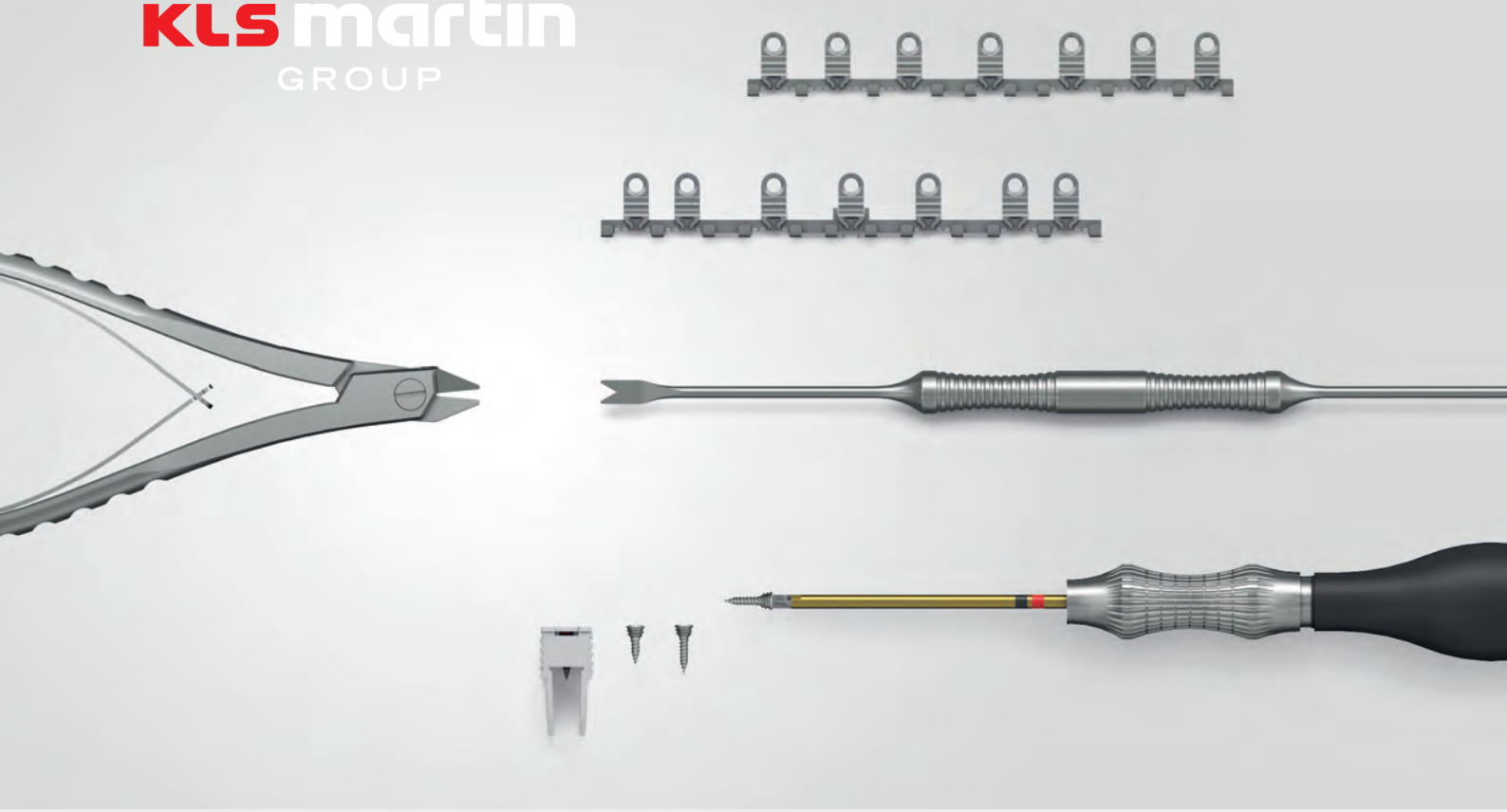
KLS martin GROUP



L1® MMF

Maxillomandibular fixation

www.klsmartin.com

Oral and maxillofacial surgery is our passion! We also want to continue our development along with our customers. Day in, day out, we work to develop innovative products and services that satisfy the highest quality demands and contribute to the patient's well-being.

L1® MMF
Maxillomandibular fixation

Maxillomandibular fixation (MMF) is a crucial step in the management of virtually all jaw and midface fractures. It is therefore one of the most frequent procedures accompanying oral and maxillofacial surgery.

MMF is performed preoperatively as an immediate measure, intraoperatively to ensure accurate occlusion and anatomically correct reduction of fragments, as well as postoperatively to initiate the healing process in complex fractures. In rare cases, it is still used as a conservative method of jaw fracture treatment.

The method of choice for maxillomandibular fixation varies mainly between traditional arch bars and MMF screws.

The L1® MMF system is a bone-borne hybrid solution. It was developed to combine the advantages of both methods – the strength of traditional arch bars with the speed of MMF screws.

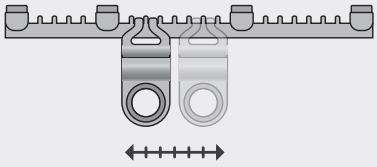
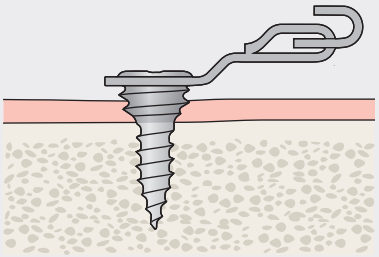
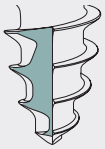
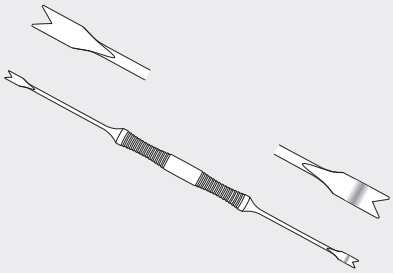
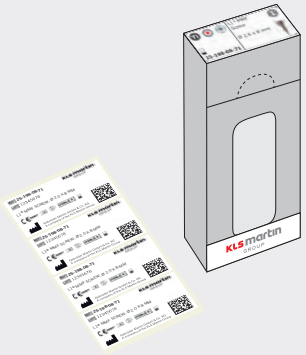
Feature, function and benefit

The L1® MMF system consists of metallic arch bars and self-drilling locking screws. The arch bars are equipped with sliding locking plates for screw fixation enabling a high precision in screw placement.

L1® MMF plates and screws are manufactured from titanium and are available in different versions. The patient is brought into occlusion by wiring around the arch bar wire hooks.

The L1® MMF system is designed to provide efficient, precise and strong fixation. Our portfolio also includes the necessary instruments to support the placement of the implants.

L1® MMF

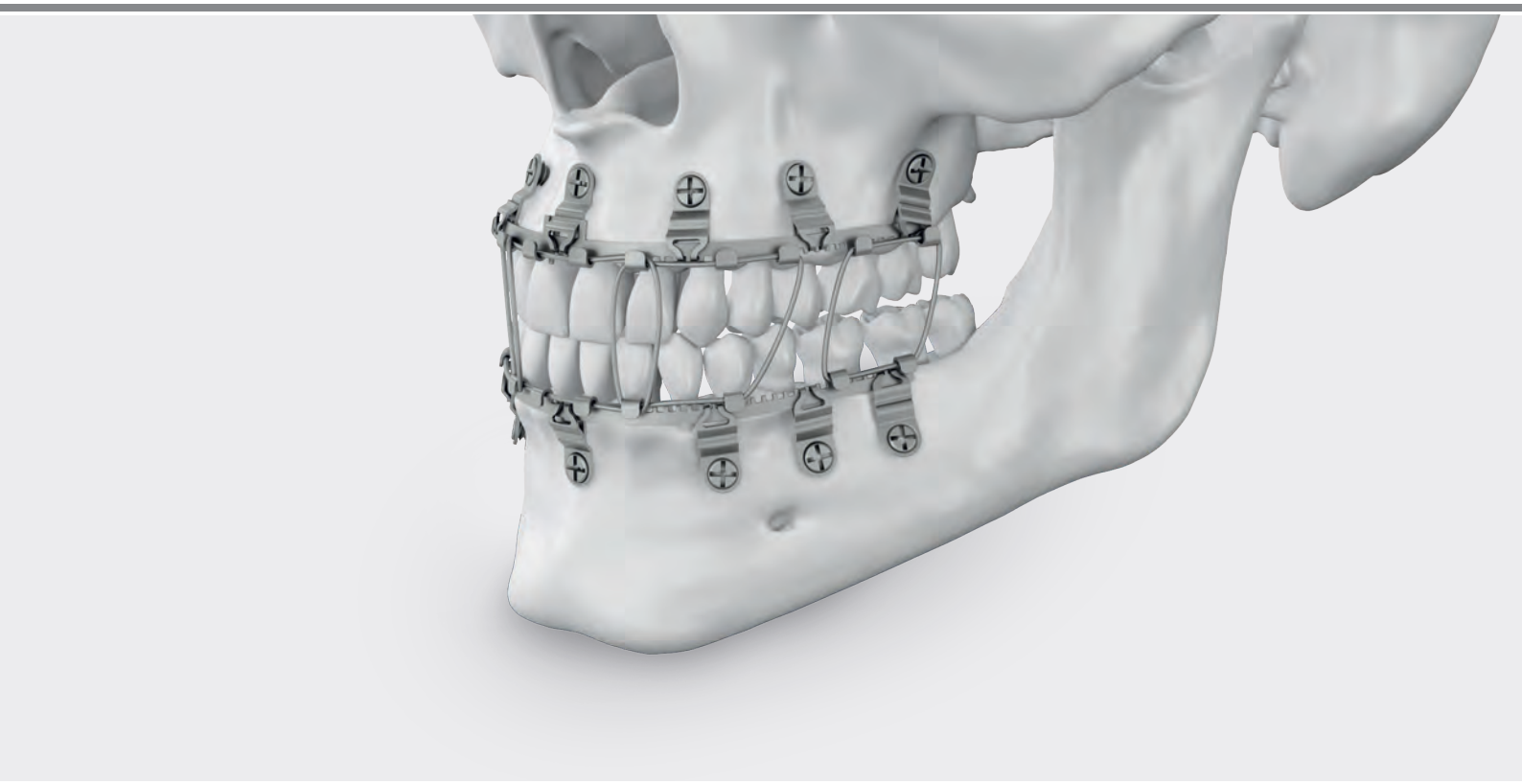
	Feature	Benefit
	■ Adjustable slider plates for screw fixation ■ Under load, the feet of the slider plates securely seat into the arch bar	■ Enables flexible and precise screw placement to avoid tooth roots without compromising strength ■ Creates a rigid connection and high stability
	■ Locking mechanism: L1® MMF screw simultaneously locks into the slider plate and lifts the plate off the gingiva	■ Protects the gingiva and prevents soft tissue irritations
	■ Self-drilling locking screws	■ Speed of traditional MMF screws ■ Risk of damaging dental roots is reduced
	■ Specially designed plate spacer fork with straight and angled working ends	■ Helps to maintain separation between plate and gingiva during screw insertion to protect soft tissue ■ Facilitates proper alignment of the plate
	■ All implants are available in individually sterile packaged versions including self-adhesive labels with all the relevant implant data	■ 100% batch traceability and transparent, patient-related documentation

Step by step to optimal fixation

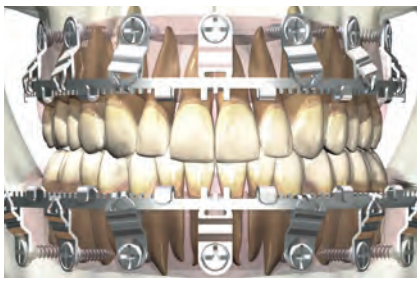
Fields of use

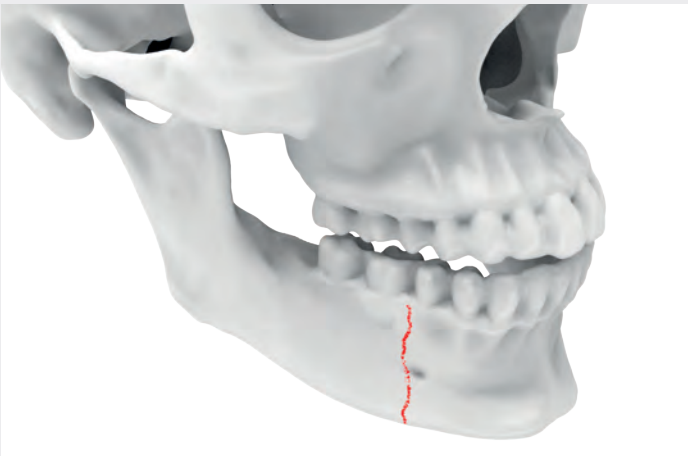
The L1® MMF system is intended for surgically invasive procedures in cranio-maxillofacial surgery where maxillo-mandibular fixation by screws or plates in combination with wire material or rubber bands is required.

- Mandibular and maxillary fractures
- Midface trauma and osteotomies
- Subcondylar and condylar fractures



Surgical technique





1. Selection of the appropriate plate

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

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

2. Contouring and cutting the L1® MMF plate

After deciding the proper 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.

At least five points of screw fixation are recommended per arch bar, 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

L1® MMF plate

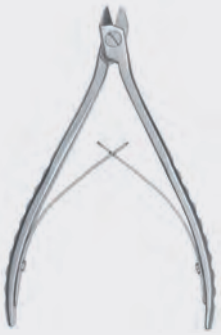
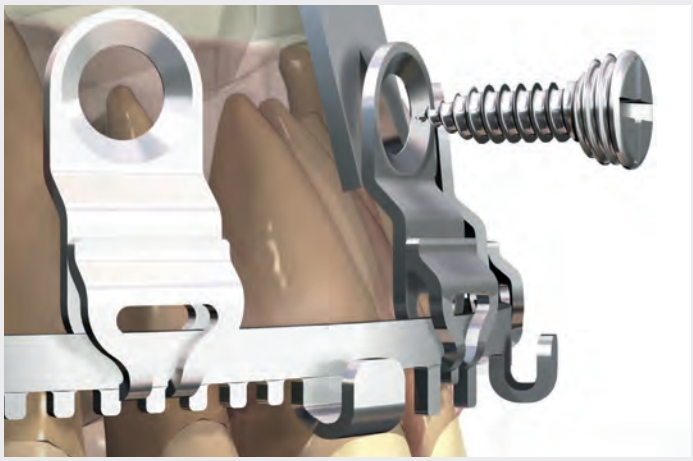
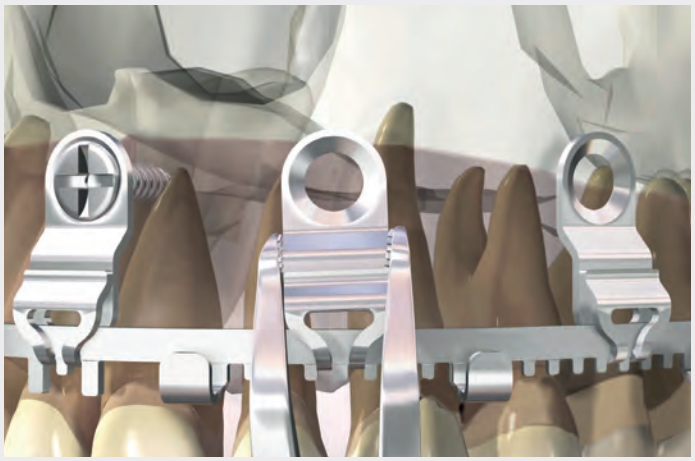


Plate cutter





3. Initial screw placement

Place the L1® MMF plate on the maxilla and insert the L1® MMF drill-free locking screw of appropriate length 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.

4. Positioning and fixation of lateral holes

Move the slider plates as needed to avoid all tooth roots. The slider plates can be moved using a 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 the slider plates to the maxilla.

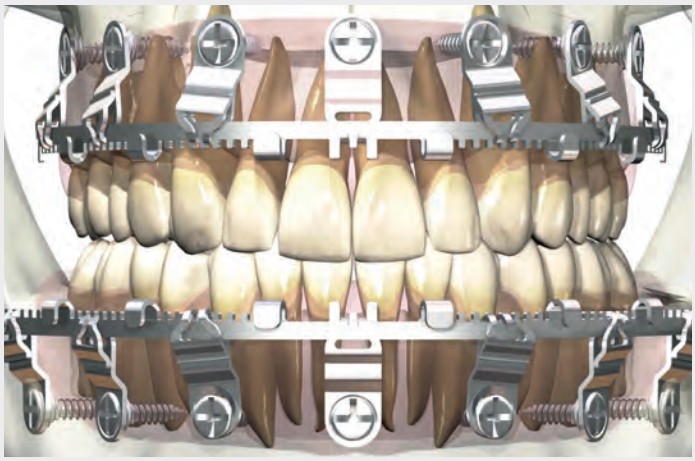
Repeat until the remaining screw holes are secured in the maxilla.

Screwdriver handle and maxDrive® screwdriver blade

L1® MMF screw

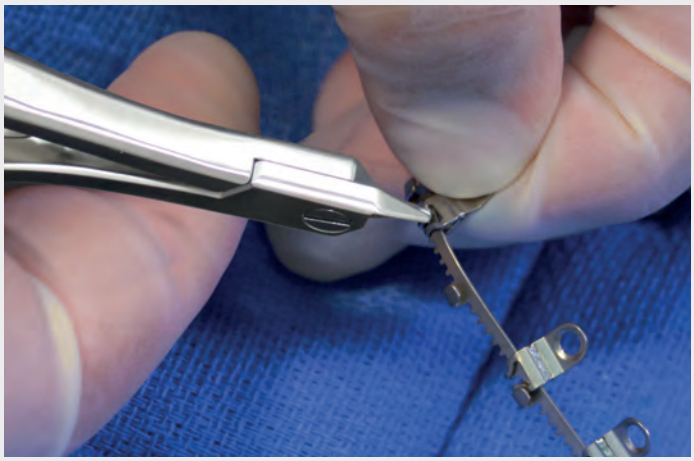
Plate spacer fork

Forceps



5. Application of the L1® MMF plate to the mandible

Repeat steps 1 - 4 on the mandible, as needed.



6. Cutting away all unused slider plates

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

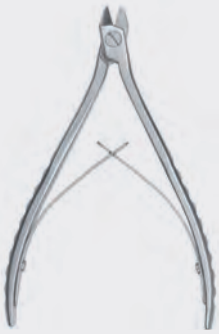
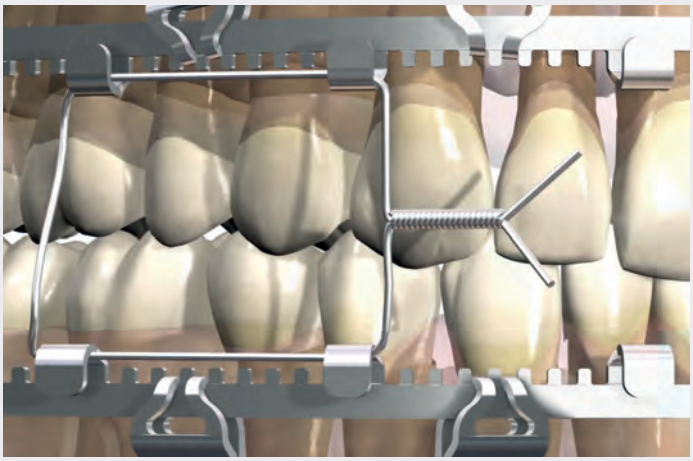
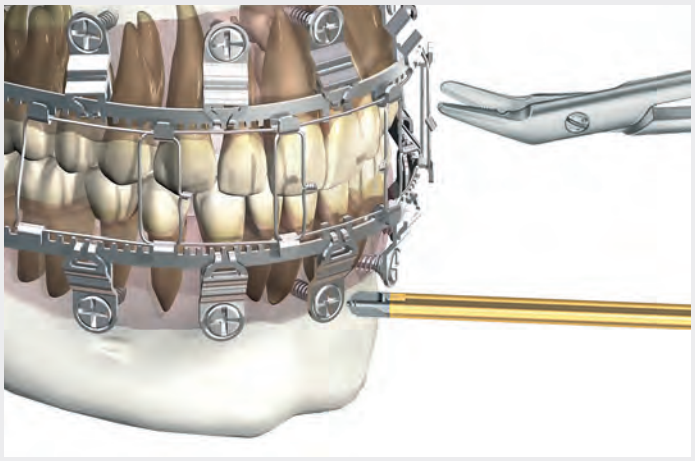


Plate cutter





7. Application of wire fixation

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

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

8. 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 arch bar plate around the slider plate hole. From there use the slider plate to back out the screw from the bone and soft tissue.

TC wire twister

Screwdriver handle and maxDrive® screwdriver blade

Wire scissors

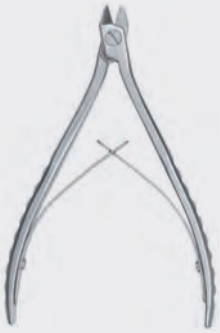


Plate cutter

L1® MMF – plates and screws

L1® MMF plates

25-197-27-71 Ti 1

7 slider plates for screw fixation
12 hooks for MMF fixation
fixed midline
= 0.5 mm

25-197-17-71 Ti 1

7 slider plates for screw fixation
10 hooks for MMF fixation
adjustable midline
= 0.5 mm

Explanation of icons

- Ti — Pure titanium
- Ti — Titanium alloy
- Sic — Silicone
- St — Steel
- maxDrive®
- System diameter 2.0 mm
- 1 — Units per package
- Plate profile
- Multidirectional locking screw hole
- STERILE R — Sterile packaged implants

L1® MMF screws

Ø x Length	1	5	10
2.0 x 6 mm	25-198-06-71	25-198-06-75	25-198-06-70
2.0 x 8 mm	25-198-08-71	25-198-08-75	25-198-08-70

Screwdriver and blade

½

25-407-04-04 Sic 1
Screwdriver handle, flat, rotatable
for blade 25-486-97-07
11 cm / 4 3/8"

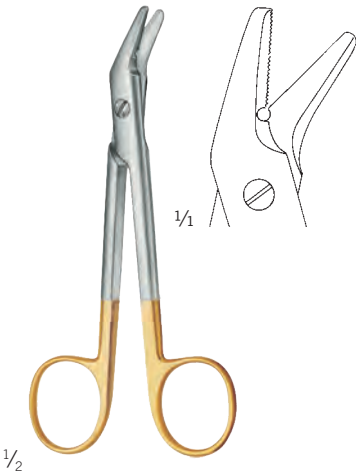
½

25-486-97-07 St 1
Screwdriver blade
maxDrive® 2.0 mm
8 cm, 3 3/8"

L1® MMF – instruments

13-303-02-07 St 1
13 cm / 5 1/8"
Forceps

22-500-11-07 St 1 TC GOLD
15.5 cm / 6 1/8"
TC wire twister



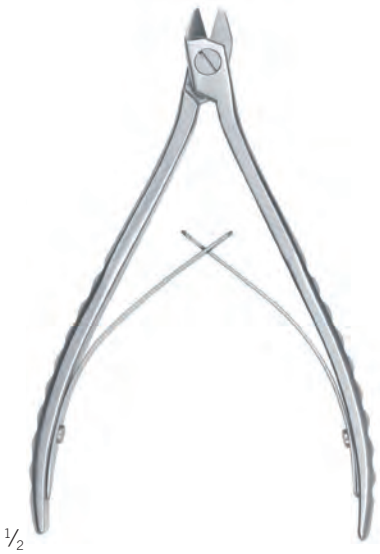
11-865-12-07 St 1 TC GOLD
12 cm / 4 6/8"
TC wire scissors
max. Ø = 1.0 mm
soft wire

Explanation of icons

St Stainless steel

1 Units per package

TC GOLD Instrument with tungsten carbide inserts



1/2

25-050-14-07 St 1

14.5 cm / 5 6/8"

Plate cutter

1/1

1/2

25-197-30-07 St 1

22 cm / 8 3/8"

Plate spacer fork

1/2

25-496-15-09 St 1

15 cm / 6"

Plate holding forceps

1/1

1/2

39-311-20-07 St 1

17.5 cm / 6 7/8"

Gauze packer

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