



L1 MMF

Technique Guide and Catalog



Where strength and flexibility come together.

The KLS Martin L1 MMF allows you to work around the tooth roots without compromising strength.

L1 MMF

The KLS Martin L1 MMF system is a bone-borne maxillomandibular fixation (MMF) system consisting of metallic archbars with sliding locking plates that attach to the dental arches with self-drilling locking screws. The system is intended to provide temporary stabilization of mandibular and maxillary fractures as well as maintain proper occlusion during intraoperative bone fixation and postoperative bone healing (app. 6-8 weeks). The patient is brought into occlusion by wiring around the archbar wire hooks. The L1 MMF system plates are manufactured from CP Titanium (ASTM F67), are available with a sliding plate configuration with different lengths, which are 0.5 mm in plate thickness. The L1 MMF system sliding locking plates are fixated with either 2.0 x 6 mm or 2.0 x 8 mm drill-free locking screws manufactured from Ti-6Al-4V (ASTM F136). Implants are available sterile. The system also includes the necessary instruments to facilitate placement of the implants.

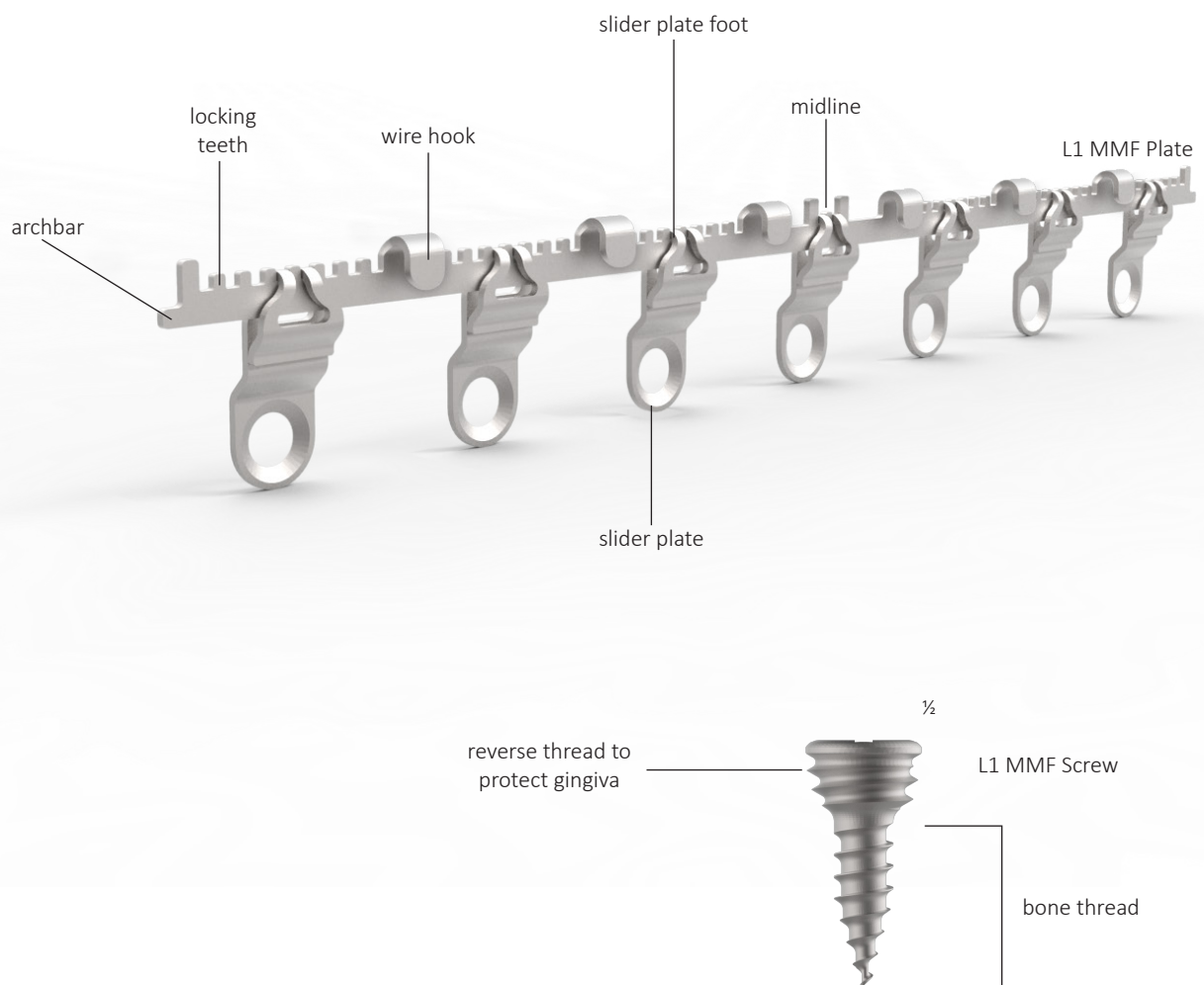
Indications

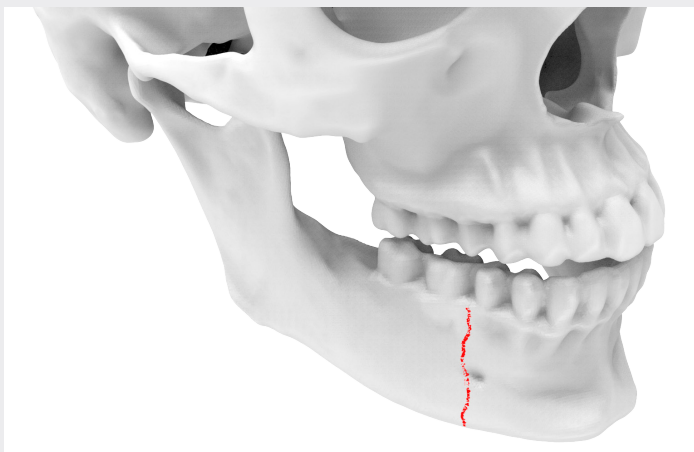
The KLS Martin L1 MMF system is intended for temporary stabilization of mandibular and maxillary fractures. It is designed to maintain proper occlusion during intraoperative bone fixation and postoperative bone healing (app. 6 - 8 weeks). It is indicated for the temporary treatment of maxillomandibular fixation (MMF) in adults or adolescents who have permanent teeth present (ages 12 and older).

Contraindications

- Active or latent infection.
- Patients with limited blood supply, insufficient quantity or quality of bone. Patients with poor bone density in whom failure of screw fixation may be anticipated.
- Patients who are unwilling or unable to adhere to restriction in eating and mouth opening associated with maxillomandibular fixation.
- Patients with mental or neurological conditions who are unwilling or incapable of following postoperative care instructions.
- Severely comminuted fractures or unstable fractures.
- Foreign body sensitivity. Where material sensitivity is suspected, testing is to be completed prior to implantation.
- Patients in whom damage to unerupted permanent teeth is anticipated.
- Adolescents whose permanent teeth have NOT erupted.

Step-By-Step For **L1 MMF**





1. Approximate the fracture.

Approximate the bone segments to aid in measurement of the arch and identification of the midline.

7-hole



25-197-07-71



25-197-17-71



25-197-27-71

9-hole



25-197-09-71

2. Select the appropriate size plate for your bone fracture.

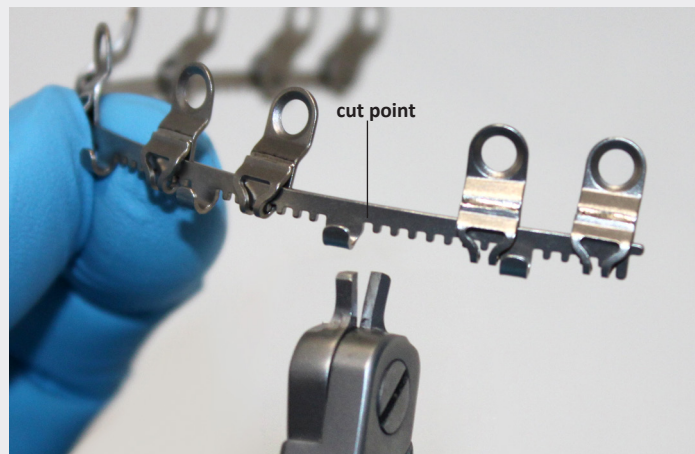
Select the appropriate size plate based on the patient's anatomy. KLS-Martin L.P. offers fixed midline and adjustable midline versions of the L1 MMF plate.



3. Contour the L1 MMF plate after defining your midline.

After deciding the proper size L1 MMF plate, find the midline on the patient. Once you have defined your midline point, manually contour the rest of the plate around the maxilla as needed.

Before implantation, inspect the implant for damage such as dents or deformed screw holes.



4. Cut the L1 MMF plate down to proper patient size.

At least five points of screw fixation are recommended per arch, centered around the midline. If a L1 MMF plate needs to be cut, it must be cut in-between the locking teeth immediately lateral to a wire hook.

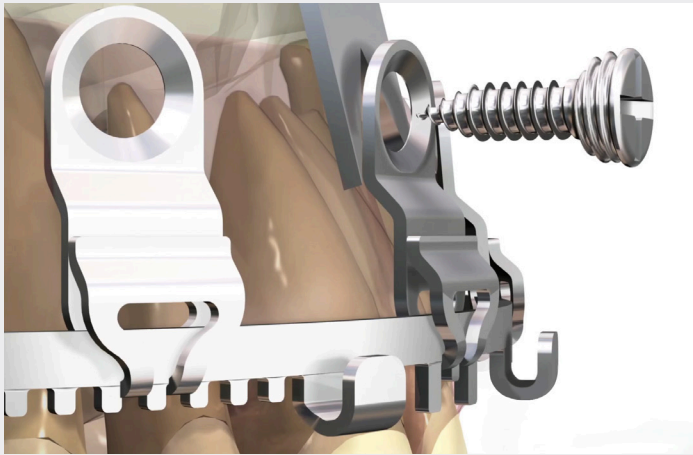
Sharp edges due to cutting should be smoothed out to avoid soft tissue damage or irritation.



L1 MMF plate



Plate cutter

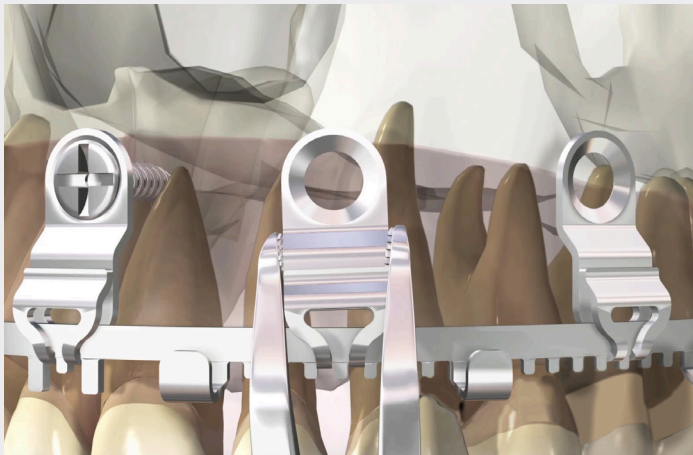


5. Initial screw placement.

Place the L1 MMF plate on the maxilla and insert the appropriate length L1 MMF drill-free locking screw through the slider plate screw hole at the midline. The first screw should always be placed at the midline. This will provide stability to manipulate the plate and slider plates, and insert additional screws.

Position the plate spacer fork under the plate to protect the gingiva during screw placement.

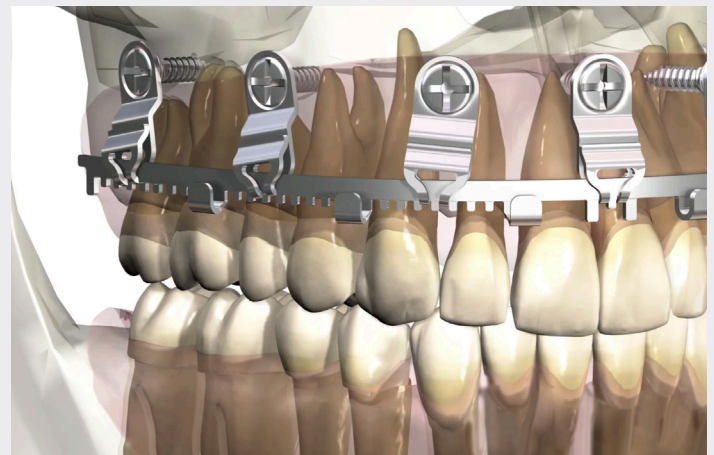
Note: L1 MMF screws are Drill-Free; however, preparation of a pilot hole may be required in dense bone.



6. Position lateral holes.

Move the slider plates as needed to avoid all tooth roots. The slider plates can be moved using forceps. Once the optimal position for a screw is located, insert the next L1 MMF drill-free locking screw.

Work laterally from the midline to secure slider plates to the maxilla.



7. Complete fixation steps in the maxilla.

Repeat step 6 until the remaining screw holes are secured in the maxilla.



Ratchet
screwdriver handle



maxDrive
screwdriver blade



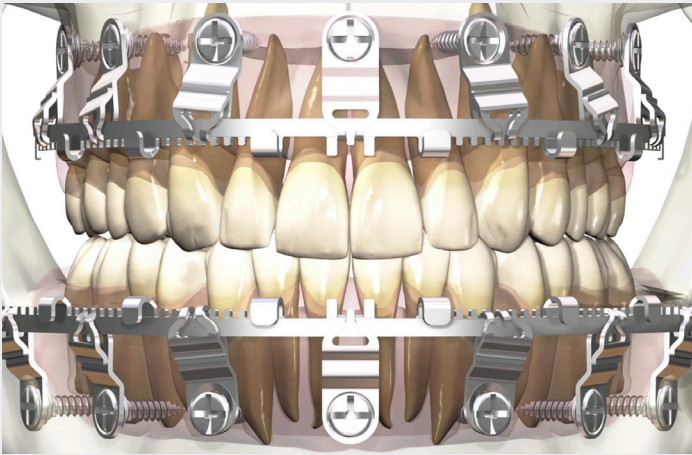
Plate
spacer fork



L1 MMF screw

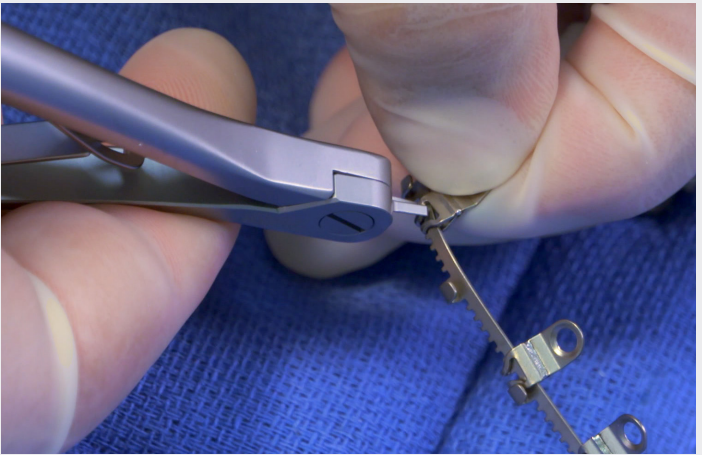


Forceps



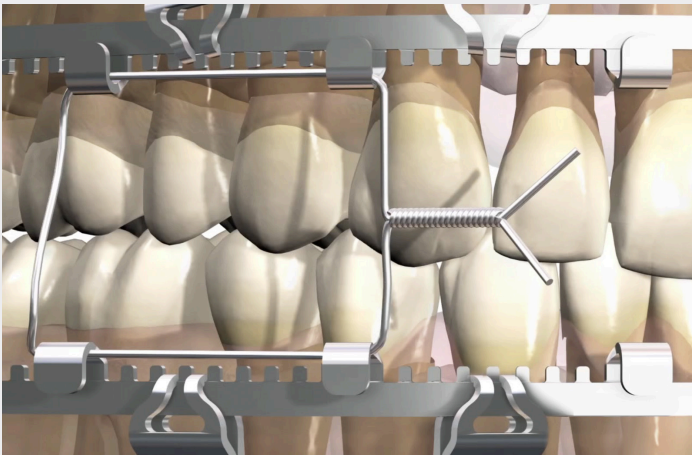
8. Apply the L1 MMF plate to the mandible.

Repeat steps 2-7 on the mandible, as needed.



9. Cut away all unused slider plates with the plate cutter.

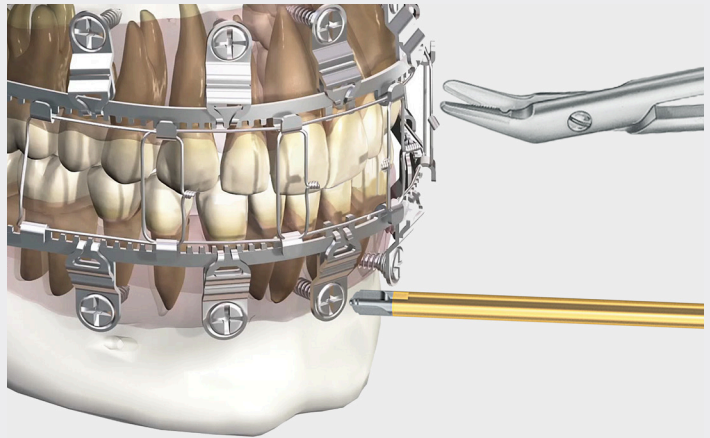
In instances where at least five points of fixation are achieved per arch and there is an unused slider plate, use the plate cutters to cut all unused slider plates at their feet to remove them from the L1 MMF Plate.



10. Apply wire fixation.

Utilizing the wire hooks on each plate, secure the wire loops as with traditional archbar techniques. Each hook can accommodate up to 2 loops of wire.

Before fully tightening the wires, bring the maxillary and mandibular dentition into occlusion.



11. Removal.

Cut the wires and remove the plates by removing all bone screws with a maxDrive screwdriver blade.

If a screw becomes permanently locked into the plate and cannot be backed out; cut the archbar plate around the slider plate hole. From there use the slider plate to back out the screw from the bone and soft tissue.



KLS-Martin L.P. only recommend using the 25-197-17-71 and 25-197-27-71 plates when posterior hooks need to be used. The external load must be supported by multiple fixation points and slider plates must be placed close to all wired fixation loads.



Patients leaving the operating theater with the L1 MMF system in place are to be provided with a surgical wire cutter and insert 91-600-01-67 in case of emergency.

If emergent re-entry is necessary, cut and remove all wires connecting the two arches.

Product For L1 MMF

STERILE | R

L1 MMF plates pre-packaged sterile



Made of pure CP titanium

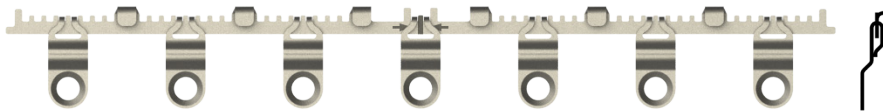


0.5 mm thickness



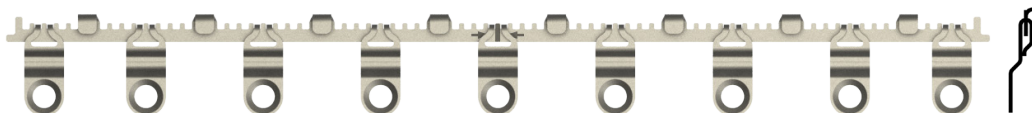
2.0 mm system

- L1 MMF Fixation plates shown 1:1-



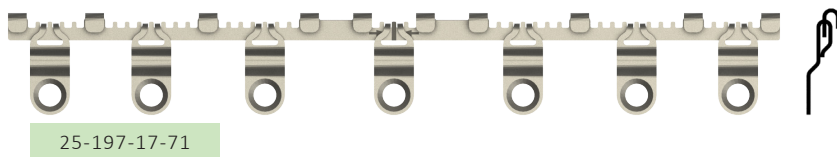
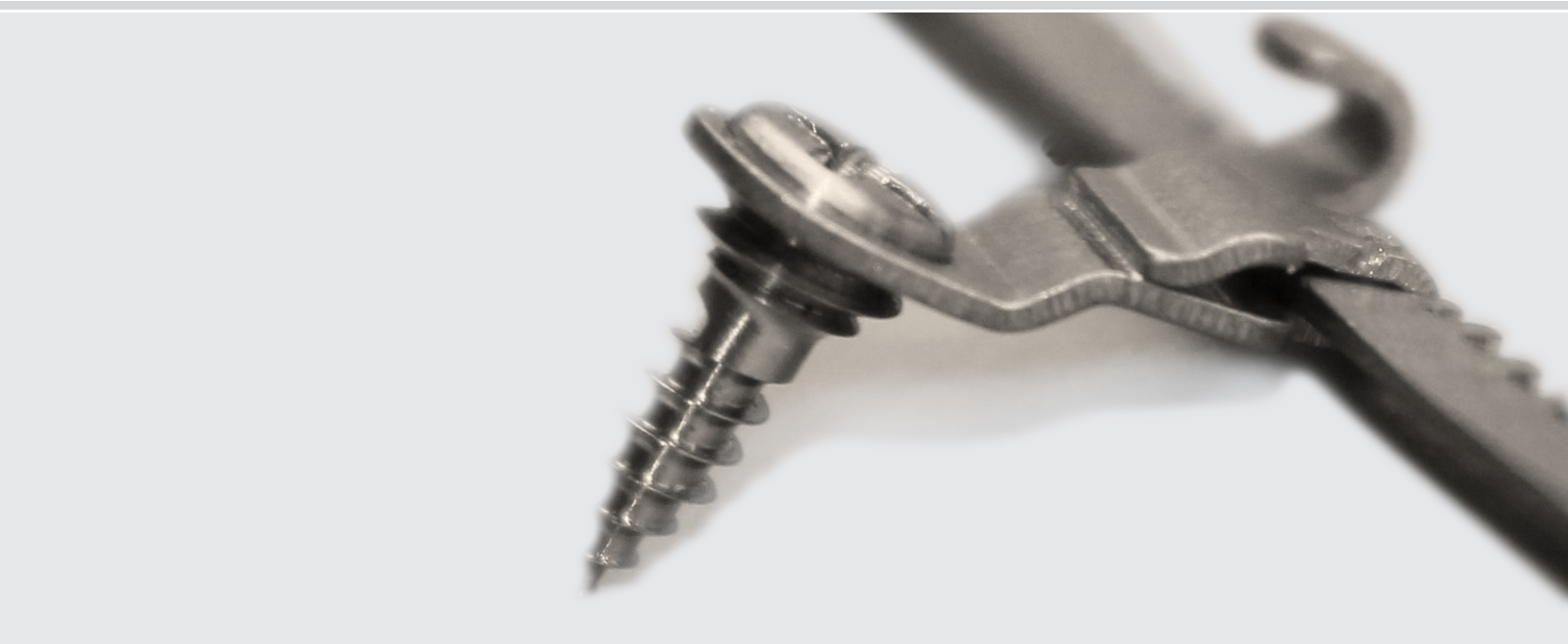
25-197-07-71

- 7 slider plates for screw fixation
- 6 hooks for MMF fixation
- Fixed midline

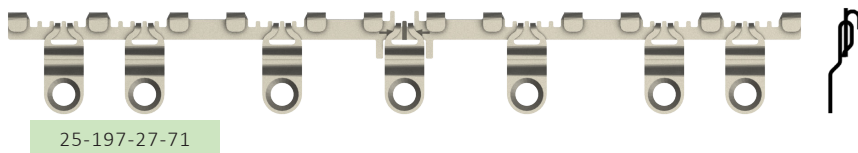


25-197-09-71



- 9 slider plates for screw fixation
- 8 hooks for MMF fixation
- Adjustable midline
- Longer arch bar length to span wider gingiva space when needed



- 7 slider plates for screw fixation
- 10 hooks for MMF fixation
- Added support on the midline of the arch bar to increase plate rigidity over high stress areas
- Adjustable midline



- 7 slider plates for screw fixation
- 12 hooks for MMF fixation
- Added support along the body of the arch bar for increased plate rigidity over high stress areas
- Fixed midline

Ø 2.0 mm		L1 MMF screws		
		 2:1- 25-198-06-61		
Length		1 PC	5 PC	10 PC
6 mm		25-198-06-71	25-198-06-75	25-198-06-70
8 mm		25-198-08-71	25-198-08-75	25-198-08-70

Instrumentation

For **L1 MMF**



11-865-12-07
Angled wire cutter

serrated
12 cm, 4 ¾"



13-303-02-07
Forceps

14 cm, 5 ½"



22-500-12-07
Wire twister

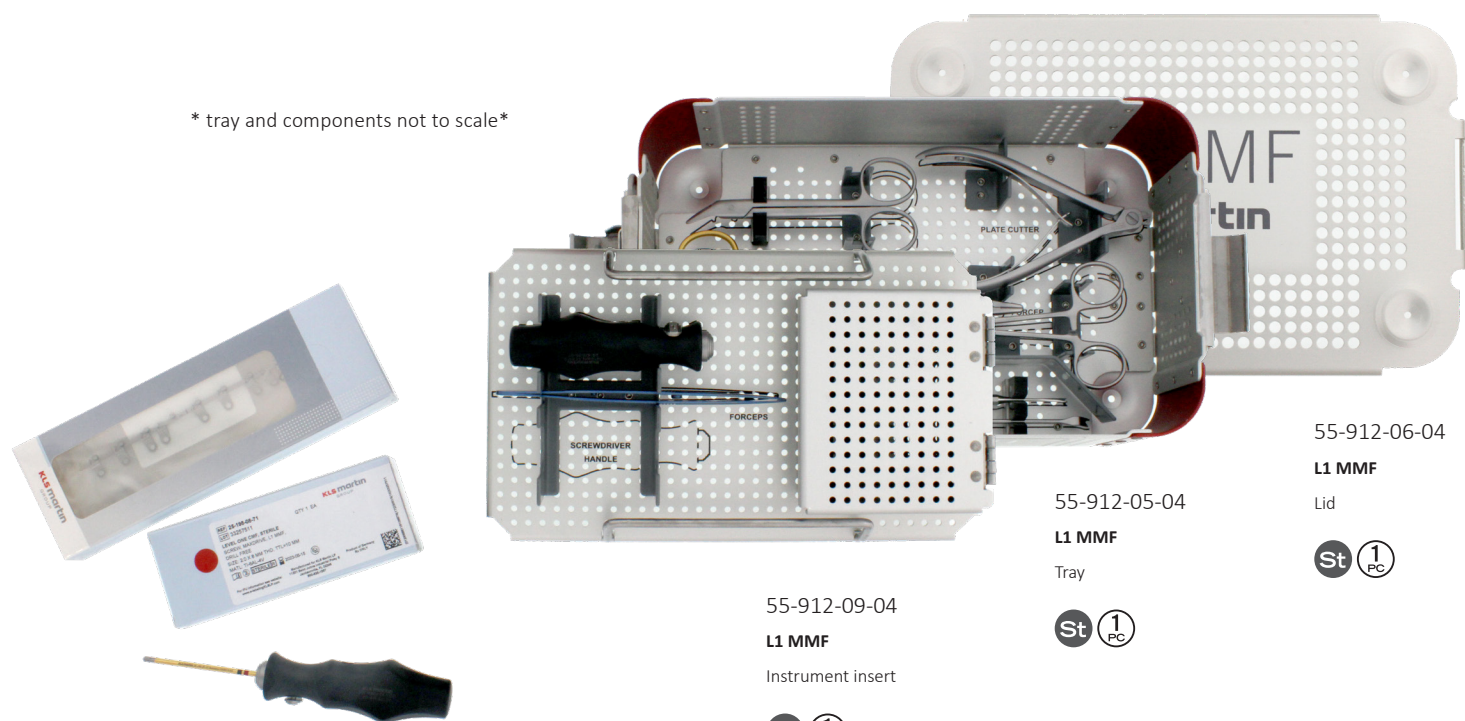
18 cm, 7"



25-197-30-07
Plate spacer fork



* tray and components not to scale*



25-197-31-07
Plate cutter

St 1 PC



25-411-00-07
Ratcheting S/D handle
for 25-430-97-07 and
25-540-95-07 blades

St 1 PC



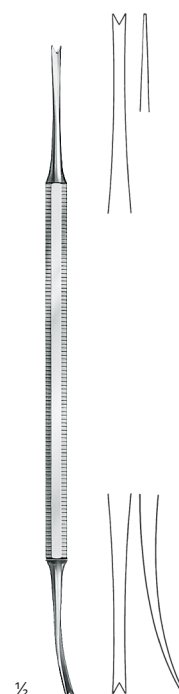
25-486-97-07
maxDrive
screwdriver blade

St 1 PC



25-496-15-09
Plate holding forceps

St 1 PC



39-311-20-07
Ligature tucker

St 1 PC

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