insert.**

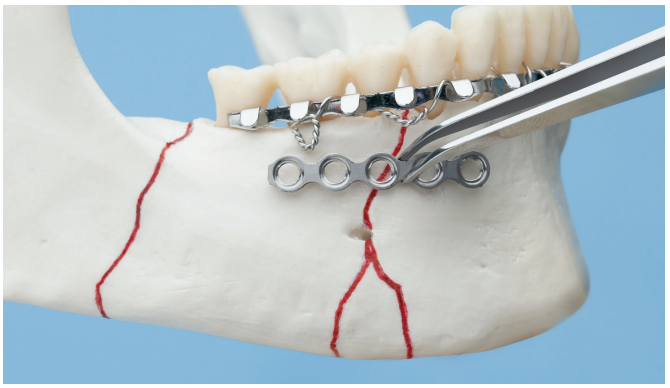
5. Position the plate

Instruments

03.503.034	Mini Plate Holder, long
03.503.062	MatrixMANDIBLE Plate Introducing Forceps

Place the plate over the fracture or osteotomy site.

Use the Plate Introducing Forceps for remote placement, if desired.



Precaution

- **Avoid placing the holes over the nerve or tooth root.**
- **If plate requires placement over nerve or tooth root, drill monocortically using the appropriate drill bit with stop.**

Note: When self-drilling screws are used in dense cortical bone, it may be necessary to predrill with 1.5 mm drill bit.

Optional instrument

03.503.058	MatrixMANDIBLE Articulating Plate, Introducer with tip

Plate Thickness	Articulating Plate Introducer 03.503.058	Mini Plate Holder, long 03.503.034	MatrixMANDIBLE Plate Introducing Forceps 03.503.062
1.0 mm Malleable			
1.0 mm			
1.25 mm			
1.5 mm			
2.0 mm			
2.5 mm			
2.8 mm			

6. Drill the first hole

Three options are available to meet the preferences of the surgeon.

Precautions

- **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 pullout force, increased ease of the screws stripping in bone, suboptimal fixation, and/or the need for emergency screws.**
- **Avoid damaging the plate threads with the drill.**
- **Always irrigate during drilling to avoid thermal damage to the bone.**
- **Irrigate and apply suction for removal of debris potentially generated during implantation or removal.**
- **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.**
- **Handle devices with care and dispose of worn bone cutting instruments in a sharps container.**

Note: If drill bit breaks, burr around drill bit fragment until access to fragment is possible and fragment can be retrieved from the bone.

Drill size guide

Screw diameter (mm)	Drill bit diameter (mm)	
2.0	1.5	
2.4	1.8	
2.7 (Emergency)	n/a	n/a
2.9	2.4	

Option 1 – Cannula and obturator

Instruments

03.503.045	MatrixMANDIBLE Trocar Drill Guide
03.503.047	MatrixMANDIBLE Threaded Trocar Drill Guide
	MatrixMANDIBLE Calibrated Drill Bits, J-latch, 125 mm*
03.503.476	1.5 mm
03.503.477	1.8 mm
03.503.478	2.4 mm
397.211	Universal Trocar Handle
397.213	2.0 mm Cannula and Obturator

The cannula and obturator may be used with any mandibular approach.

For the transbuccal approach, after creating a stab incision, pass the cannula with obturator carefully through the soft tissue over the fracture site, then remove the obturator.

With the plate positioned near the planned fixation site, insert either the threaded or standard drill guide and press into place.

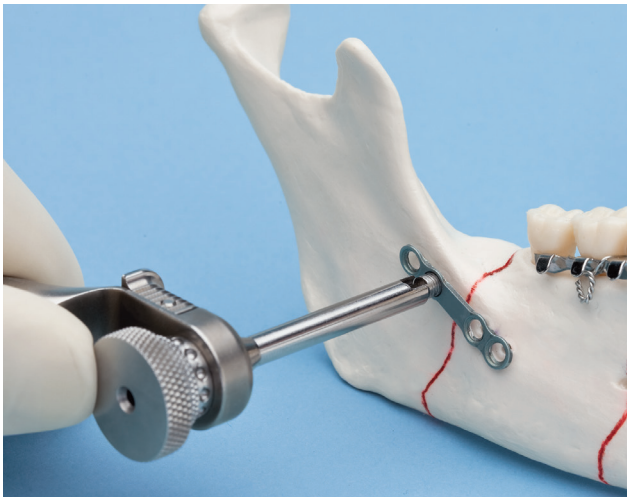
Register and align the cannula tip in the plate hole intended for the first screw (closest to the fracture or osteotomy line). If using the threaded drill guide, thread into plate.

To achieve optimal angular stability with locking screws, the hole must be drilled at a right angle to the plate hole. However, a certain amount of variation can be tolerated.

Note: **Locking screws may be placed at approximately 10º–15° off-axis. Screw head threads may become cross-threaded with the plate threads in this case.**

Precaution: **Do not use threaded drill guide to bend plate.**

Note: **For trauma applications locking screws may be placed at approximately 10 degrees off axis while maintaining locking capabilities. A small decrease in angular stability can be expected. Note, however, that maximum angular stability with locking is very high.**



* Mini quick coupling drill bits are also available (03.503.479, 03.503.480, and 03.503.481).

With the correct diameter-calibrated trocar drill bit, drill directly through the drill guide. Depth of drilling can be approximated by observing where the colored rings on the drills match the top surface on the drill guide and correlating these to the chart in the trocar module.

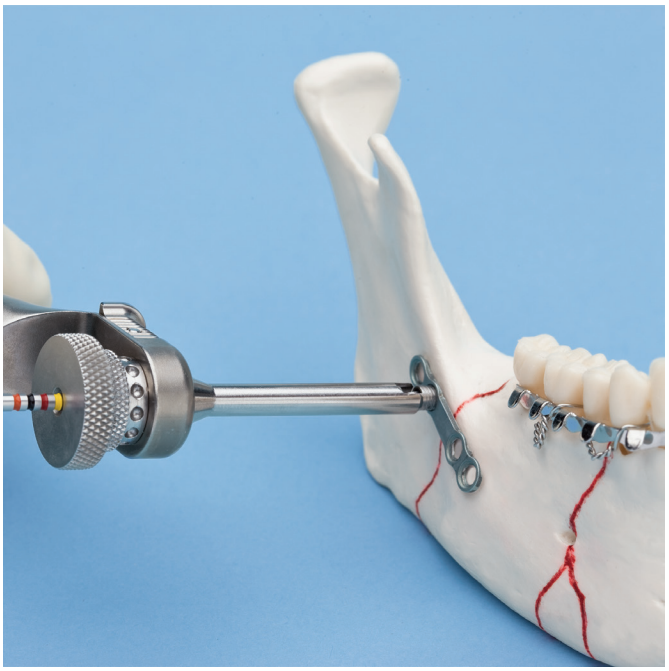
Note: **Add 2 mm to the determined length of the screw to ensure full bicortical purchase.**

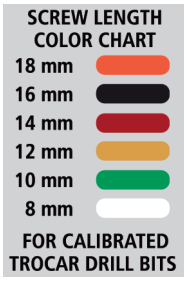
Remove the drill guide before placing screw.

Three different cheek retractor options are available for use with the 2.0 mm cannula.

Optional instruments

397.232	Malleable C-Retractor
397.42	2.0 mm Cheek Retractor Blade
397.43	2.0 mm Cheek Retractor Ring





Option 2 – Threaded drill guides, short

Instruments

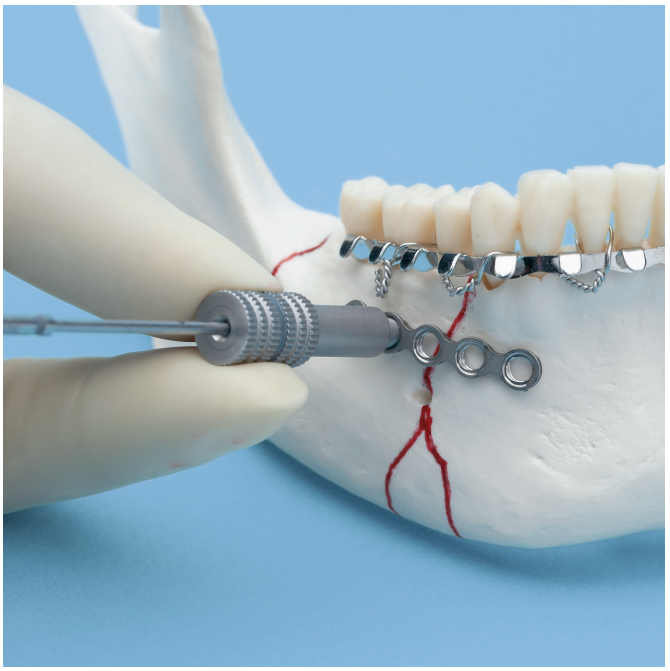
	MatrixMANDIBLE Threaded Drill Guides
03.503.043	1.5 mm, short
03.503.044	1.8 mm, short
03.503.046	2.4 mm, short

	MatrixMANDIBLE Drill Bits, J-latch
03.503.451	1.5 mm, 90 mm
03.503.461	1.8 mm, 90 mm
03.503.471	2.4 mm, 90 mm

If wide exposure is available, use the appropriate diameter short-threaded drill guide. Rotate the drill guide clockwise to engage the threads into the plate. Begin with the plate hole closest to the fracture or osteotomy line.

Note: **Drill guides are color-coded to match the appropriate screw size.**

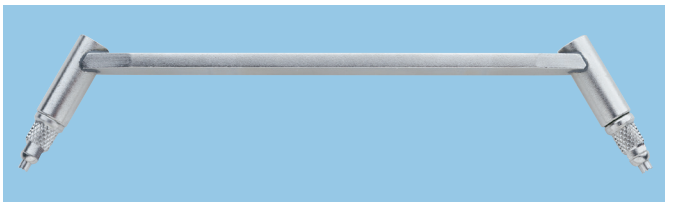
Precaution: **Do not use threaded drill guide to bend plate.**



Drill size guide

Guide number	Screw diameter (mm)	Drill bit diameter (mm)	
03.503.043	2.0	1.5	
03.503.044	2.4	1.8	
n/a	2.7 (Emergency)	n/a	n/a
03.503.046	2.9	2.4	

Option 3 – Universal drill guide



Instruments

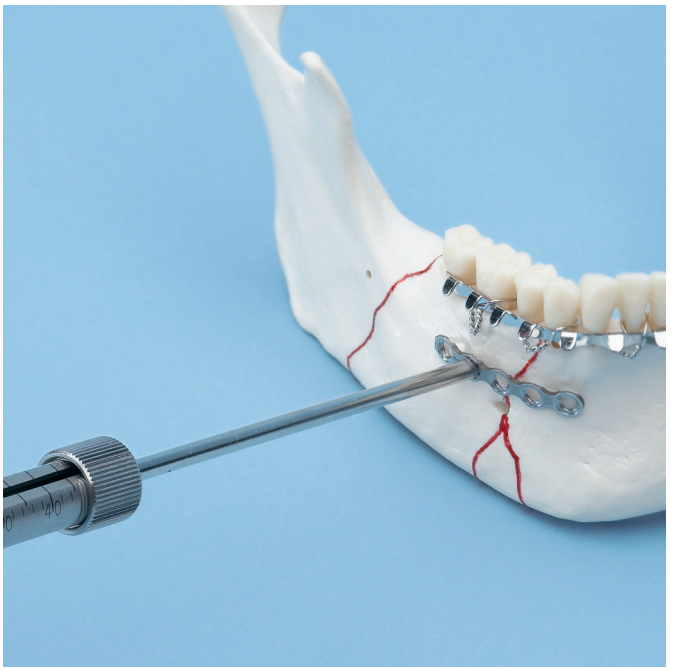
	MatrixMANDIBLE Drill Bits, J-latch
03.503.451	1.5 mm, 90 mm
03.503.461	1.8 mm, 90 mm
323.204	Universal Drill Guide

The universal drill guide may be used when drilling for 2.0 mm or 2.4 mm diameter screws, with good visualization available. It must be used when compression is desired in the DCP Plates.

Note: For compression in DCP Plates, use standard AO compression plating technique.[1,2]

If using locking screws, align the drill guide with the plate so that it is reasonably centered in all planes. The drill guide should be pressed firmly to center it in the plate hole.plate.

7. Determine screw length



Instrument

03.503.036	MatrixMANDIBLE Depth Gauge

Determine the appropriate screw length using the depth gauge.

Note: Add 2 mm to the determined length of the screw to ensure full bicortical purchase.

[1] Müller ME, Allgöwer M, Schneider R, Willenegger H. *Manual of Internal Fixation.* 3rd ed. Berlin, Heidelberg, New York: Springer-Verlag; 1991

[2] Prein J, ed. *Manual of Internal Fixation in the Cranio-Facial Skeleton.* Berlin: Springer-Verlag; 1998.

8. Insert the screw

Instruments

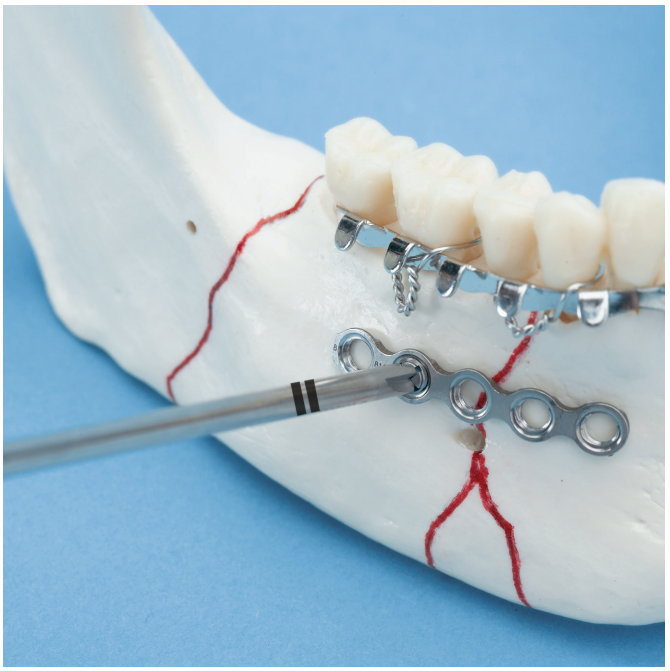
03.503.070 03.503.071 03.503.072	MatrixMANDIBLE Self-Retaining Screwdriver Blades, short medium long
03.503.073	MatrixMANDIBLE Self-Retaining Fixed Handle Screwdriver
03.503.066 03.503.067	MatrixMANDIBLE Screwdriver Blade, short MatrixMANDIBLE Spring Holding Sleeve, short
03.503.068 03.503.069	MatrixMANDIBLE Screwdriver Blade, long MatrixMANDIBLE Spring Holding Sleeve, long
311.004*	Fixed-Swivel Screwdriver Handle
311.007	Screwdriver Handle with hex coupling, large
311.023	Ratcheting Screwdriver Handle

Insert the proper length locking or nonlocking screw through the plate and tighten until secure.

Notes

- **To engage the screw on the blade, align the blade over the cruciform recess and slowly rotate it COUNTERCLOCKWISE until the blade drops into the recess; firmly press the blade to fully seat it into the screw. A half COUNTERCLOCKWISE rotation of the engaged screwdriver facilitates the screw removal from the clip.**
- **When using a MatrixMANDIBLE Spring Holding Sleeve, tilt or shift the blade after engaging the screw to allow the holding sleeve to grasp the screw head.**

Precaution: **Tighten screws in a controlled manner. Applying too much torque to the screws may cause screw/plate deformation, or bone stripping.**



*Also available

9. Drill and place remaining screws

Insert the second screw on the opposite side of the fracture or osteotomy site as described in Step 8.

Insert all remaining screws alternating to each side of the mandible. Securely tighten all screws unless resection is to follow.

Optional Techniques for Bone Resection

1. Resect mandible

Instruments

	MatrixMANDIBLE Screwdriver Blades, self-retaining
03.503.070	short
03.503.071	medium
03.503.072	long
03.503.073	MatrixMANDIBLE Fixed Handle Screwdriver, self-retaining
306.745	Reconstruction Screw Caddy Insert and Tray
311.004*	Fixed-Swivel Screwdriver Handle
311.007	Screwdriver Handle with hex coupling, large
311.023	Ratcheting Screwdriver Handle

Once the plate is in place, remove the plate and screws, taking note of each screw's placement. The screw caddy provided in the large plate module may be used for this purpose.

Resect the mandible.

*Also available

2. Replace implants

Place the plate back onto the mandible in its original position. Reinsert each predetermined screw. Check all screws to ensure a secure fit in the plate.

3. Apply bone graft[1]

1.5 mm thick reconstruction plates (color-coded silver)
A vascularized bone graft must be applied primarily in a single-step reconstruction after resection of a tumor, osteomyelitis, or osteonecrosis.

2.0 mm thick reconstruction plates (color-coded light blue)
A vascularized bone graft must be applied primarily in a single-step reconstruction after resection of a tumor, osteomyelitis, or osteonecrosis.

2.5 mm thick reconstruction plates (color-coded light blue)
A non-vascularized bone graft may be applied for a primary reconstruction. May also be used to temporarily bridge continuity defects without bone graft, prior to a secondary reconstruction.

2.8 mm thick reconstruction plates (color-coded gold)
May be used to bridge continuity defects without bone graft, prior to a secondary reconstruction.

Note: Plate fractures are possible when any plate bears the entire functional load for an extended period. The implantation of bone graft, immediately or at a later date, is necessary to support the construct.

[1] Prein J, ed. Manual of Internal Fixation in the Cranio-Facial Skeleton. Berlin: Springer-Verlag; 1998.

MatrixMANDIBLE Plates

1.0 mm thick (silver)
1.0 mm thick, malleable (green-gray)

04.503.701	Titanium MatrixMANDIBLE Mini Plate, Tension Band, 1.0 mm thick, 2 × 2 holes, narrow, malleable	
04.503.702	Titanium MatrixMANDIBLE Mini Plate, Tension Band, 1.0 mm thick, 2 × 2 holes, narrow	
04.503.703	Titanium MatrixMANDIBLE Mini Plate, Tension Band, 1.0 mm thick, 3 × 3 holes, narrow, malleable	
04.503.704	Titanium MatrixMANDIBLE Mini Plate, Tension Band, 1.0 mm thick, 3 × 3 holes, narrow	
04.503.750	Titanium MatrixMANDIBLE Mini Plate, Tension Band, 1.0 mm thick, 2 × 2 holes, broad, malleable	
04.503.751	Titanium MatrixMANDIBLE Mini Plate, Tension Band, 1.0 mm thick, 2 × 3 holes, broad, malleable	
04.503.752	Titanium MatrixMANDIBLE Mini Plate, Tension Band, 1.0 mm thick, 3 × 3 holes, broad, malleable	

Shown actual size.

1.0 mm thick (silver)
1.0 mm thick, malleable (green-gray)

04.503.783*	Titanium MatrixMANDIBLE Adaption Plate, 1.0 mm thick, 4 holes	
04.503.784*	Titanium MatrixMANDIBLE Adaption Plate, 1.0 mm thick, 6 holes	
04.503.705	Titanium MatrixMANDIBLE Adaption Plate, 1.0 mm thick, 12 holes	
04.503.706	Titanium MatrixMANDIBLE Adaption Plate, 1.0 mm thick, 20 holes	
04.503.707	Titanium MatrixMANDIBLE Box Plate, malleable, 1.0 mm thick, 4 holes	
04.503.708	Titanium MatrixMANDIBLE Strut Plate, malleable, 1.0 mm thick, 8 holes	
04.503.709	Titanium MatrixMANDIBLE Strut Plate, curved, mini, malleable, 1.0 mm thick, 8 holes	

Shown actual size.
*Also available.

1.0 mm thick (silver)
1.0 mm thick, malleable (green-gray)

04.503.780*	Titanium MatrixMANDIBLE Prebent Tension Band Plate, right, 1.0 mm thick, 2 × 2 holes	
04.503.781*	Titanium MatrixMANDIBLE Prebent Tension Band Plate, left, 1.0 mm thick, 2 × 2 holes	
04.503.830*	Titanium MatrixMANDIBLE Subcondylar Plate, Lambda, right, 1.0 mm thick	
04.503.831*	Titanium MatrixMANDIBLE Subcondylar Plate, Lambda, left, 1.0 mm thick	
04.503.832*	Titanium MatrixMANDIBLE Subcondylar Strut Plate, right, 1.0 mm thick	
04.503.833*	Titanium MatrixMANDIBLE Subcondylar Strut Plate, left, 1.0 mm thick	
04.503.834*	Titanium MatrixMANDIBLE Subcondylar Plate, Trapezoidal, 1.0 mm thick	

Shown actual size.
*Also available.

1.25 mm thick (silver)

04.503.710	Titanium MatrixMANDIBLE DCP Plate, 1.25 mm thick, 2 × 2 holes	
04.503.761*	Titanium MatrixMANDIBLE Plate, 1.25 mm thick, 2 × 2 holes	
04.503.711	Titanium MatrixMANDIBLE Crescent Plate, 1.25 mm thick, 2 × 2 holes	
04.503.712	Titanium MatrixMANDIBLE DCP Plate, 1.25 mm thick, 3 × 3 holes	
04.503.713	Titanium MatrixMANDIBLE Crescent DCP Plate, 1.25 mm thick, 3 × 3 holes	
04.503.714	Titanium MatrixMANDIBLE Angle DCP Plate, 1.25 mm thick, 3 × 3 holes	
04.503.756	Titanium MatrixMANDIBLE Plate, 1.25 mm thick, 12 holes	

Shown actual size.
*Also available.

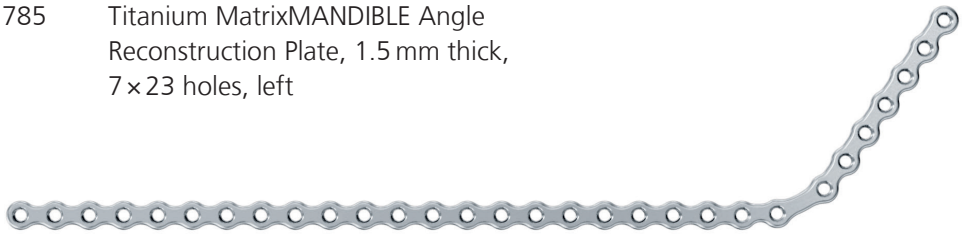
1.5 mm thick (silver)

04.503.715	Titanium MatrixMANDIBLE Plate, 1.5 mm thick, 6 holes
04.503.716	Titanium MatrixMANDIBLE Plate, 1.5 mm thick, 3 × 3 holes
04.503.717	Titanium MatrixMANDIBLE Plate, 1.5 mm thick, 12 holes
04.503.718	Titanium MatrixMANDIBLE Plate, 1.5 mm thick, 20 holes
04.503.721	Titanium MatrixMANDIBLE Angle Plate, 1.5 mm thick, 3 × 3 holes
04.503.722	Titanium MatrixMANDIBLE Crescent Plate, 1.5 mm thick, 3 × 3 holes
04.503.723	Titanium MatrixMANDIBLE DCP Plate, 1.5 mm thick, 2 × 2 holes
04.503.724	Titanium MatrixMANDIBLE DCP Plate, 1.5 mm thick, 3 × 3 holes

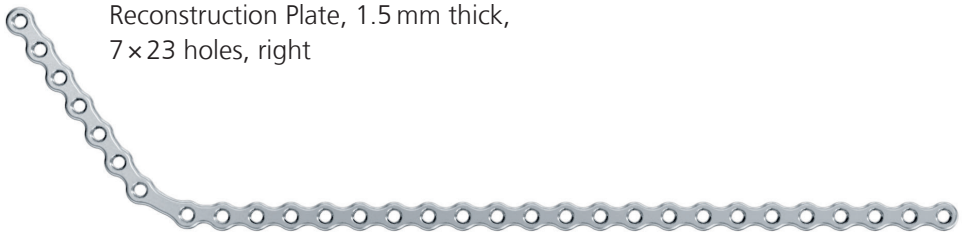
Shown actual size.

1.5 mm thick (silver)

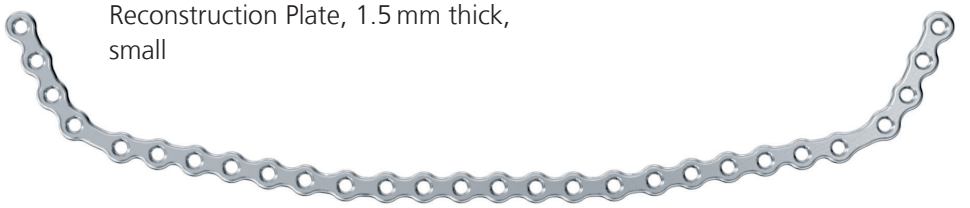
04.503.785 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 1.5 mm thick, 7 × 23 holes, left



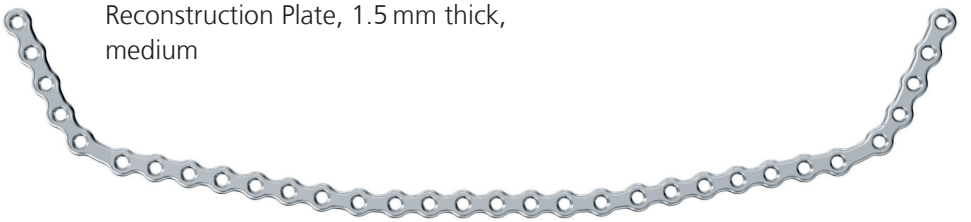
04.503.786 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 1.5 mm thick, 7 × 23 holes, right



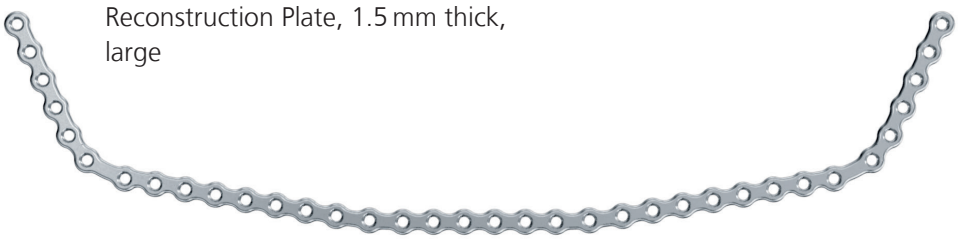
04.503.787 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 1.5 mm thick, small



04.503.788 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 1.5 mm thick, medium



04.503.789 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 1.5 mm thick, large



Shown actual size.

2.5 mm thick (light blue)

04.503.726	Titanium MatrixMANDIBLE Crescent Plate, 2.0 mm thick, broad, 2 × 2 holes	
04.503.727	Titanium MatrixMANDIBLE Crescent Plate, 2.0 mm thick, broad, 3 × 3 holes	
04.503.728	Titanium MatrixMANDIBLE Plate, 2.0 mm thick, 6 holes	
04.503.729	Titanium MatrixMANDIBLE Plate, 2.0 mm thick, 12 holes	
04.503.731	Titanium MatrixMANDIBLE Angle Plate, 2.0 mm thick, broad, 3 × 3 holes	

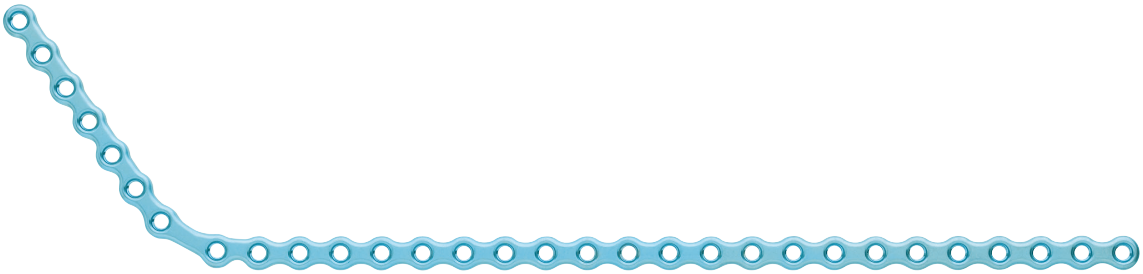
Shown actual size.

2.0 mm thick (light blue)

04.503.730 Titanium MatrixMANDIBLE Plate, 2.0 mm thick, 20 holes

04.503.732 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 2.0 mm thick, 7 × 23 holes, left

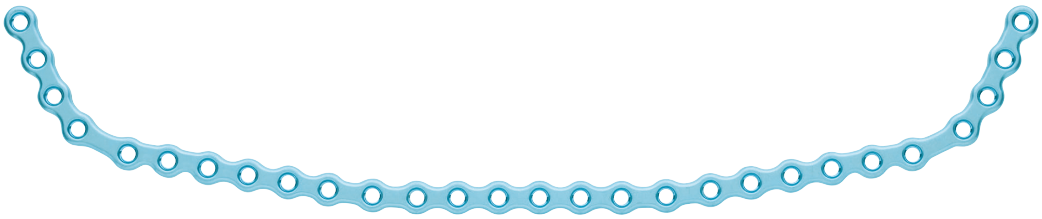
04.503.733 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 2.0 mm thick, 7 × 23 holes, right



Shown actual size.

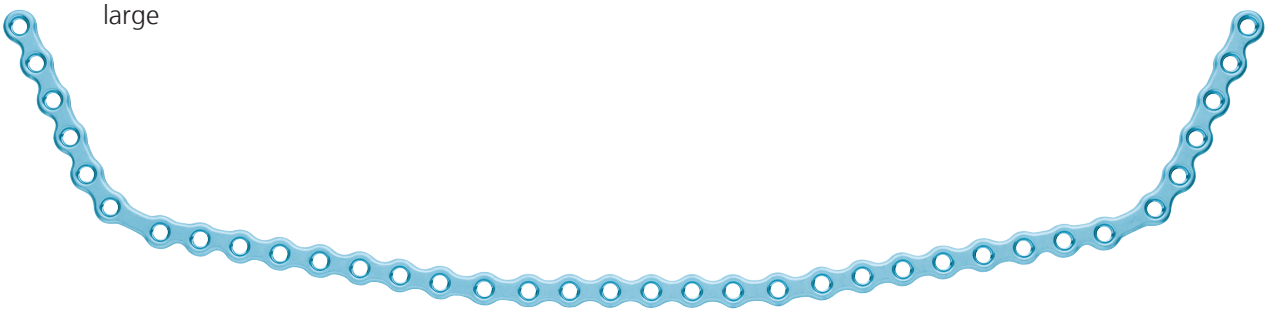
2.0 mm thick (light blue)

04.503.734 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 2.0 mm thick, small



04.503.735 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 2.0 mm thick, medium

04.503.736 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 2.0 mm thick, large



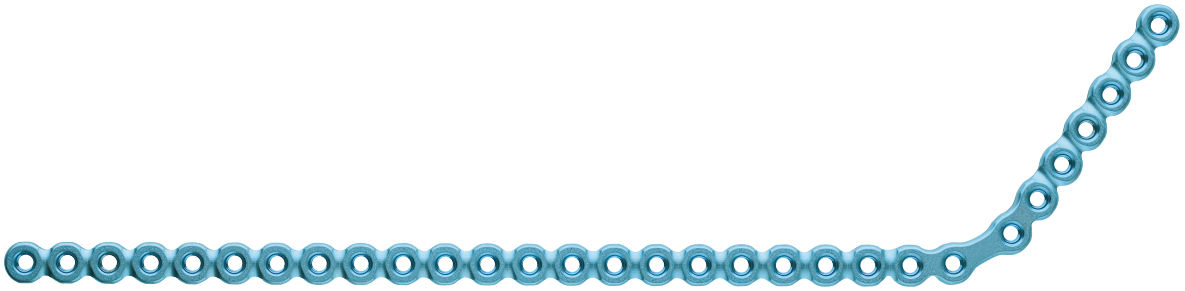
Shown actual size.

2.5 mm thick (light blue)

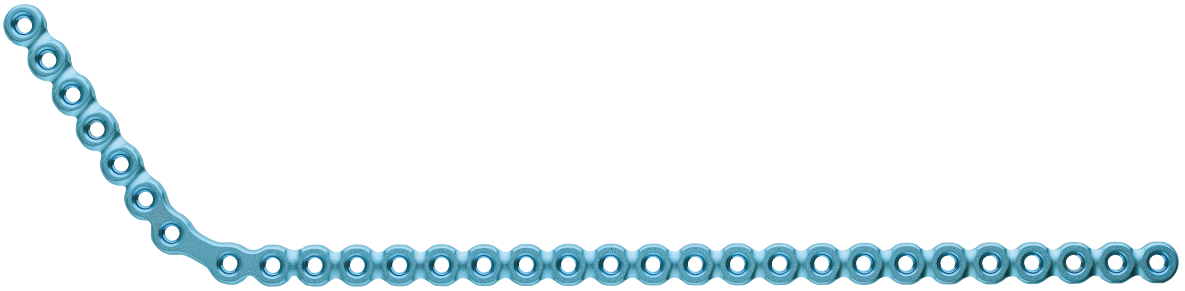
04.503.737 Titanium MatrixMANDIBLE Reconstruction Plate, 2.5 mm thick, 12 holes

04.503.738 Titanium MatrixMANDIBLE Reconstruction Plate, 2.5 mm thick, 20 holes

04.503.739 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 2.5 mm thick, 7 × 23 holes, left



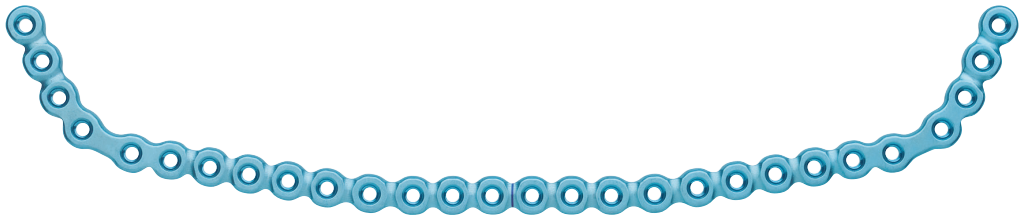
04.503.740 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 2.5 mm thick, 7 × 23 holes, right



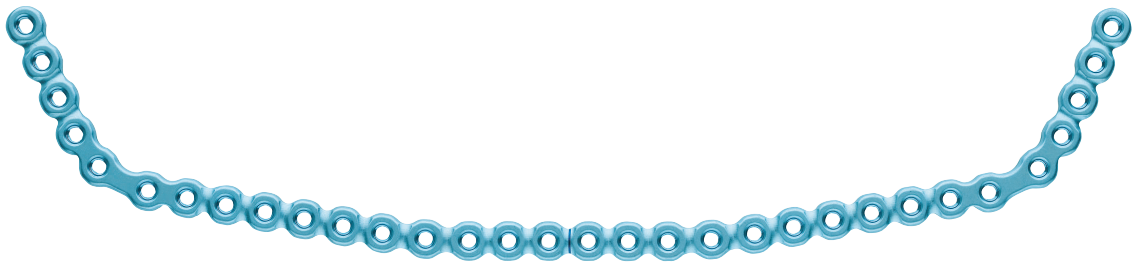
Shown actual size.

2.5 mm thick (light blue)

04.503.741 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 2.5 mm thick, small



04.503.742 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 2.5 mm thick, medium



04.503.743 Titanium MatrixMANDIBLE Double Angle Reconstruction Plate, 2.5 mm thick, large

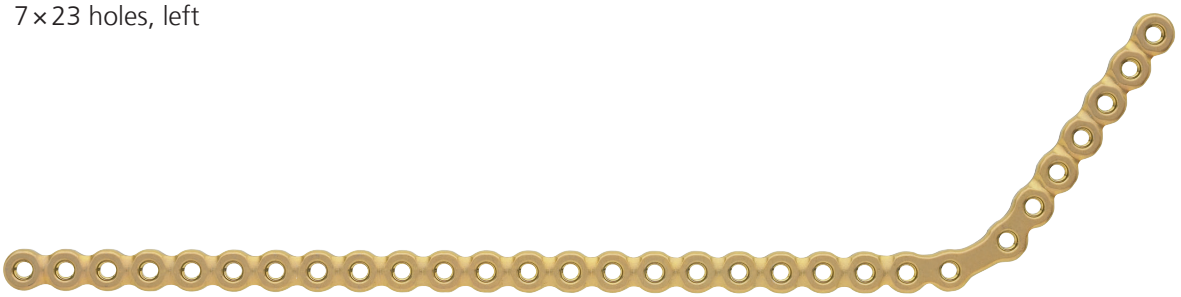
Shown actual size.

2.8 mm thick (gold)

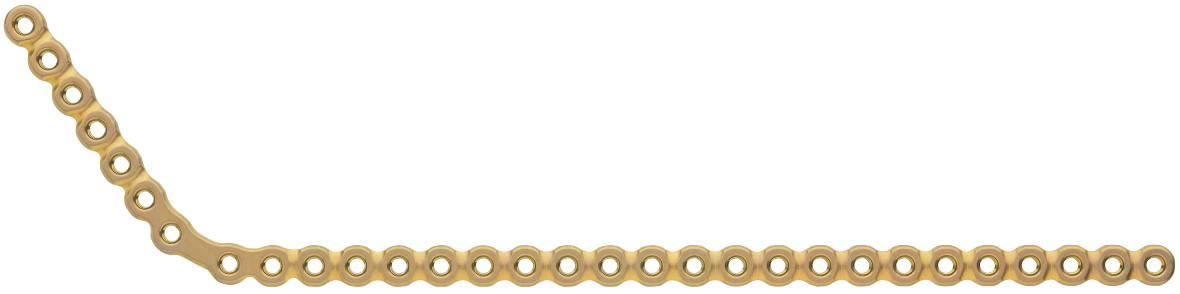
04.503.770 Titanium MatrixMANDIBLE Reconstruction Plate, 12 holes, 2.8 mm thick

04.503.771 Titanium MatrixMANDIBLE Reconstruction Plate, 20 holes, 2.8 mm thick

04.503.772 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 2.8 mm thick, 7 × 23 holes, left



04.503.773 Titanium MatrixMANDIBLE Angle Reconstruction Plate, 2.8 mm thick, 7 × 23 holes, right



Shown actual size.

Screws used with the MATRIXMANDIBLE Plates

2.0 mm Titanium MatrixMANDIBLE Cortex Screws

- Self-tapping tip
  - Standard pitch (1.0 mm)
  - Fine pitch (0.5 mm) 4–8 mm length
- Self-drilling tip
  - Standard pitch (1.0 mm), length 5–18 mm

2.0 mm Titanium MatrixMANDIBLE Locking Screws

- Threaded head
- Self-tapping tip
  - Standard pitch (1.0 mm), length 5–18 mm
- Self-drilling tip
  - Standard pitch (1.0 mm), length 6 and 8 mm

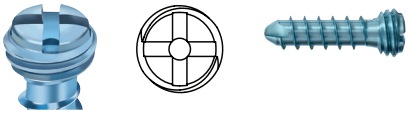
2.4 mm Titanium MatrixMANDIBLE Cortex Screws

- Self-tapping tip
- Standard pitch (1.0 mm), length 5–18 mm

Also available: Standard pitch (1.0 mm), length 20–40 mm

2.4 mm Titanium MatrixMANDIBLE Locking Screws

- Threaded head
- Self-tapping tip
- Standard pitch (1.0 mm), length 8–18 mm



2.7 mm Titanium MatrixMANDIBLE Emergency Cortex Screws

- Self-tapping tip
- Standard pitch (1.0 mm), length 5–18 mm

2.9 mm Titanium MatrixMANDIBLE Locking Screws

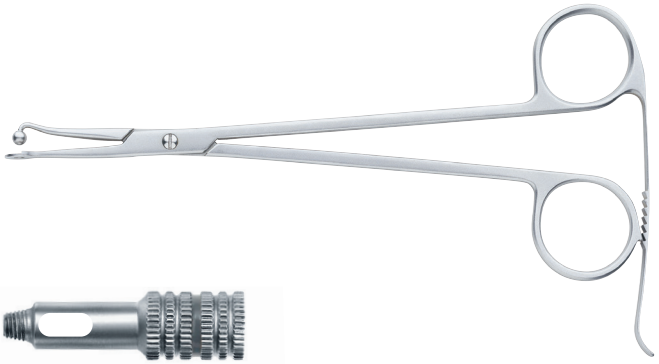
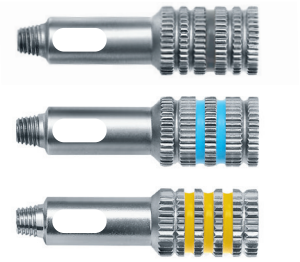
- Threaded head
- Self-tapping tip
- Standard pitch (1.0 mm), length 8–18 mm

Instruments

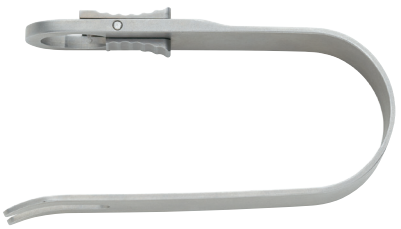
03.503.057	MatrixMANDIBLE Short Cut Plate Cutter, for use with 1.5 mm through 2.8 mm plates (two required)	
03.503.079	MatrixMANDIBLE Small Plate Cutter, for use with 1.0 mm, 1.25 mm and 1.5 mm plates	
329.148.05	Replacement Plate Holding Insert for Mandible Plate Bender/Cutters	
03.503.038	Plate Bender for Midface Plates (two required)	

03.503.040	MatrixMANDIBLE Plate Bending Pliers, right	
03.503.041	MatrixMANDIBLE Plate Bending Pliers, left	
03.503.056	MatrixMANDIBLE Combination Bender	
03.503.077 03.503.078	MatrixMANDIBLE Plate Bending Iron, left MatrixMANDIBLE Plate Bending Iron, right	
03.503.080	MatrixMANDIBLE Bending Insert, for use with MatrixMANDIBLE plates	
03.503.160– 03.503.185	MatrixMANDIBLE Bending Templates	

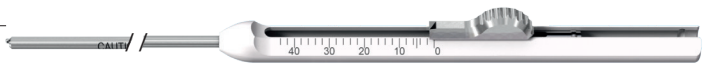
03.503.092	Bone Reduction Forceps, angled, large	
03.503.094	Bone Reduction Forceps, small with toe-in tip	
	Bone Reduction Forceps 398.985 Large 398.986 Small 398.987 Small, straight (shown)	
399.98	Reduction Forceps, with points, ratchet, 205 mm	

03.503.034	Mini Plate Holder, long	
03.503.058	MatrixMANDIBLE Articulating Plate Introducer with tip	
03.503.059	Plate Holding Tip, for MatrixMANDIBLE Articulating Plate Introducer	
03.503.062	MatrixMANDIBLE Plate Introducing Forceps	
	MatrixMANDIBLE Threaded Drill Guides 03.503.043 1.5 mm, short 03.503.044 1.8 mm, short 03.503.046 2.4 mm, short	
03.503.045	MatrixMANDIBLE Trocar Drill Guide	
03.503.047	MatrixMANDIBLE Threaded Trocar Drill Guide	

*Also available.

323.204	2.0 mm/2.4 mm Universal Drill Guide	
397.211	Universal Trocar Handle	
397.213	2.0 mm Cannula and Obturator	
397.232	Malleable C-Retractor	
397.42	2.0 mm Cheek Retractor Blade	
397.43	2.0 mm Cheek Retractor Ring	

*Also available.

03.503.036	MatrixMANDIBLE Depth Gauge	
03.503.085	Depth Gauge, for 2.0 mm–3.0 mm screws, polymer handle	
	MatrixMANDIBLE 1.5 mm Drill Bits, J-latch, 50 mm	
03.503.404*	with 4 mm stop	
03.503.406*	with 6 mm stop	
03.503.408	with 8 mm stop (shown)	
03.503.412*	with 12 mm stop	
	MatrixMANDIBLE Drill Bits, J-latch, 90 mm	
03.503.451	1.5 mm, for 03.503.043	
03.503.461	1.8 mm, for 03.503.044 (shown)	
03.503.471	2.4 mm, for 03.503.046	
	MatrixMANDIBLE Calibrated Drill Bits, J-latch, 125 mm, for use with drill guides 03.503.045 and 03.503.047	
03.503.476	1.5 mm (shown)	
03.503.477	1.8 mm	
03.503.478	2.4 mm	

	MatrixMANDIBLE Self-Retaining Screwdriver Blades	
03.503.070	Short	
03.503.071	Medium	
03.503.072	Long (shown)	
03.503.073	MatrixMANDIBLE Self-Retaining Fixed Handle Screwdriver	
311.007	Screwdriver Handle with hex coupling, large	
311.023	Ratcheting Screwdriver Handle	
311.004	Fixed Swivel Screwdriver Handle	
03.503.066	MatrixMANDIBLE Screwdriver Blade, short	
03.503.067	MatrixMANDIBLE Spring Holding Sleeve, short	03.503.067 03.503.066
03.503.068	MatrixMANDIBLE Screwdriver Blade, long	
03.503.069	MatrixMANDIBLE Spring Holding Sleeve, long	03.503.069 03.503.068

Additional Literature

MatrixMANDIBLE Preformed Reconstruction Plates
Technique Guide (DSUS/CMF/0514/0107)

Condylar Head Add-On System Technique Guide (J7340)

Screw Removal Set Technique Guide (J8569)

Nano User Guide (J11945)

Additional Disassembly Assembly Instructions

Part Number	Description	Document Number
03.503.036	MatrixMANDIBLE Depth Gauge	DAI DSUS/CMF/0414/0032
03.503.058	MatrixMANDIBLE Articulating Plate Introducer	DAI DSUS/CMF/0414/0035
03.503.067	MatrixMANDIBLE Holding Sleeve, Short	J7903
03.503.069	MatrixMANDIBLE Holding Sleeve, Long	J7903
03.503.085	Depth Gauge with Polymer Handle for 2.0 mm–2.9 mm Screws	J11701
323.204	2.0 mm/2.4 mm Universal Drill Guide	DAI DSUS/CMF/0414/0036
03.503.079	MatrixMANDIBLE Small Plate Cutter	J11668

MATRIXMANDIBLE Implant and Instrument Set (01.503.150)

Graphic Cases and Modules

306.701	Graphic Case for MatrixMANDIBLE System
306.731	Instrument Tray, for MatrixMANDIBLE System
306.732	Instrument Tray, for MatrixMANDIBLE System
306.733	Trocar Instrument Module, for MatrixMANDIBLE System
306.740	Small Plate Module for Matrix MANDIBLE System
306.742	Screw Module for MatrixMANDIBLE System
306.749	Large Plate Module for MatrixMANDIBLE System
	Screw Length Markers, 1 pkg. of 10 ea.
304.105	5 mm
304.106	6 mm
304.108	8 mm
304.110	10 mm
304.112	12 mm
304.114	14 mm
304.116	16 mm
304.118	18 mm

Label Sheets

306.704	Label Sheet Small Plate Module
306.705	Label Sheet Screw Module
306.706	Label Sheet Large Plate Module
306.735	Label Sheet for 306.731
306.736	Label Sheet for 306.732
306.744	Label Sheet for 306.733
306.762	Strength Gradient Label Sheet
690.612	Screw Length Label Sheet for Calibrated Drill Bits

Instruments

03.503.034	Mini Plate Holder, long
03.503.036	MatrixMANDIBLE Depth Gauge
03.503.040	MatrixMANDIBLE Plate Bending Pliers, right
03.503.041	MatrixMANDIBLE Plate Bending Pliers, left
	MatrixMANDIBLE Threaded Drill Guides
03.503.043	1.5 mm, short
03.503.044	1.8 mm, short
03.503.046	2.4 mm, short
03.503.045	MatrixMANDIBLE Trocar Drill Guide, for 397.213
03.503.047	MatrixMANDIBLE Threaded Trocar Drill Guide, for 397.213
03.503.056	MatrixMANDIBLE Combination Bender
03.503.057	MatrixMANDIBLE Short Cut Plate Cutter, for use with 1.5 mm through 2.8 mm plates, 2 ea.
03.503.062	MatrixMANDIBLE Plate Introducing Forceps
	MatrixMANDIBLE/THORAX Self-Retaining Screwdriver Blade
03.503.070	short
03.503.071	medium
03.503.072	long
03.503.073	MatrixMANDIBLE/THORAX Self-Retaining Fixed Handle Screwdriver
03.503.079	MatrixMANDIBLE Small Plate Cutter, for use with 1.0 mm, 1.25 mm and 1.5 mm plates
03.503.080	MatrixMANDIBLE Bending Insert, for use with MatrixMANDIBLE plates, 8 ea.
	MatrixMANDIBLE Bending Templates
03.503.160	for narrow tension band plates
03.503.161	for 1.0 mm broad tension band plates
03.503.162	for 1.0 mm thick adaption plates
03.503.163	for 1.25 mm thick straight plates
03.503.164	for 1.25 mm thick crescent plates, 2 × 2 holes
03.503.165	for 1.25 mm thick crescent plates, 3 × 3 holes
03.503.166	for 1.25 mm thick angle plates
03.503.167	for 1.25 mm thick adaption plates
03.503.168	for 1.5 mm thick straight plates
03.503.169	for 1.5 mm thick straight plates, 3 × 3 holes
03.503.170	for 1.5 mm thick angle plates, 3 × 3 holes
03.503.171	for 1.5 mm thick crescent plates, 6 holes
03.503.172	for 1.5 mm thick broad plates, 2 × 2/3 × 3 holes
03.503.173	for 2.0 mm broad crescent plates
03.503.174	for 2.0 mm thick straight plates
03.503.175	for 2.0 mm broad angle plates, 3 × 3 holes
03.503.176	for 2.0 mm thick angle reconstruction plates
03.503.177	for 2.0 mm double angle reconstruction plates, small
03.503.178	for 2.0 mm double angle reconstruction plates, medium
03.503.179	for 2.0 mm double angle reconstruction plates, large
03.503.180	for 2.5/2.8 mm straight reconstruction plates
03.503.181	for 2.5/2.8 mm angle reconstruction plates
03.503.182	for 2.5 mm double angle reconstruction plates, small
03.503.183	for 2.5 mm double angle reconstruction plates, medium
03.503.184	for 2.5 mm double angle reconstruction plates, large
03.503.408	MatrixMANDIBLE 1.5 mm Drill Bit, J-latch with 8 mm stop, 50 mm, 2 ea.
	MatrixMANDIBLE Drill Bits, J-latch, 90 mm, 2 ea.
03.503.451	1.5 mm, for use with 03.503.043
03.503.461	1.8 mm, for use with 03.503.044
03.503.471	2.4 mm, for use with 03.503.046
	MatrixMANDIBLE Calibrated Drill Bit, J-latch, 125 mm, for use with Drill Guides
03.503.045	and 03.503.047, 2 ea.
03.503.476	1.5 mm
03.503.477	1.8 mm
03.503.478	2.4 mm
311.007	Screwdriver Handle with hex coupling, large
311.023	Ratcheting Screwdriver Handle
323.204	2.0 mm/2.4 mm Universal Drill Guide
397.211	Universal Trocar Handle
397.213	2.0 mm Cannula and Obturator
397.232	Malleable C-Retractor
397.42	2.0 mm Cheek Retractor Blade
397.43 2.0 mm	cxCheek Retractor Ring
	Bone Reduction Forceps
398.985	large
398.986	small
398.987	small, straight

MatrixMANDIBLE Plates

MatrixMANDIBLE Plates, 2 ea.

	Mini Plates, Tension Band, 1.0 mm thick
04.503.701	2 × 2 holes, narrow, malleable
04.503.702	2 × 2 holes, narrow
04.503.703	3 × 3 holes, narrow, malleable
04.503.704	3 × 3 holes, narrow
04.503.750	2 × 2 holes, broad, malleable
04.503.751	2 × 3 holes, broad, malleable
04.503.752	3 × 3 holes, broad, malleable
	Adaption Plates, 1.0 mm thick
04.503.705	12 holes
04.503.706	20 holes
04.503.707	4 hole Box Plate, malleable, 1.0 mm thick
04.503.708	8 hole Strut Plate, malleable, 1.0 mm thick
04.503.709	8 hole Strut Plate, curved, malleable, 1.0 mm thick
04.503.710	DCP Plate, 1.25 mm thick, 2 × 2 holes
04.503.711	Crescent Plate, 1.25 mm thick, 2 × 2 holes
04.503.712	DCP Plate, 1.25 mm thick, 3 × 3 holes
04.503.713	Crescent DCP Plate, 1.25 mm thick, 3 × 3 holes
04.503.714	Angle DCP Plate, 1.25 mm thick, 3 × 3 holes
04.503.756	1.25 mm thick, 12 holes
04.503.715	1.5 mm thick, 6 holes
04.503.716	1.5 mm thick, 3 × 3 holes
04.503.717	1.5 mm thick, 12 holes
04.503.718	1.5 mm thick, 20 holes
04.503.721	Angle Plate, 1.5 mm thick, 3 × 3 holes
04.503.722	Crescent Plate, 1.5 mm thick, 3 × 3 holes
04.503.723	DCP Plate, 1.5 mm thick, 2 × 2 holes
04.503.724	DCP Plate, 1.5 mm thick, 3 × 3 holes
	Crescent Plates, 2.0 mm thick, broad
04.503.726	2 × 2 holes
04.503.727	3 × 3 holes
04.503.728	2.0 mm thick, 6 holes
04.503.729	2.0 mm thick, 12 holes
04.503.730	2.0 mm thick, 20 holes
04.503.731	Angle plate, 2.0 mm thick, broad, 3 × 3 holes
	Reconstruction Plates, 2.0 mm thick
04.503.732	Angle, left, 7 × 23 holes
04.503.733	Angle, right, 7 × 23 holes
04.503.734	Double Angle, small
04.503.735	Double Angle, medium
04.503.736	Double Angle, large
	Reconstruction Plates, 2.5 mm thick
04.503.737	12 holes
04.503.738	20 holes
04.503.739	Angle, left, 7 × 23 holes
04.503.740	Angle, right, 7 × 23 holes
04.503.741	Double Angle, small
04.503.742	Double Angle, medium
04.503.743	Double Angle, large
	Reconstruction Plates, 2.8 mm thick
04.503.770	12 holes
04.503.771	20 holes
04.503.772	Angle, left, 7 × 23 holes
04.503.773	Angle, right, 7 × 23 holes

MatrixMANDIBLE Screws

2.0 mm Titanium MatrixMANDIBLE Screws, self-tapping, 5/pkg.*

	Length (mm)	Qty.
04.503.405.05	5	1 pkg.
04.503.406.05	6	1 pkg.
04.503.408.05	8	1 pkg.
04.503.410.05	10	1 pkg.
04.503.412.05	12	1 pkg.
04.503.414.05	14	1 pkg.
04.503.416.05	16	1 pkg.
04.503.418.05	18	1 pkg.

2.0 mm Titanium MatrixMANDIBLE Locking Screws, self-tapping, 5/pkg.*

	Length (mm)	Qty.
04.503.605.05	5	4 pkgs.
04.503.606.05	6	4 pkgs.
04.503.608.05	8	4 pkgs.
04.503.610.05	10	4 pkgs.
04.503.612.05	12	4 pkgs.
04.503.614.05	14	4 pkgs.
04.503.616.05	16	2 pkgs.
04.503.618.05	18	2 pkgs.

2.4 mm Titanium MatrixMANDIBLE Screws, self-tapping, 5/pkg.*

	Length (mm)	Qty.
04.503.435.05	5	1 pkg.
04.503.436.05	6	1 pkg.
04.503.438.05	8	1 pkg.
04.503.440.05	10	1 pkg.
04.503.442.05	12	1 pkg.
04.503.444.05	14	1 pkg.
04.503.446.05	16	1 pkg.
04.503.448.05	18	1 pkg.

2.4 mm Titanium MatrixMANDIBLE Locking Screws, self-tapping, 5/pkg.*

	Length (mm)	Qty.
04.503.638.05	8	4 pkgs.
04.503.640.05	10	4 pkgs.
04.503.642.05	12	4 pkgs.
04.503.644.05	14	4 pkgs.
04.503.646.05	16	2 pkgs.
04.503.648.05	18	2 pkgs.

2.7 mm Titanium MatrixMANDIBLE Emergency Screws, self-tapping, 5/pkg.*

	Length (mm)	Qty.
04.503.465.05	5	1 pkg.
04.503.466.05	6	1 pkg.
04.503.468.05	8	1 pkg.
04.503.470.05	10	1 pkg.
04.503.472.05	12	1 pkg.
04.503.474.05	14	1 pkg.
04.503.476.05	16	1 pkg.
04.503.478.05	18	1 pkg.

2.9 mm Titanium MatrixMANDIBLE Locking Screws, self-tapping, 5/pkg.*

	Length (mm)	Qty.
04.503.668.05	8	2 pkgs.
04.503.670.05	10	2 pkgs.
04.503.672.05	12	2 pkgs.
04.503.674.05	14	2 pkgs.
04.503.676.05	16	1 pkg.
04.503.678.05	18	1 pkg.

Also Available

Sets

01.449.002	Condylar Head Add-on System for MatrixMANDIBLE
01.503.400	MatrixCOMBO Plating Set
01.503.820	MatrixMANDIBLE Subcondylar Set
01.503.900	MatrixMANDIBLE Preformed Plates
	NANO Plating Sets
01.590.000	MatrixMANDIBLE TRAUMA
01.590.001	MatrixMIDFACE
01.590.002	MatrixORTHOGNATHIC
01.590.003	MatrixORBITAL
01.590.004	MatrixCOMBO (TRAUMA)

Instruments

03.503.038	Plate Bender for Midface Plates (two required)
03.503.058	MatrixMANDIBLE Articulating Plate Introducer, with tip
03.503.059	Plate Holding Tip for MatrixMANDIBLE Articulating Plate Introducer
03.503.066	MatrixMANDIBLE Screwdriver Blade, short, non-self-retaining, hex coupling, for use with Holding Sleeve 03.503.067
03.503.067	MatrixMANDIBLE Holding Sleeve, short, for use with 03.503.066
03.503.068	MatrixMANDIBLE Screwdriver Blade, long, non-self-retaining, hex coupling, for use with Holding Sleeve 03.503.069
03.503.069	MatrixMANDIBLE Holding Sleeve, long, for use with 03.503.068
	MatrixMANDIBLE Plate Bending Irons, for use with 1.5 mm, 2.0 mm, 2.5 mm and 2.8 mm thick plates
03.503.077	left
03.503.078	right
03.503.085	Depth Gauge, for 2.0 mm–3.0 mm Screws/polymer handle
03.503.092	Bone Reduction Forceps, angled, large
03.503.094	Bone Reduction Forceps, small with toe-in tip
03.503.185	MatrixMANDIBLE Bending Template for 1.25 mm, 2×2 hole
	MatrixMANDIBLE 1.5 mm Drill Bits, J-latch, 50 mm
03.503.404	with 4 mm stop
03.503.406	with 6 mm stop
03.503.412	with 12 mm stop
	MatrixMANDIBLE 1.5 mm Drill Bits, mini quick coupling, 50 mm
03.503.504	with 4 mm stop
03.503.506	with 6 mm stop
03.503.508	with 8 mm stop
03.503.512	with 12 mm stop
	MatrixMANDIBLE Drill Bits, mini quick coupling, 90 mm
03.503.551	1.5 mm, for use with 03.503.043
03.503.561	1.8 mm, for use with 03.503.044
03.503.571	2.4 mm, for use with 03.503.046
	MatrixMANDIBLE Calibrated Drill Bits, mini quick coupling, 125 mm, for use with 03.503.045 and 03.503.047
03.503.479	1.5 mm
03.503.480	1.8 mm
03.503.481	2.4 mm
	Matrix 1.4 mm Drill Bits, J-latch
03.511.244	with 4 mm stop
03.511.245	with 6 mm stop
03.511.248	with 8 mm stop
311.004	Fixed-Swivel Screwdriver Handle
399.98	Reduction Forceps, with points, ratchet, 205 mm
310.805	Countersink w/ centering pin for screw ∅ 2.4 mm with Hex coupling
397.225	Lag Screw Cannula
397.226	Lag Screw Pointer
397.282	1.8 mm Insert Drill Guide
397.285	2.4 mm Drill Guide

* For single-packs, replace suffix .05 with .01.

Implants

	2.0 mm Titanium MatrixMANDIBLE Screws, self-drilling (5/pkg.)*
04.503.506.05	6 mm
04.503.508.05	8 mm
	2.0 mm Titanium MatrixMANDIBLE Locking Screws, self-drilling (5/pkg.)*
04.503.546.05	6 mm
04.503.548.05	8 mm
	2.0 Titanium MatrixMANDIBLE Fine Pitch Screws (5/pkg.)*
04.503.554.05	4 mm
04.503.555.05	5 mm
04.503.556.05	6 mm
04.503.558.05	8 mm
	2.4 Titanium MatrixMANDIBLE Screws, self tapping
04.503.423.01	20 mm
04.503.424.01	22 mm
04.503.425.01	24 mm
04.503.426.01	26 mm
04.503.427.01	28 mm
04.503.428.01	30 mm
04.503.429.01	32 mm
04.503.430.01	34 mm
04.503.431.01	36 mm
04.503.432.01	38 mm
04.503.433.01	40 mm
04.503.761	Titanium MatrixMANDIBLE Plate, 1.25 mm thick, 2×2 holes
04.503.780	MatrixMANDIBLE Prebent Tension Band Plate, right, 1.0 mm thick, 2×2 holes
04.503.781	MatrixMANDIBLE Prebent Tension Band Plate, left, 1.0 mm thick, 2×2 holes
04.503.783	Titanium MatrixMANDIBLE Adaption Plate, 1.0 mm thick, 4 holes
04.503.784	Titanium MatrixMANDIBLE Adaption Plate, 1.0 mm thick, 6 holes
	Angle Reconstruction Plates, 1.5 mm thick
04.503.785	7×23 holes, left
04.503.786	7×23 holes, right
	Double Angle Reconstruction Plates, 1.5 mm thick
04.503.787	Small
04.503.788	Medium
04.503.789	Large
04.503.830	Titanium MatrixMANDIBLE Subcondylar Plate, Lambda, right, 1.0 mm thick
04.503.831	Titanium MatrixMANDIBLE Subcondylar Plate, Lambda, left, 1.0 mm thick
04.503.832	Titanium MatrixMANDIBLE Subcondylar Plate, Strut, right, 1.0 mm thick
04.503.833	Titanium MatrixMANDIBLE Subcondylar Plate, Strut, left, 1.0 mm thick
04.503.834	Titanium MatrixMANDIBLE Subcondylar Plate, Trapezoidal, 1.0 mm thick

Graphic Case Options

Graphic Case and Instrument Trays:

306.777	Graphic Case, medium
306.702	Instrument Tray for Graphic Case, medium, for MatrixMANDIBLE Benders and Cutters
306.707	Instrument Tray for Graphic Case, medium, MatrixMANDIBLE Trocar and Drivers

* For single-packs, replace suffix .05 with .01.

Modules/Insert Trays:

306.610	Auxiliary Module
306.624	Generic Module Lid
306.712	nsert Tray for Trocar Instruments
306.713	Insert Tray for Bending Instruments
306.714	Insert Tray for Bending Pliers
306.745	Reconstruction Screw Caddy Insert Tray, for MatrixMANDIBLE System
306.746	2.8 mm Plate Insert Tray, for MatrixMANDIBLE System
306.747	2.0 mm and 2.5 mm Double Angle Plate Insert Tray, for MatrixMANDIBLE System
306.752	Mini IMF Screw Module
306.755	Lag Screw Module
306.757	Compact IMF Screw Module
306.760	IMF Screw Module, Full Size
306.770	2.0 mm Screw Insert Tray
306.772	Generic MatrixMANDIBLE Screw Insert Tray, for 2.0 mm, 2.4 mm and 2.9 mm screws
306.778	Matrix Auxiliary Module, medium
306.781	Insert for 1.0 mm Malleable Plate
306.782	Insert Tray for 1.0 mm plates
306.783	Insert Tray for 1.25 mm plates
306.784	Insert Tray for 1.5 mm plates
306.785	Insert Tray for 2.0 mm plates
306.786	Matrix Auxiliary Insert Tray, medium
306.787	Auxiliary Insert Tray, small
306.789	Insert Tray for Subcondylar Plates for MatrixMANDIBLE
60.449.005	Module and Lid for Condylar Head Add-on System, MatrixMANDIBLE

Other

03.503.700	Bending Insert Holder for 03.503.080
306.726	Finger Mat, for use with 306.702, medium
306.728	Calibrated Drill Bit Holder
306.765	Label Sheet for IMF Module
306.766	Label Sheet for Lag Screw Module
306.767	Label Sheet for Subcondylar Tray for MatrixMANDIBLE
306.774	Label Sheet for Screw Module
306.788	Label Sheet, Small Plate Insert
306.82	Plastic Cup with Lid, for Elastomeric Inserts
304.120	Screw Length Markers 20 mm, 1pkg. of 10 ea.
304.122	Screw Length Markers 22 mm, 1pkg. of 10 ea.
304.124	Screw Length Markers 24 mm, 1pkg. of 10 ea.
304.126	Screw Length Markers 26 mm, 1pkg. of 10 ea.
304.128	Screw Length Markers 28 mm, 1pkg. of 10 ea.
304.130	Screw Length Markers 30 mm, 1pkg. of 10 ea.
304.132	Screw Length Markers 32 mm, 1pkg. of 10 ea.
304.134	Screw Length Markers 34 mm, 1pkg. of 10 ea.
304.136	Screw Length Markers 36 mm, 1pkg. of 10 ea.
304.138	Screw Length Markers 38 mm, 1pkg. of 10 ea.
304.140	Screw Length Markers 40 mm, 1pkg. of 10 ea.

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Note: For recognized manufacturer, refer to the product label.

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