

EFFICIENT MOBILITY



DynafitSystem®

Forefoot Osteosynthesis Solution
Surgical Technique



DynafitSystem®

SURGICAL TECHNIQUE

IMPLANT DEDICATED TO



► **AN EASY AND QUICK MANUAL INSERTION**

► **MINI-INVASIVE**

► **OPTIMIZED COMPRESSION**

► **EASED LOGISTICS**

DynafitSystem® is an innovative solution for the forefoot surgery. The self-compressive screws are suited for Hallux Valgus surgery and associated disorders.

DynafitSystem® screws offer optimal compression respectful of the bone structure and the soft tissues.

The insertion and removal are facilitated.

The range is divided in mini-kits which facilitate storage and handling. Implants are available sterile.

Each mini kit corresponds to a different pathology.

FOREFOOT PATHOLOGIES



Total Compression
between 0.5 and 0.6 mm

SUMMARY

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SURGICAL TECHNIQUE FOR A PERFECT CONTROL

DynafitSystem® - SCARF OSTEOTOMY

1

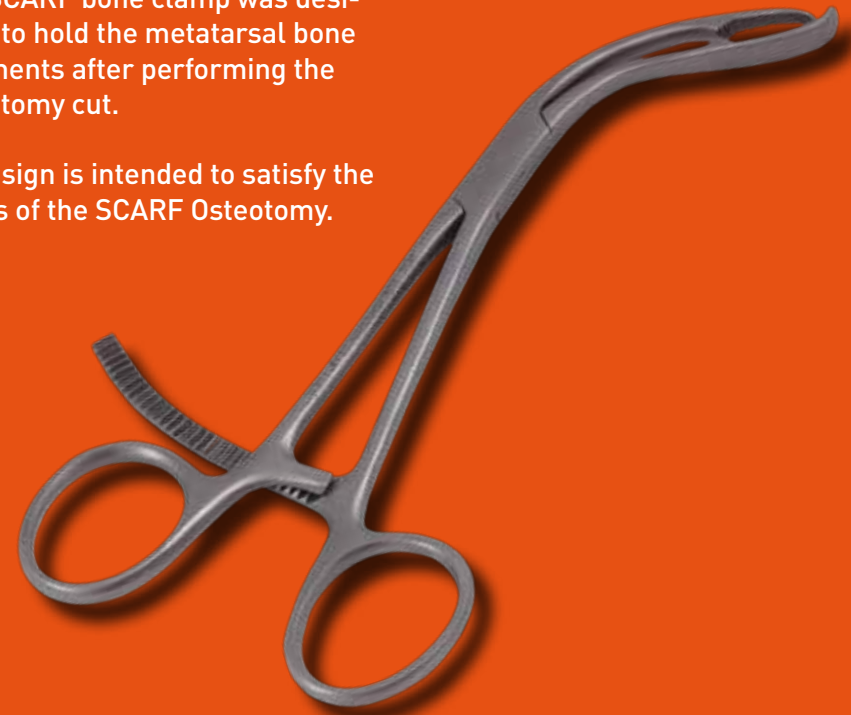
SCARF OSTEOTOMY



- ▶ Self compressive implant
- ▶ Ø3.2mm
- ▶ Cannulated
- ▶ Self-drilling
- ▶ Self-tapping
- ▶ Double threads
- ▶ TA6V-Eli Alloy

The SCARF bone clamp was designed to hold the metatarsal bone fragments after performing the osteotomy cut.

Its design is intended to satisfy the needs of the SCARF Osteotomy.



TIP: The SCARF bone clamp is optional.

DynafitSystem® - SCARF OSTEOTOMY

1

PREOPERATIVE PLANNING



Determine the angles in the sagittal plan according to the radiography of the foot in load

2

APPROACH



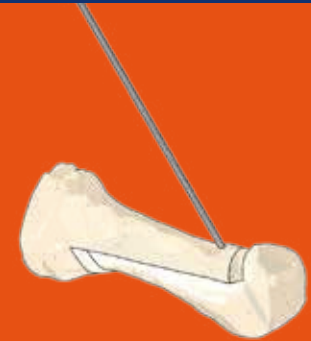
The exostosis is taken out using an oscillating saw. Then the osteotomy lines are performed.

The transverse lines are 5 mm from the capsules, between 2 and 3 mm from the plantar and dorsal surfaces, 60° from the longitudinal line.

The longitudinal line can be more or less oblique according to the necessity to lower the metatarsal head.

3

CUT PLANIFICATION



Move the metatarsal head to correct the deformation.

The Scarf is fixed thanks to two self compressive screws, one in the shaft area and another in the metaphysary-shaft area to avoid the osteotomy derotation.

The movement is stabilized thanks to Ø1.0mm Kirschner wires, inserted according to the insertion axis of the implants determined prior to the operation.

DynafitSystem® - SCARF OSTEOTOMY

4

DRILLING (Optional)

Drill the cortical with the cannulated drill Ø1.9 mm armed with the wire.

5

UNDERCUTTING

The head needs undercutting with the cannulated countersink. The head has a mechanical stop. Therefore there is no risk of undercutting too deeply.

6

MEASURING

The length of the implant to insert is indicated by the Direct measuring gauge for Kirschner Wires. The gauge is drawn over the wire and comes to a stop against the cortical bone.

Tip

the graduated drill helps to check the second cortical. The measuring step with the Direct measuring gauge is optional. Select a 2mm higher value than the value indicated on the drill.

DynafitSystem® - SCARF OSTEOTOMY

7 INSERTING THE IMPLANT



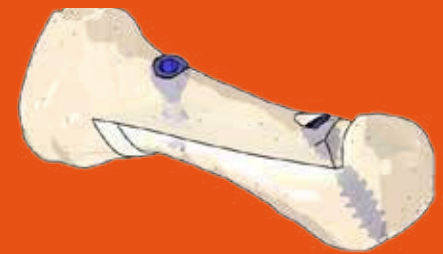
Drill the cortical bone with the Ø1.9mm cannulated drill, drawn over the wire.

8 SCREWING



The manual screwing of the implant is eased by the proximal and distal double-threads. The implant head is screwed until fully buried. Less than 2 turns are needed.

9 RESECTION AND CONTROLE



The bone prominence of the proximal fragment is disposed of with the oscillating saw. The surgeon controls the osteotomy with an x-ray. After this operation, a phalangeal varus osteotomy (Akin) is often needed and eventually a shortening if it wasn't performed before or if it was not shortened enough.

SURGICAL TECHNIQUE FOR A PERFECT CONTROL

DynafitSystem® - CHEVRON OSTEOTOMY

2

CHEVRON OSTEOTOMY



- ▶ self-compressive
- ▶ Ø3.2mm
- ▶ not cannulated
- ▶ self tapping
- ▶ self drilling
- ▶ retro tapping
- ▶ double thread
- ▶ TA6V-ELI titanium alloy



- ▶ self compressive implant
- ▶ Ø2.6mm
- ▶ not cannulated
- ▶ self tapping
- ▶ self drilling
- ▶ retro tapping
- ▶ double thread
- ▶ TA6V-ELI titanium alloy

DynafitSystem® - CHEVRON OSTEOTOMY

1

PREOPERATIVE PLANNING



Determine the angles in the sagittal plan according to the radiography of the foot in load

2

OSTEOTOMY



Free the Metatarsal-sesamoidal-phalangeal complex.

The lateral sesamoidal is liberated. The suspensory ligament, the adductor and the flexor are cut. The lateral metatarsal-phalangeal ligament has to be preserved to avoid an over-correction.

The exostosis is taken out using an oscillating saw. Then the osteotomy lines are performed. The transverse lines are 5mm from the capsules, between 2 and 3 mm from the surface, 60° from the longitudinal line. The longitudinal line is normally parallel to the M1 plantar face. It can be more or less oblique according to the necessity to lower the metatarsal head.

3

STABILIZATION



Move the metatarsal head to correct the deformation.

The Chevron is fixed thanks to a self compressive screw in the metaphysary-shaft area, anchored in the spongy of the metatarsal head.

The movement is stabilized thanks to Ø1.0mm Kirschner wires, inserted according to the insertion axis of the implants determined prior to the operation.

DynafitSystem® - CHEVRON OSTEOTOMY

4

DRILLING

Drill the cortical with the cannulated drill Ø1.9mm armed with the wire.

5

UNDERCUTTING

The head needs undercutting with the cannulated countersink. The head has a mechanical stop. Therefore there is no risk of undercutting too deeply.

6

MEASURING

The length of the implant to insert is indicated by the Direct measuring gauge for Kirschner Wires. The gauge is drawn over the wire and comes to a stop against the cortical bone.

Tip

the graduated drill helps to check the second cortical. The measuring step with the Direct measuring gauge is optional. Select a 2mm higher value than the value indicated on the drill.

DynafitSystem® - CHEVRON OSTEOTOMY

7

REMOVING THE WIRE

The wire is withdrawn in order to insert the non cannulated implant. A cannulated implant can also be used for a Chevron osteotomy. In that case, the wire is left in place to put the implant on the wire and to screw with the cannulated screwdriver.

8

SCREWING



Place the implant in the gripping support thanks to its gripping system. The implant is screwed manually. This is eased by the proximal and distal double thread. The head of the implant is screwed until totally buried: only two turns are needed.

9

RESECTION AND CONTROL



The bone prominence of the proximal fragment is disposed of with the oscillating saw. The surgeon controls the osteotomy with an x-ray. After this operation, a phalangeal varus osteotomy (Akin) is often needed and eventually a shortening if it wasn't performed before or if it was not shortened enough.

SURGICAL TECHNIQUE FOR A PERFECT CONTROL

DynaFitSystem® - PHALANGEAL OSTEOTOMY

3

PHALANGEAL OSTEOTOMY



- ▶ Self compressive implant
- ▶ Ø2.6mm
- ▶ Non cannulated
- ▶ Self tapping
- ▶ Self drilling
- ▶ Retro-tapping
- ▶ Double-thread
- ▶ TA6V titane alloy



- ▶ Self compressive implant
- ▶ Ø2.6mm
- ▶ Non cannulated
- ▶ Self tapping
- ▶ Self drilling
- ▶ Retro-tapping
- ▶ Double-thread
- ▶ TA6V titane alloy

DynafitSystem® - PHALANGEAL OSTEOTOMY

1

PREOPERATIVE PLANNING



Determine, thanks to the feet in load X-rays :

- The HVA Hallux Valgus angle (the angle between the M1 and P1 axis)
- The HVIA angle (between P1 and P2 axis of the first ray) in the sagittal plan

2

OSTEOTOMY



Cut medially a bone wedge, generally at the level of the proximal shaft. This operation allows phalangeal varisation, its shortening and if necessary its derotation correction in the frontal plan.

3

BROCHAGE



Join both bone segments.

The osteotomy cut is fixed with a self-compressive screw inserted at the base of the phalanx (medial proximal epiphysis), and that leads towards lateral distal epiphysis.

The shortening is fixed with Ø1.0mm Kirschner wires inserted according to the insertion axis of the implants determined prior to the operation.

SURGICAL TECHNIQUE FOR A PERFECT CONTROL

DynafitSystem® - PHALANGEAL OSTEOTOMY

4

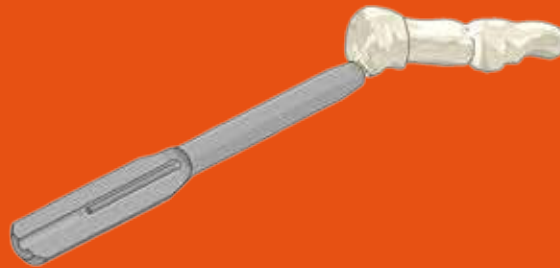
DRILLING



Drill the cortical with the Ø1.9mm cannulated drill armed with a wire

5A

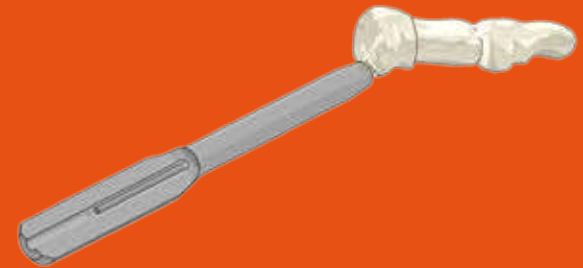
DIA-METAPHYSEAL MEASURING



Perform an undercut of the head with the cannulated countersink bit. The head has a mechanical stop so there is no risk of undercutting too deeply.

5B

EPIPYSIS MEASURING



The length of the implant to be placed is indicated on the Direct measuring gauge. The latter is placed over the wire and comes to a stop against the cortical.

DynafitSystem® - PHALANGEAL OSTEOTOMY

7

PLACING THE IMPLANT

8

SCREWING

9

CONTROLLING



The implant is placed over the wire with its gripping system. The support is removed from the wire to allow the screwing of the implant.



Control the osteotomy on an X-ray.

4

WEIL OSTEOTOMY



- ▶ Self-compressive implant
- ▶ Ø2.0mm
- ▶ Non-cannulated
- ▶ Self-tapping
- ▶ Self-drilling
- ▶ Double thread
- ▶ TA6V-ELI titanium alloy



The Weil bone lever allows to release the lateral metatarsal head and hold firmly both fragments once the osteotomy is over.

This instrument is added if requested to the instrument kit for sterile implants but it is automatically found in the non sterile Ø2.0mm kit.

DynafitSystem® - WEIL OSTEOTOMY

1

PREOPERATIVE PLANNING

Using the X-ray, determine the lowering and/or the shortening of the lateral metatarsal responsible for hammer toes. The aim is to spread the load the best way possible on the metatarsal heads.

2

OSTEOTOMY



Cut the lateral ligaments, and then proceed to the osteotomy with an oscillating saw. The section of a bone wedge more or less beveled allows to lower and redirect efficiently the metatarsal head. The proximal fragment is then moved back to obtain the desired shortening.

3

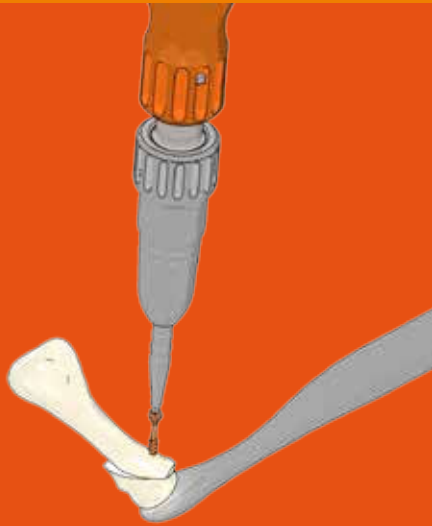
CUTTING



The bone extremity is cut in order to respect the metatarsophalangeal articulation.

DynafitSystem® - WEIL OSTEOTOMY

4

SCREWING

The implant is connected to the screwdriver bit thanks to its gripping system. The implant is screwed using the screwdriver rod. The Weil Bone Lever supports the distal fragment during the fixation.

5

CONTROLLING

Control the osteotomy on an X-ray

SURGICAL TECHNIQUE FOR A PERFECT CONTROL

DynafitSystem® - CLINICAL CASES

5 CLINICAL CASES

Case N°1



Case N°2

P For a quick and comfort





able return to mobility

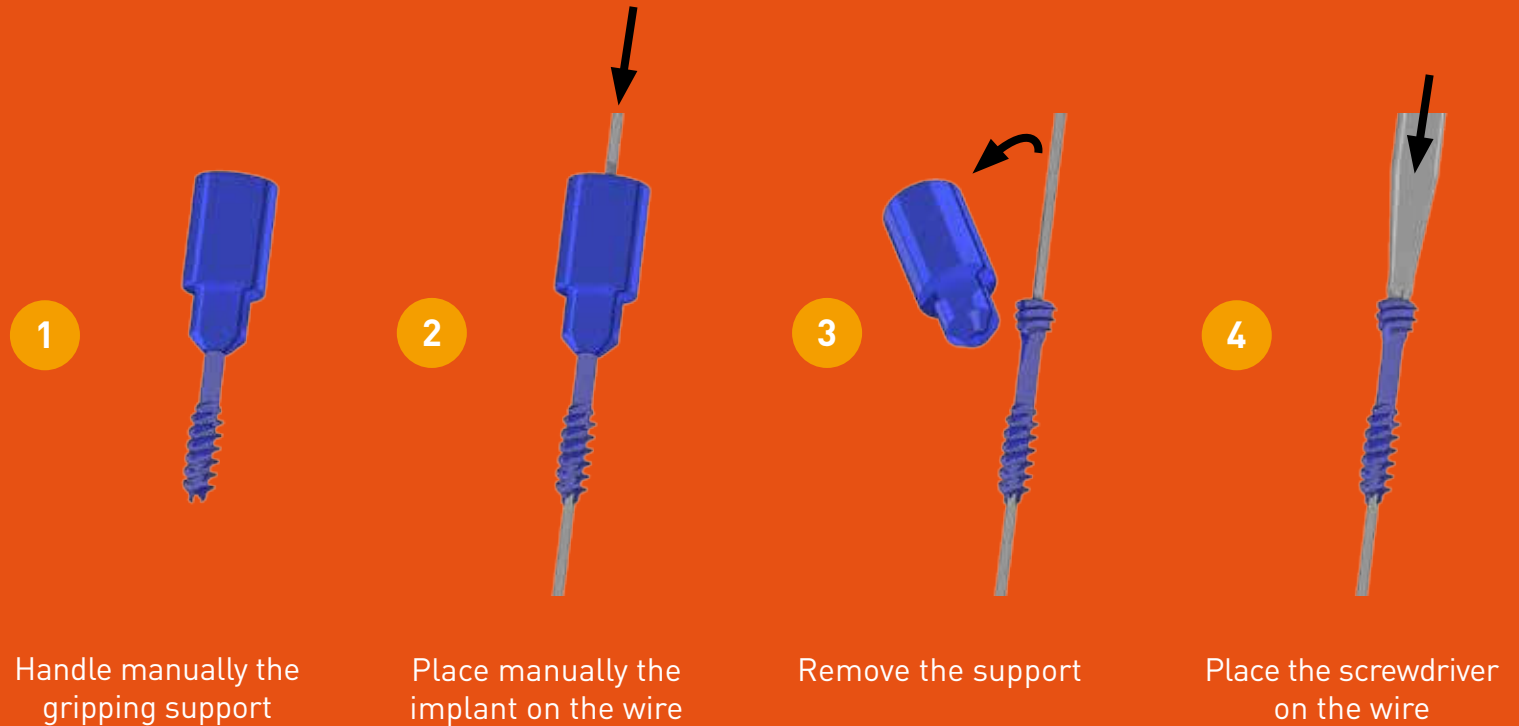


6 Contactless gripping of the cannulated screws

SECURITY AND INTEGRITY

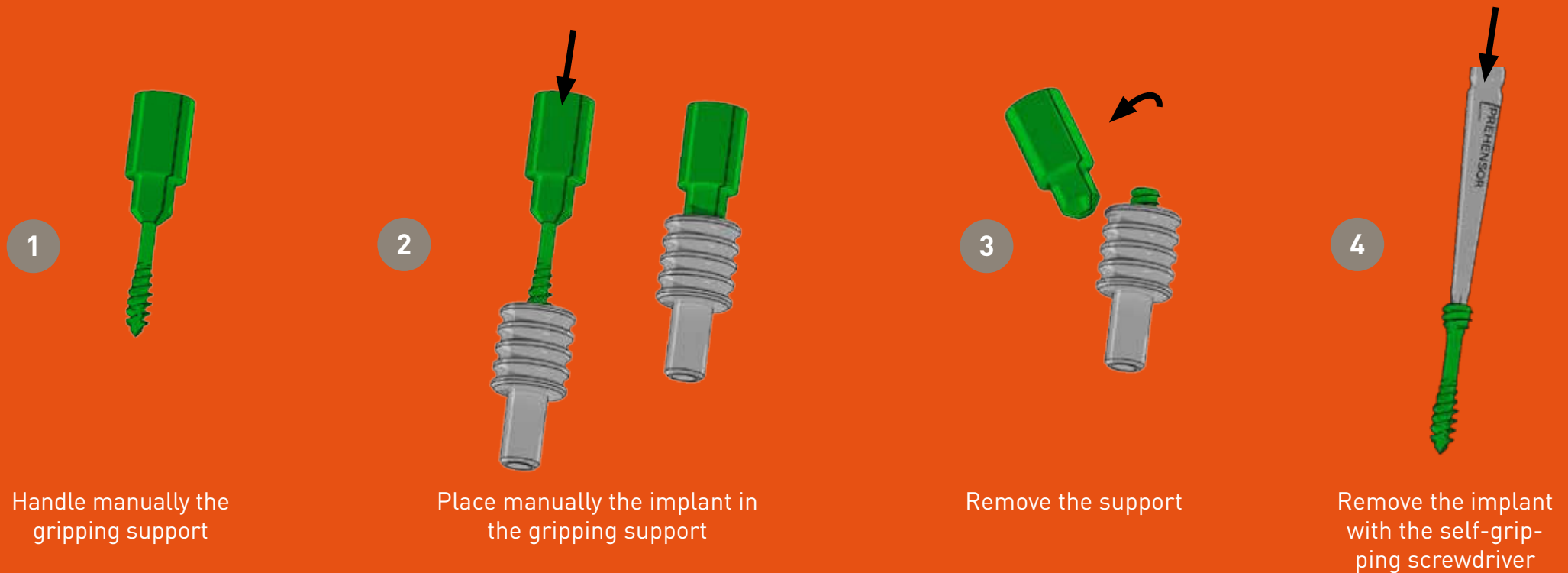
The DynafitSystem® screws have multiple gripping possibilities.

Their silicone gripping support allows to place the implant over the wire easily, without contact and quickly.



DynafitSystem® - GRIPPING SYSTEM

Contactless gripping of the non-cannulated screws



The **DynafitSystem®** non cannulated screws have a gripping support specially developed for these implants. This metal support avoids the ejection of the implant from its silicone support when the self-gripping screwdriver is used. It can also be used with cannulated implants.

Self compressive screws NON-STERILE

NON-STERILE

Ø3.2mm Cannulated *Scarf Osteotomy*

S10TL12	Cannulated self-compressive screw Ø3.2mm L12mm
S10TL14	Cannulated self-compressive screw Ø3.2mm L14mm
S10TL16	Cannulated self-compressive screw Ø3.2mm L16mm
S10TL18	Cannulated self-compressive screw Ø3.2mm L18mm
S10TL20	Cannulated self-compressive screw Ø3.2mm L20mm
S10TL22	Cannulated self-compressive screw Ø3.2mm L22mm
S10TL24	Cannulated self-compressive screw Ø3.2mm L24mm
S10TL26	Cannulated self-compressive screw Ø3.2mm L26mm

Ø2.6mm Cannulated *Phalangeal Osteotomies*

S11TL12	Cannulated self-compressive screw Ø2.6mm L12mm
S11TL14	Cannulated self-compressive screw Ø2.6mm L14mm
S11TL16	Cannulated self-compressive screw Ø2.6mm L16mm
S11TL18	Cannulated self-compressive screw Ø2.6mm L18mm
S11TL20	Cannulated self-compressive screw Ø2.6mm L20mm
S11TL22	Cannulated self-compressive screw Ø2.6mm L22mm
S11TL24	Cannulated self-compressive screw Ø2.6mm L24mm
S11TL26	Cannulated self-compressive screw Ø2.6mm L26mm

Ø3.2mm Non Cannulated *Chevron Osteotomy*

S13TL12	Self-compressive screw Ø3.2mm L12mm
S13TL14	Self-compressive screw Ø3.2mm L14mm
S13TL16	Self-compressive screw Ø3.2mm L16mm
S13TL18	Self-compressive screw Ø3.2mm L18mm
S13TL20	Self-compressive screw Ø3.2mm L20mm
S13TL22	Self-compressive screw Ø3.2mm L22mm

Ø2.6mm Non Cannulated *Phalangeal Osteotomies & Mini-Chevron*

S14TL12	Self-compressive screw Ø2.6mm L12mm
S14TL14	Self-compressive screw Ø2.6mm L14mm
S14TL16	Self-compressive screw Ø2.6mm L16mm
S14TL18	Self-compressive screw Ø2.6mm L18mm
S14TL20	Self-compressive screw Ø2.6mm L20mm
S14TL22	Self-compressive screw Ø2.6mm L22mm
S14TL24	Self-compressive screw Ø2.6mm L24mm
S14TL26	Self-compressive screw Ø2.6mm L26mm

Ø2.0mm *Weil Osteotomy*

S12TL11	Self-compressive screw Ø2.0mm L11mm
S12TL12	Self-compressive screw Ø2.0mm L12mm
S12TL13	Self-compressive screw Ø2.0mm L13mm
S12TL14	Self-compressive screw Ø2.0mm L14mm

In the box :

- Non sterile implant
- gripping support
- Instruction for Use (IFU)



Self compressive screws STERILE

STERILE

Ø3.2mm Cannulated *Scarf Osteotomy*



S15TL12	Cannulated self-compressive screw Ø3.2mm L12mm
S15TL14	Cannulated self-compressive screw Ø3.2mm L14mm
S15TL16	Cannulated self-compressive screw Ø3.2mm L16mm
S15TL18	Cannulated self-compressive screw Ø3.2mm L18mm
S15TL20	Cannulated self-compressive screw Ø3.2mm L20mm
S15TL22	Cannulated self-compressive screw Ø3.2mm L22mm
S15TL24	Cannulated self-compressive screw Ø3.2mm L24mm
S15TL26	Cannulated self-compressive screw Ø3.2mm L26mm

Ø2.6mm Cannulated *Phalangeal Osteotomies*



S16TL12	Cannulated self-compressive screw Ø2.6mm L12mm
S16TL14	Cannulated self-compressive screw Ø2.6mm L14mm
S16TL16	Cannulated self-compressive screw Ø2.6mm L16mm
S16TL18	Cannulated self-compressive screw Ø2.6mm L18mm
S16TL20	Cannulated self-compressive screw Ø2.6mm L20mm
S16TL22	Cannulated self-compressive screw Ø2.6mm L22mm
S16TL24	Cannulated self-compressive screw Ø2.6mm L24mm
S16TL26	Cannulated self-compressive screw Ø2.6mm L26mm

Ø3.2mm Non Cannulated *Chevron Osteotomy*



S18TL12	Self-compressive screw Ø3.2mm L12mm
S18TL14	Self-compressive screw Ø3.2mm L14mm
S18TL16	Self-compressive screw Ø3.2mm L16mm
S18TL18	Self-compressive screw Ø3.2mm L18mm
S18TL20	Self-compressive screw Ø3.2mm L20mm
S18TL22	Self-compressive screw Ø3.2mm L22mm

Ø2.6mm Non Cannulated *Phalangeal Osteotomies & Mini-Chevron*



S19TL12	Self-compressive screw Ø2.6mm L12mm
S19TL14	Self-compressive screw Ø2.6mm L14mm
S19TL16	Self-compressive screw Ø2.6mm L16mm
S19TL18	Self-compressive screw Ø2.6mm L18mm
S19TL20	Self-compressive screw Ø2.6mm L20mm
S19TL22	Self-compressive screw Ø2.6mm L22mm
S19TL24	Self-compressive screw Ø2.6mm L24mm
S19TL26	Self-compressive screw Ø2.6mm L26mm

Ø2.0mm *Weil Osteotomy*



S17TL11	Self-compressive screw Ø2.0mm L11mm
S17TL12	Self-compressive screw Ø2.0mm L12mm
S17TL13	Self-compressive screw Ø2.0mm L13mm
S17TL14	Self-compressive screw Ø2.0mm L14mm

In the box :

- Sterile Implant
- Tyvek® pouch packaging
- Instruction for Use (IFU)
- Traceability labels

On the box :

- Traceability label
- Sterilization green label
- Integrity label

Instrumentation - Ancillary

Scarf & Chevron osteotomies



Sterilization Tray / Screw Ø3.2mm : Description	Codes	Qty
Cannulated hexagonal 1.8mm screwdriver shaft with AO QC system	INS-101	1
Kirschner Wire Ø1.0mm, length 80mm with Lancet/Round tip	33. 3210. 080	6
Cannulated hexagonal 1.8mm screwdriver shaft with self-holding feature and AO QC system	INS-104	1
Countersink bit Ø2.5mm with AO QC system	INS-105	1
Scarf bone clamp	INS-106	1
Instruments Sterilization tray & Screws Ø3.2mm	INS-107	1
AO Ø4.5mm Quick Coupling handle	INS-111	1
Direct measuring gauge for Kirschner wires Ø1.0mm length 80mm	INS-112	1
Cannulated graduated drill bit Ø1.9 mm with AO QC system	INS-114	1
Sterilizable Kirschner wire dispenser tube	INS-115	1
Graduated drill bit Ø1.9 mm with AO QC system	INS-116	1
Device for holding Ø2.6mm screws	INS-117	1

Phalangeal & Mini-Chevron osteotomies



Sterilization Tray / Screw Ø2.6mm : Description	Codes	Qty
Cannulated hexagonal 1.8mm screwdriver shaft with AO QC system	INS-101	1
Kirschner Wire Ø1.0mm, length 80mm with Lancet/Round tip	33. 3210. 080	6
Cannulated hexagonal 1.8mm screwdriver shaft with self-holding feature and AO QC system	INS-104	1
Countersink bit Ø2.5mm with AO QC system	INS-105	1
Instruments Sterilization tray & Screws Ø2.6mm	INS-108	1
AO Ø4.5mm Quick Coupling handle	INS-111	1
Direct measuring gauge for Kirschner wires Ø1.0mm length 80mm	INS-112	1
Cannulated graduated drill bit Ø1.9 mm with AO QC system	INS-114	1
Sterilizable Kirschner wire dispenser tube	INS-115	1
Graduated drill bit Ø1.9 mm with AO QC system	INS-116	1
Device for holding Ø2.6mm screws	INS-118	1

STERILE KIT

Scarf, Chevron, Mini-Chevron, Phalangeal & Weil osteotomies

Weil osteotomy



Sterilization Tray / Screw Ø2.0mm : Description	Codes	Qty
Hexagonal 1.5mm screwdriver shaft with self-holding feature and AO QC system	INS-102	1
Instruments Sterilization tray & Screws Ø2.0mm	INS-109	1
AO Ø4.5mm Quick Coupling handle	INS-111	1
Weil bone lever	INS-113	1
Device for holding Ø2.0mm screws	INS-119	1



Complete Sterilization Tray for Screws Ø3.2, Ø2.6, Ø2.0mm : Description	Codes	Qty
Cannulated hexagonal 1.8mm screwdriver shaft with AO QC system	INS-101	1
Hexagonal 1.5mm screwdriver shaft with self-holding feature and AO QC system	INS-102	1
Kirschner Wire Ø1.0mm, length 80mm with Lancet/Round tip	33. 3210. 080	6
Cannulated hexagonal 1.8mm screwdriver shaft with self-holding feature and AO QC system	INS-104	1
Countersink bit Ø2.5mm with AO QC system	INS-105	1
Scarf bone clamp	INS-106	1
Instruments Sterilization tray for Screws Ø3.2/Ø2.6/Ø2.0mm	INS-120	1
AO Ø4.5mm Quick Coupling handle	INS-111	1
Direct measuring gauge for Kirschner wires Ø1.0mm length 80mm	INS-112	1
Weil bone lever	INS-113	1
Cannulated graduated drill bit Ø1.9 mm with AO QC system	INS-114	1
Sterilizable Kirschner wire dispenser tube	INS-115	1
Graduated drill bit Ø1.9 mm with AO QC system	INS-116	1
Device for holding Ø2.6mm screws	INS-117	1
Device for holding Ø2.6mm screws	INS-118	1
Device for holding Ø2.0mm screws	INS-119	1
Ø3.2mm screw template	INS-121	1
Ø2.6mm screw template	INS-122	1
Ø2.0mm screw template	INS-123	1



2 rue Robert Schuman
44408 Rezé - France
Tél. : +33 (0)2 36 56 96 70
Fax : +33 (0)2 51 70 61 34

www.neosteo.com