SURGICAL TECHNIQUE
FIBULAR DISTAL PLATE ANGULARLY STABLE

MEDIN

Fibular Distal Plates

Description of the medical device

The implant system consists of a plate and the necessary number of angularly stable screws, or cortical screws.

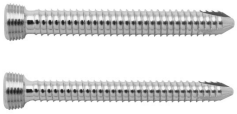
Fibular distal plate

The plates are designed to be non-side-specific. They are anatomically shaped according to the distal end of the fibula.
The plates come in four sizes: 4–10-hole, increasing by 2 holes, or 4 lengths, 57–105 mm increasing by 16 mm.
The holes in the plate are perpendicular to the axis of the fibular.
The plates come in titanium and stainless steel versions.

Angularly stable screws

The distal fibular plate is fixed using Ø 3.5 mm and Ø 3.5/2.7 mm angularly stable screws.

Ø 3.5 mm angularly stable screws come in lengths of 8–50 mm increasing by 2 mm and 50–75 mm by 5 mm.
Ø 3.5/2.7 mm angularly stable screws come in lengths of 10–50 mm increasing by 2 mm.

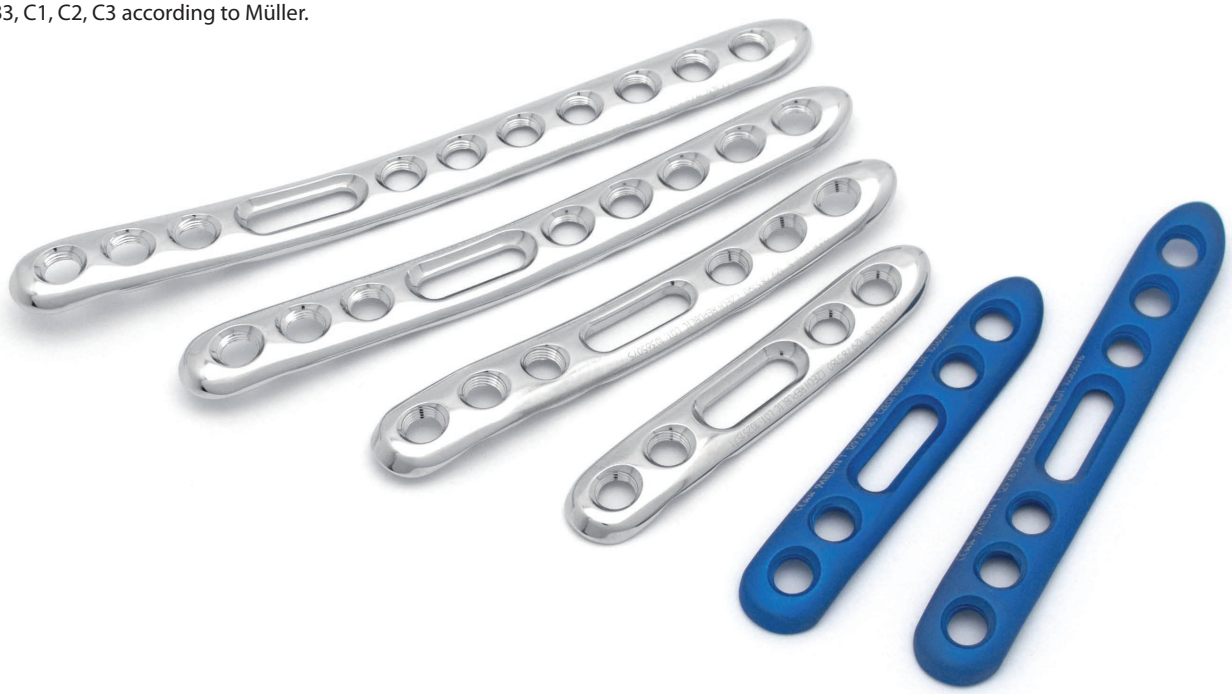


Cortical screws

Cortical HA 3.5 mm screws are intended for the fibular plate.

Indications

The fibular distal plate is intended for angularly stable osteosynthesis of the distal end of the fibular bone, primarily for treating fracture types 44 – A1, A2, B1, B3, C1, C2, C3 according to Müller.



This brochure only serves as an illustrative guide for fibular distal plates and the instrumentation. The aim of the brochure is to give physicians and suture nurses a quick guide and the correct composition in the use of the instruments and implant in order to achieve the best operational outcome. If you have any questions, please contact your MEDIN, a.s. salesperson.

Surgical technique

1. Operational planning

Before the osteosynthesis we recommend that you go through the surgical procedure. Pre-select the appropriate implants. Compare the X-Ray photos of both limbs and then specify the repositioning of the fragments back into the anatomical position. With regards to the soft tissues, we recommend planning the location of the supporting implants (K-wires, spongious screws) used during the transfixation of fragments and the main implants.

2. Patient position

Place the patient on the operating table on their back so that the limb to be operated upon is in neutral rotation. This provides support (fig. 2). We recommend placing the patient so that they can be checked using two X-Ray projections perpendicular to one another.

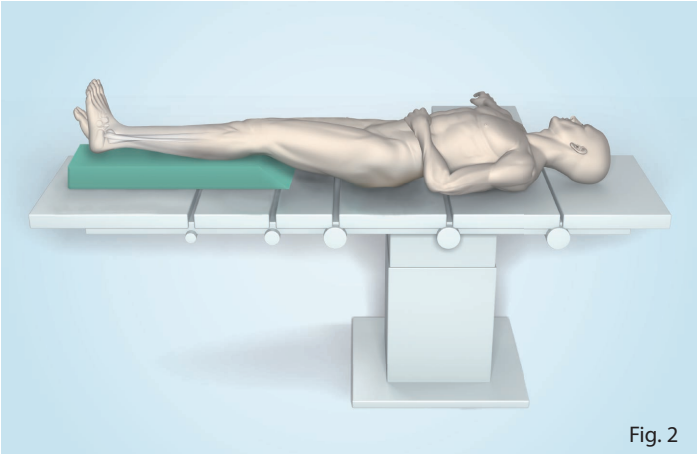


Fig. 2

3. Operational approach

Make an incision laterally along the fibular bone. The incision length is determined by the length of the plate. If appropriate, the plate can be introduced using mini-invasive techniques, a short incision around 50 mm. During mini-invasive introduction, use a raspatory to create a space for introducing the plates. Only use mini-invasive techniques to fix simple fractures, which do not require a visual check of the fragments' repositioning. Keep in mind that there may be arteries, veins and nerves at the incision site. Damage to these tissues, nerves especially, can have lasting consequences for the patient.

4. Repositioning

Reposition the fragments into the original anatomical position. The repositioned fragments are then fixed with at least two K-wires, so as not to obstruct the introduction of the plate. Check the repositioning by X-Ray. Keep in mind that poor repositioning may adversely affect the fragments' correct working and adhesion.

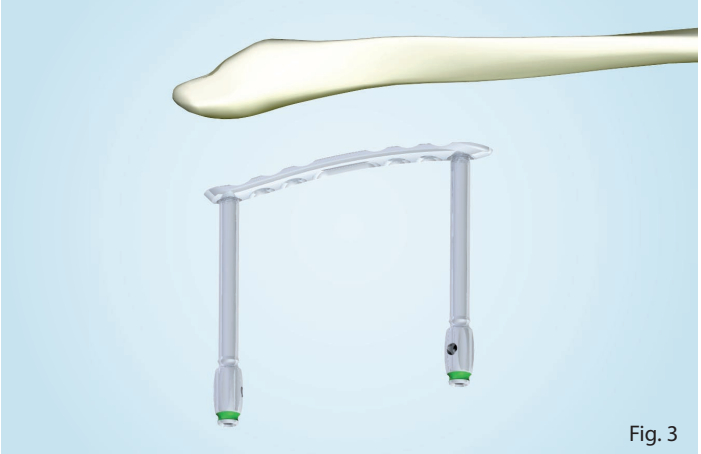


Fig. 3

5. Introducing the plate

Introduce a lockable aiming sleeve to the plate, this improves handling of the plate during introduction (fig. 3). Introduce the plate and fix it to the oval aperture using a 3.5 HA cortical screw. Drill a hole Ø 2.9 mm (fig. 4) and introduce the cortical screw with a 2.5 mm hexagon screwdriver (fig. 5). This enables the plate's position to be corrected in the direction of the fibula axis.

Fig. 4

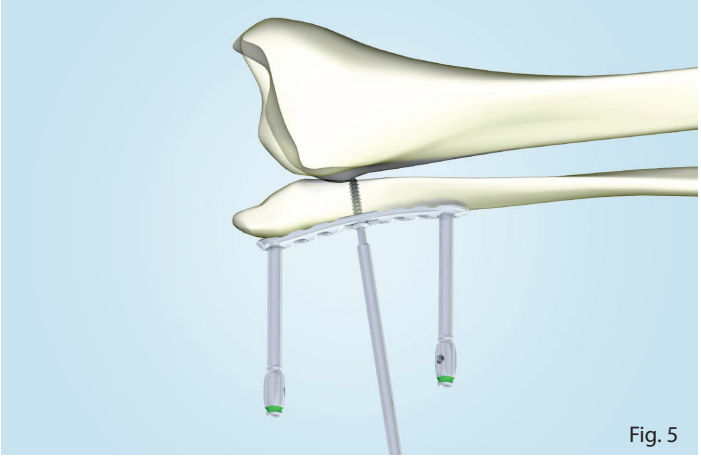


Fig. 5

To fix the plate use a K-wire ø 1.5 mm in the chosen hole through a lockable sleeve and an aiming sleeve (fig. 6).

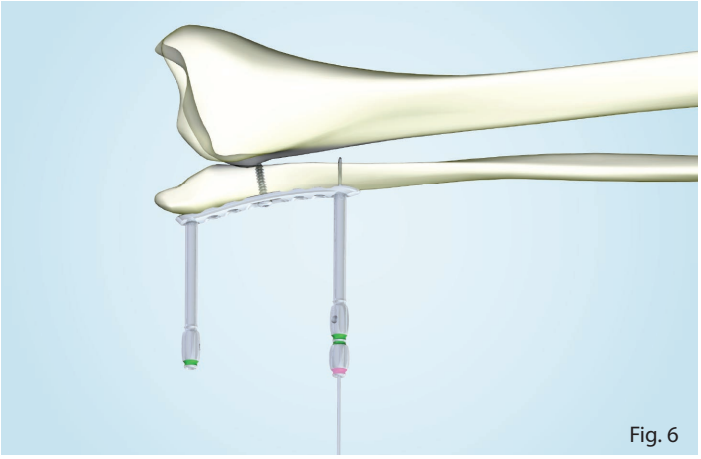


Fig. 6

AN OVERVIEW OF THE TOOLS:

	Lockable aiming sleeve 2.9 mm; 60 mm	marked green
	Aiming sleeve for 1.5 mm wire; 75 mm	marked green/pink
	Guide rod 1.5 × 300 mm	marked in sieve – pink
	Aiming sleeve for 2.0 mm wires; 75 mm	marked green/purple
	K-wire with shank; 2.0 × 300 mm	marked in sieve – purple
	Drill 2.9 × 190 mm	marked green

6. Introducing a screw

Angularly stable screw Ø 3.5 mm

Introduce the lockable sleeve to the selected holes and drill a ø 2.9 mm hole to introduce the angularly stable screw Ø 3.5 mm (fig. 7).

Fig. 7

Angularly stable screw Ø 3.5/2.7 mm

To introduce a stable Ø 3.5/2.7 mm screw introduce a Ø 2.9/2 mm aiming sleeve into the lockable sleeve and form a hole using a Ø 3.5 mm K-wire (fig. 8).

Fig. 8

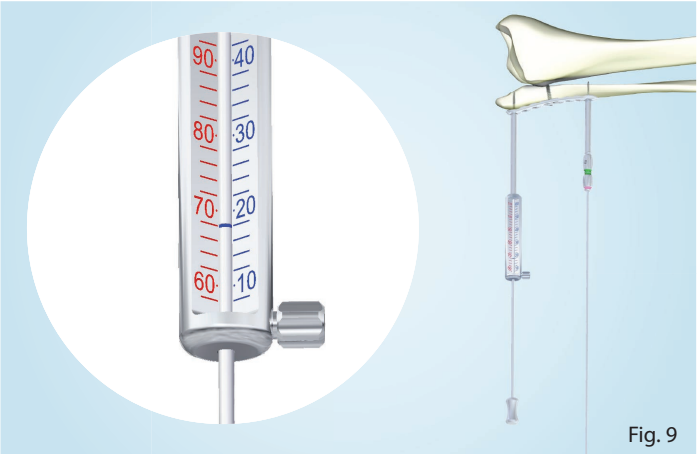


Fig. 9


Fig. 10

Remove the sleeve and measure the length of the screw with the depth gauge (Fig. 9). Introduce the screw using the torque limiter, which „clicks“ to indicate the optimum tightening of the screw (Fig. 10).

Implant the required number of screws using the same procedure (Fig. 11).

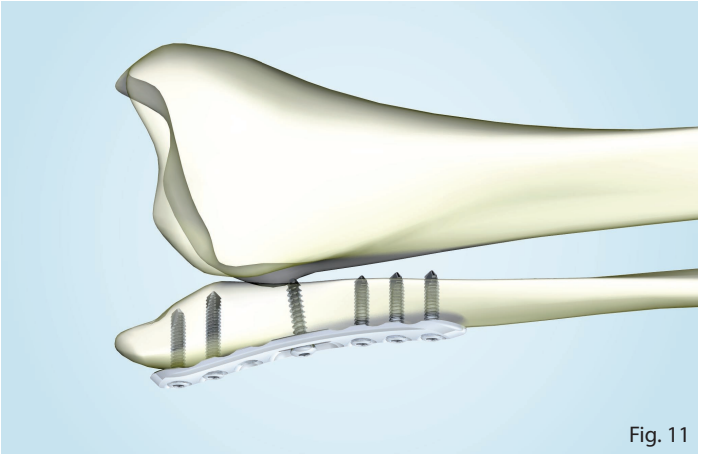


Fig. 11

7) Introducing the suprasyndesmal screw

If the fibula is unstable in the tibial incisura, it may be indicated by the introduction of a suprasyndesmal screw. In this case, do not primarily fix the plate through the oval aperture, use the sleeves and K-wires. After the osteosynthesis of the fibula, place the fibula in the correct anatomical position in the incisura and temporarily fix with K-wires just above and in parallel with the joint surface. In the proximal part of the oval hole, drill a hole for the HA 3.5 cortical screw – about 2–4 cm above the joint surface of the ankle (fig. 12).

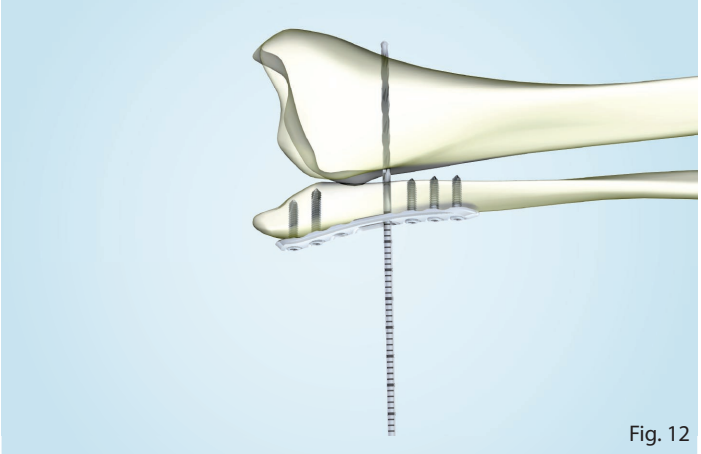


Fig. 12

Measure the required length of the screw and introduce it (fig. 13).


Fig. 13

Introduce the screw tricortically, or, depending on the stability and quality of the bone tissue, quadricortically (fig. 14).

Note: The suprasyndesmal screw is not introduced for tightening, but as a spacer.

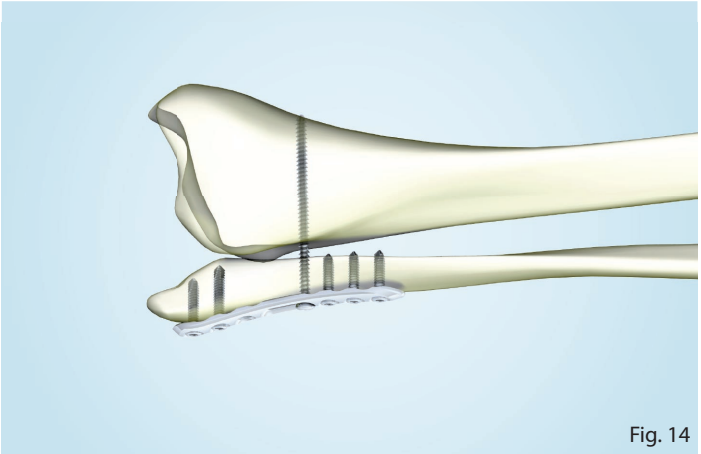
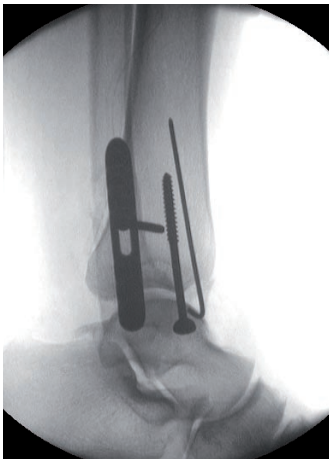
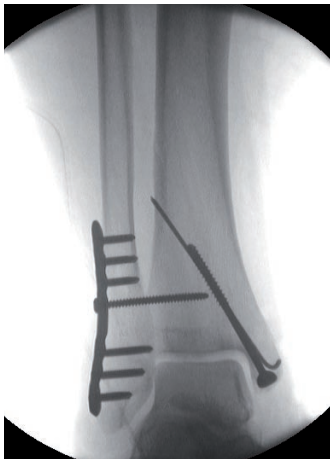


Fig. 14

8. Completing the operation

After rinsing out the wound, gradually close the incision. Introduce a suction drain to where the plate has been introduced. The wound is covered with a soft bandage and X-Ray documentation taken.





9. Concluding remarks

— When applied to one patient there should never be a combination of different materials.

— To guarantee the safe use of the implant, MEDIN requires only implants of this company be used. There must not be a combination of implants from other firms.

— The patient must be warned that the implant does not transfer the patient's entire weight. The patient must use a means of support when walking and gradually increase the burden depending on how the muscles are forming in the site of the fracture.

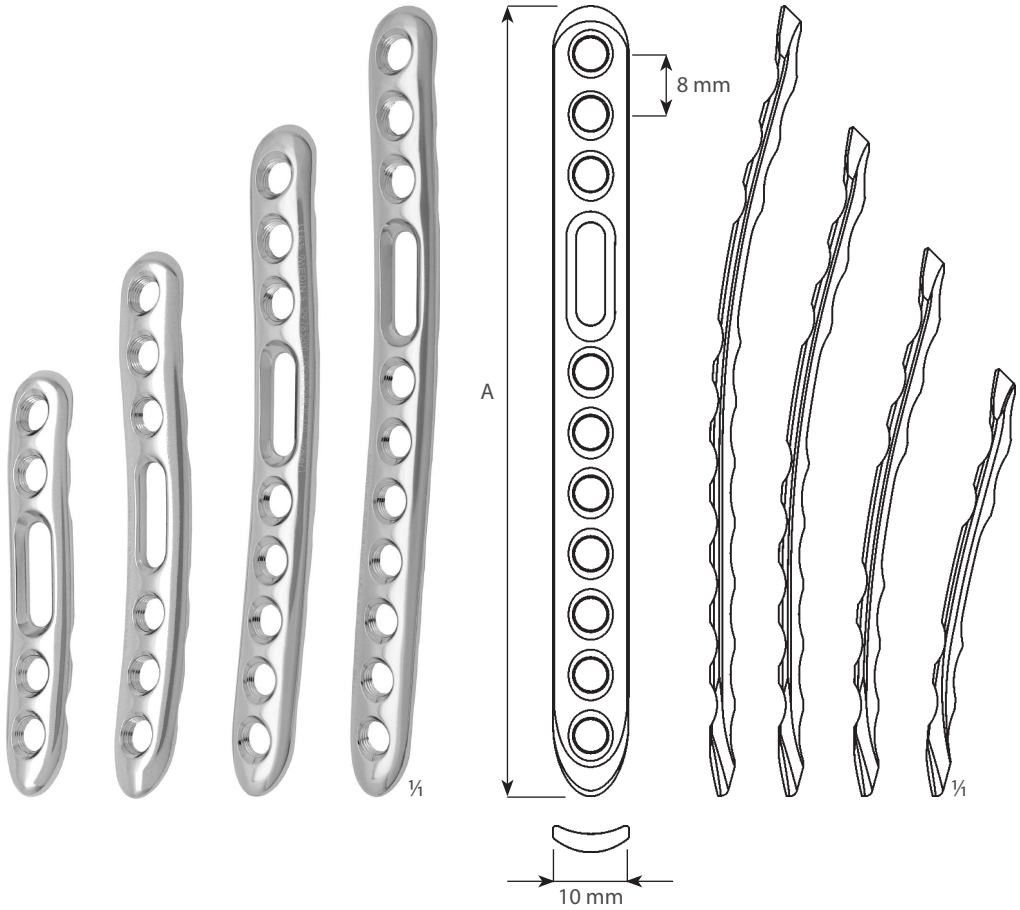
— The implants are intended for single use, for one patient and for one stabilization of the damaged bone. Reuse is forbidden. This fact is mentioned in the package leaflet and concerns all implants.

10. Recommended procedure for extracting the implant

Loosen all the screws and then remove them, this prevents the last screw from rotating along with the splint. In the event of complications, use the instrumentarium to remove the screws.

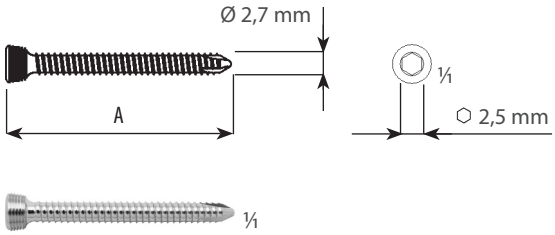
FIBULAR DISTAL PLATE

FIBULAR DISTAL PLATES ANGULARLY STABLE



SSt	Ti	holes	A	síla
129 78 5180	**129 78 5183**	4	57 mm	2,2 mm
129 78 5190	**129 78 5193**	6	73 mm	2,2 mm
129 78 5200	**129 78 5203**	8	89 mm	2,2 mm
129 78 5210	**129 78 5213**	10	105 mm	2,2 mm

LOCKING BONE SCREWS 3,5/2,7 mm



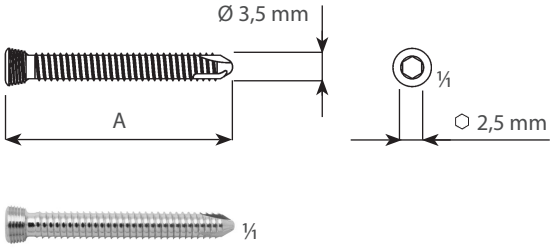
129 77 7531
self-tapping
30 mm

NOTES:
drilled with Ø 2.0 mm wire
introduction by a screwdriver with 2.5 mm socket

SSt	Ti	A
129 77 7431	**129 77 7434**	10 mm
129 77 7441	**129 77 7444**	12 mm
129 77 7451	**129 77 7454**	14 mm
129 77 7461	**129 77 7464**	16 mm
129 77 7471	**129 77 7474**	18 mm
129 77 7481	**129 77 7484**	20 mm
129 77 7491	**129 77 7494**	22 mm
129 77 7501	**129 77 7504**	24 mm
129 77 7511	**129 77 7514**	26 mm
129 77 7521	**129 77 7524**	28 mm
129 77 7531	**129 77 7534**	30 mm
129 77 7541	**129 77 7544**	32 mm
129 77 7551	**129 77 7554**	34 mm
129 77 7561	**129 77 7564**	36 mm
129 77 7571	**129 77 7574**	38 mm
129 77 7921	**129 77 7924**	40 mm
129 77 7931	**129 77 7934**	42 mm
129 77 7941	**129 77 7944**	44 mm
129 77 7951	**129 77 7954**	46 mm
129 77 7961	**129 77 7964**	48 mm
129 77 7971	**129 77 7974**	50 mm

NOTES: SSt – stainless steel in accordance with ISO 5832-1 Ti – titanium version, material: Ti6Al4V ELI in accordance with ISO 5832-3

LOCKING BONE SCREWS 3,5 mm

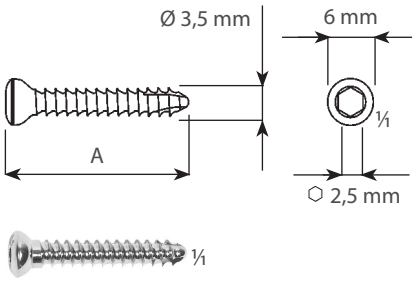


129 77 7131
self-tapping
30 mm

NOTES:
drilled with Ø 2.9 mm drill
introduction by a screwdriver with 2.5 mm socket

SSt	Ti	A
129 77 7021	**129 77 7024**	8 mm
129 77 7031	**129 77 7034**	10 mm
129 77 7041	**129 77 7044**	12 mm
129 77 7051	**129 77 7054**	14 mm
129 77 7061	**129 77 7064**	16 mm
129 77 7071	**129 77 7074**	18 mm
129 77 7081	**129 77 7084**	20 mm
129 77 7091	**129 77 7094**	22 mm
129 77 7101	**129 77 7104**	24 mm
129 77 7111	**129 77 7114**	26 mm
129 77 7121	**129 77 7124**	28 mm
129 77 7131	**129 77 7134**	30 mm
129 77 7141	**129 77 7144**	32 mm
129 77 7151	**129 77 7154**	34 mm
129 77 7161	**129 77 7164**	36 mm
129 77 7171	**129 77 7174**	38 mm
129 77 7181	**129 77 7184**	40 mm
129 77 7191	**129 77 7194**	42 mm
129 77 7201	**129 77 7204**	44 mm
129 77 7211	**129 77 7214**	46 mm
129 77 7221	**129 77 7224**	48 mm
129 77 7231	**129 77 7234**	50 mm
129 77 7241	**129 77 7244**	55 mm
129 77 7251	**129 77 7254**	60 mm
129 77 7261	**129 77 7264**	65 mm
129 77 7271	**129 77 7274**	70 mm
129 77 7281	**129 77 7284**	75 mm

SELF-TAPPING CORTICAL BONE SCREWS – HA 3,5



129 79 5284
self-tapping
24 mm

NOTES:
drilled with Ø 2.9 mm drill
introduction by a screwdriver with 2.5 mm socket

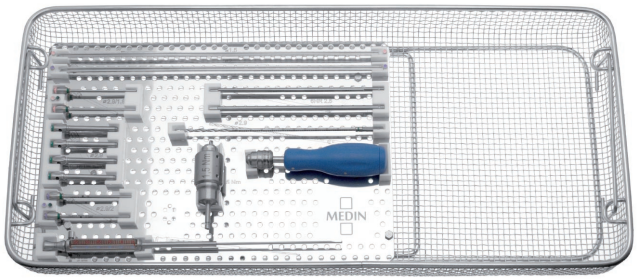
SSt	Ti	A
129 79 5241	**129 79 5244**	16 mm
129 79 5251	**129 79 5254**	18 mm
129 79 5261	**129 79 5264**	20 mm
129 79 5271	**129 79 5274**	22 mm
129 79 5281	**129 79 5284**	24 mm
129 79 5291	**129 79 5294**	26 mm
129 79 5301	**129 79 5304**	28 mm
129 79 5311	**129 79 5314**	30 mm
129 79 5321	**129 79 5324**	32 mm
129 79 5331	**129 79 5334**	34 mm
129 79 5341	**129 79 5344**	36 mm
129 79 5351	**129 79 5354**	38 mm
129 79 5361	**129 79 5364**	40 mm
129 79 5371	**129 79 5374**	42 mm
129 79 5441	**129 79 5444**	44 mm
129 79 5451	**129 79 5454**	46 mm
129 79 5461	**129 79 5464**	48 mm
129 79 5391	**129 79 5394**	50 mm
129 79 5401	**129 79 5404**	55 mm
129 79 5411	**129 79 5414**	60 mm
129 79 5421	**129 79 5424**	65 mm
129 79 5431	**129 79 5434**	70 mm

NOTES: SSt – stainless steel in accordance with ISO 5832-1 Ti – titanium version, material: Ti6Al4V ELI in accordance with ISO 5832-3

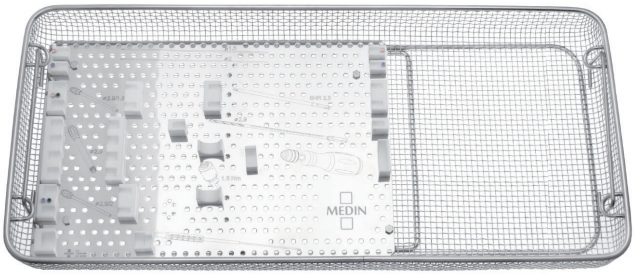
INSTRUMENTS FOR ANGULARLY STABLE PLATES WITH SCREWS 3,5 mm

139 09 0250
set

			pcs
1	**129 09 2571**	K-wire with shank; 2,0 mm; 300 mm	2
2	**129 09 3000**	Guide rod 1,5 mm; 300 mm	2
3	**129 69 3360**	Aiming sleeve lockable 2,9 mm; 60 mm	3
4	**129 69 3370**	Aiming sleeve for wires 1,5 mm; 75 mm	2
5	**129 69 4360**	Aiming sleeve for wires 2,0 mm; 75 mm	2
6	**129 69 4780**	Depth gauge	1
7	**129 69 5131**	Screwdriver handle	1
8	**129 69 5126**	Torque limiter 1,5 Nm	1
9	**129 69 5231**	Screwdriver; hexagon 2,5 mm; 160 mm	1
10	**129 79 9981**	Drill 2,9 mm; 190 mm	1



SET OF INSTRUMENTS FOR ASP 3,5
139 09 0255
540 × 240 × 50 mm
with instruments



SIEVE FOR INSTRUMENTS FOR ASP 3,5
129 69 4390
540 × 240 × 50 mm
without instruments

MEDI

2011