intrauma®

EN

Bones in motion

DF Distal Femur.

O'nil The internal fixator

Rail

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DF Distal Femur.

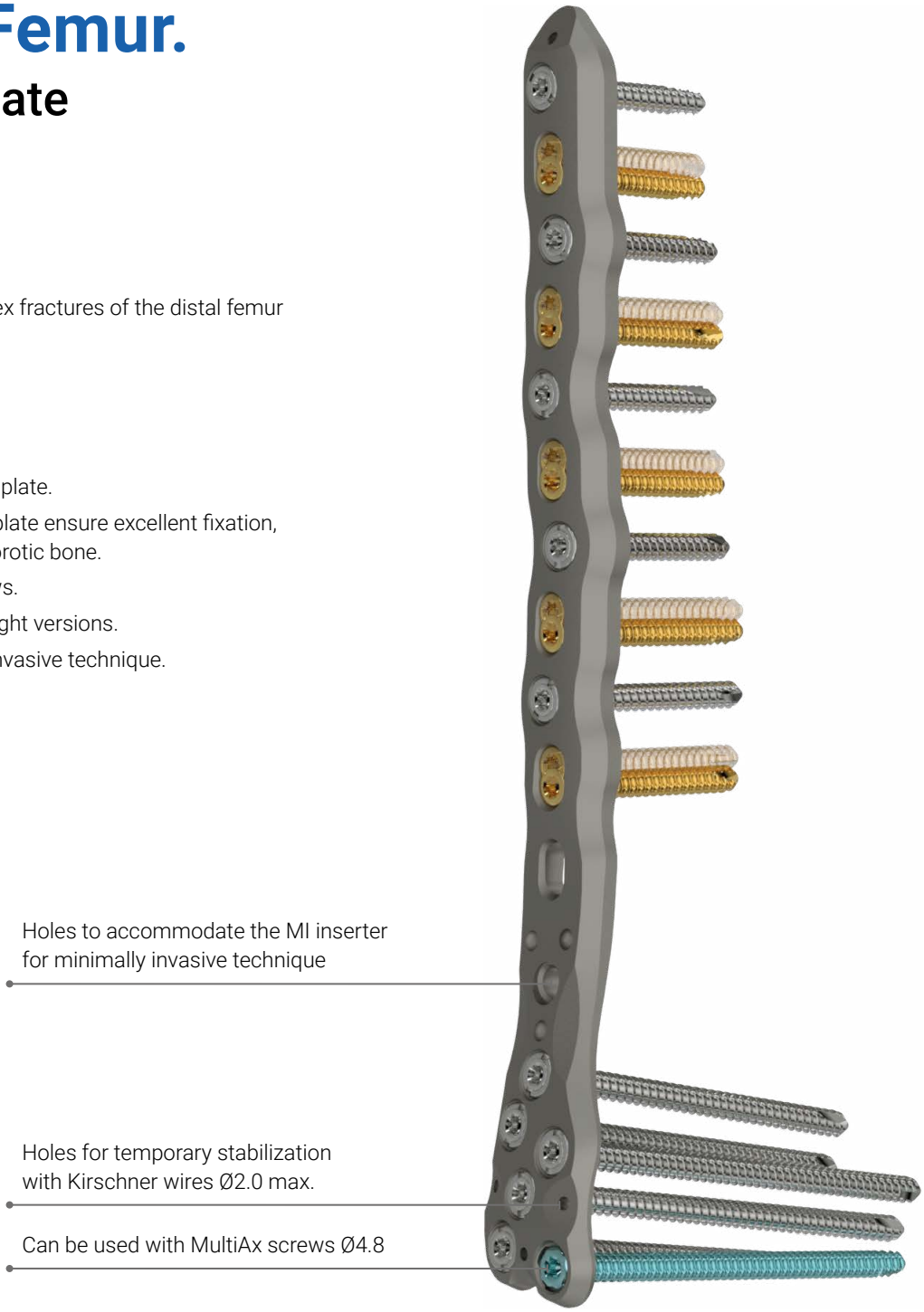
Periarticular plate

Indications

- Intra- and extra-articular complex fractures of the distal femur
- Distal diaphysis fractures
- Periprosthetic knee fractures

Features

- Anatomical low-profile titanium plate.
- 6 holes in the distal part of the plate ensure excellent fixation, even in the presence of osteoporotic bone.
- Can be used with MultiAx screws.
- Available in 6 lengths, left and right versions.
- Instrumentation for minimally invasive technique.



Rail Bones in motion

/ DF Distal femur with Rail option

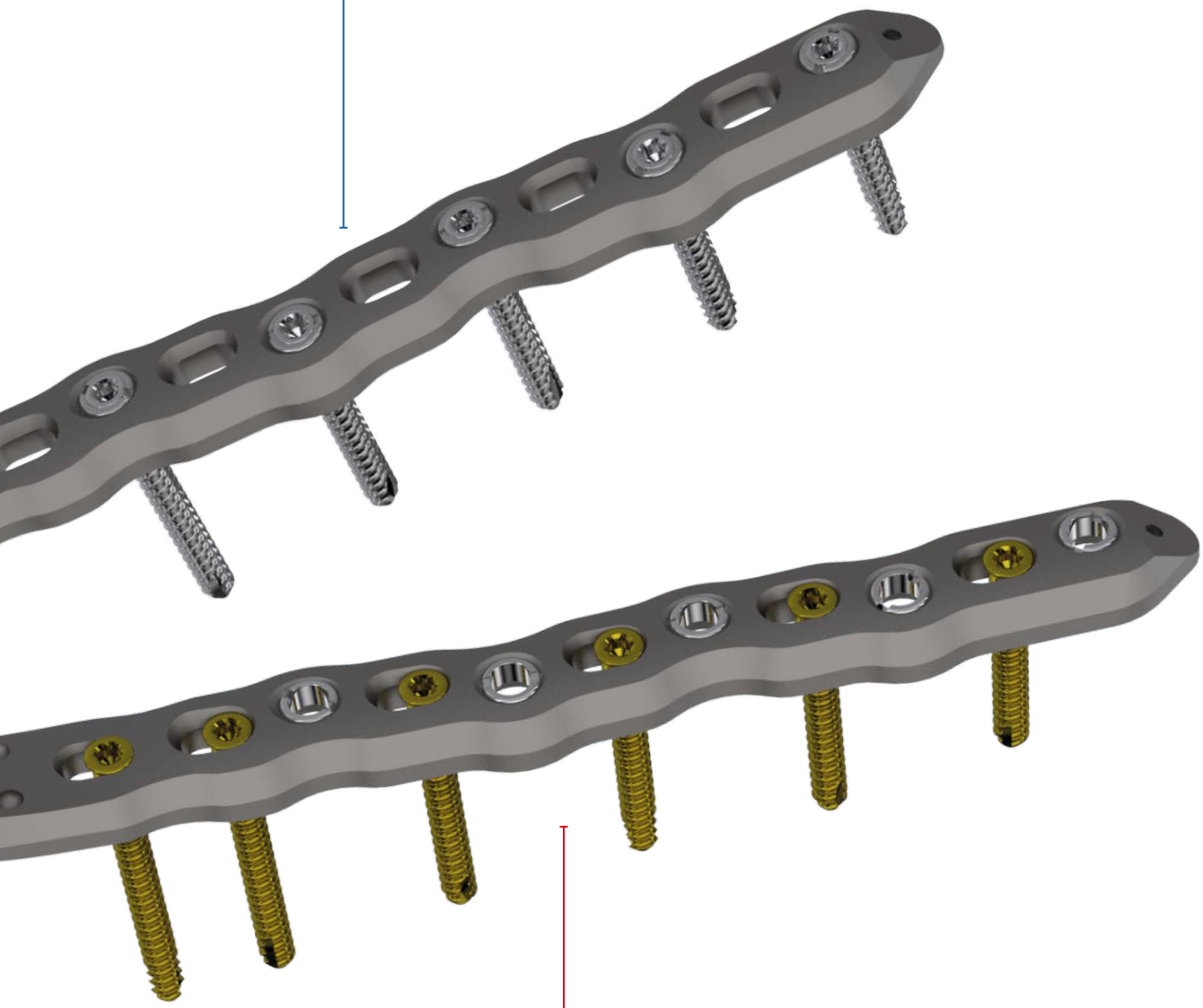
Bridge fixation with angular stability plates is the most widely used method in the treatment of metadiaphyseal and periarticular fractures of the long bones of the lower limb. Delayed union, pseudo-arthrosis, breakage of fixation devices and asymmetrical bone callus formation are often caused by the rigidity of the implants, which do not allow proper load transfer to the stumps.

The patented O'nil angular stability system allows an easy technique and eliminates the risk of cross-threading between the screw head and the plate. The O'nil plates transfer the forces acting on the fracture elastically; by not exerting pressure, they ensure vascularization of the bone. The six screws in the femoral condyles with locked or polyaxial option allow stabilization of the fragments to be optimized, thanks to the correct orientation.

The innovative Rail system is designed to allow use of the most suitable means of fixation for the type of fracture to be treated.

When using the dynamic option system, although resorption and repositioning occur at the level of the fracture rhyme, compression continues to act along the diaphyseal axis, allowing subsequent physiological union and reducing the risk of failure.

1 Angular stability
Angularly stable O'nil screws



2 Dynamic
Rail screws in dynamic position

Rail Bones in motion

Standard Surgical Technique.

Preparation

If the surgical planning foresees the use of Ø4.8mm MultiAx screws, it is advisable to prepare the plate housings outside the operating field. Using the conical bushing disassembler (S554), remove the bushings from the holes in which the MultiAx screws will be inserted.

• 1

Place the plate on the bone and stabilize it using two Ø2.0mm K-wires (S534).

• 2

Operate first on the epiphyseal portion of the plate. For the insertion of self-locking screws, insert the Ø4.0mm conical drill guide (S51) with moderate pressure into the bushing that will hold the screw and drill with the Ø4.0mm drill bit (S52). Pull out the drill bit guide by turning it clockwise while exerting moderate traction.

• 3

Measure the length of the screw to be used with the depth meter (S53) by making sure that the tip rests on the head of the bushing.

• **4**

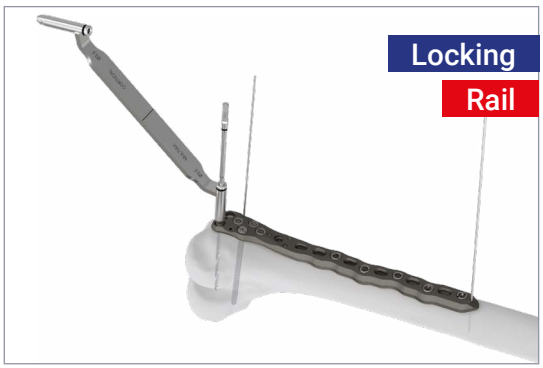
Fully insert the Ø4.8mm self-locking screw by tightening it with the screwdriver (S540HL).

• **5**

If it is necessary to use a Ø4.8mm MultiAx screw in a hole where the bushing had not been previously removed, loosen it with the disassembler (S554) (less than a quarter turn), insert the conical drill guide (S51) and press it into the bushing, finish unscrewing, and remove the bushing. To remove the bushing from the tip of the drill bit guide, it is advisable to hold the bushing with pliers and pull the drill bit guide out by turning and pulling at the same time.

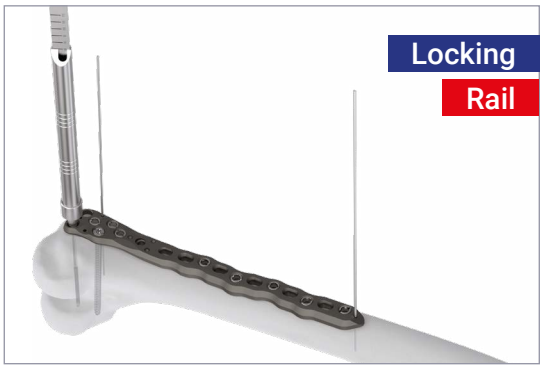
• **6**

To insert the Ø4.8mm MultiAx screws, place the MultiAx side of the Ø4.0mm drill guide (S516) in the hole of the plate, orient it in the desired direction (an angle of ±15° relative to the axis of the hole is allowed; as you tilt the drill bit guide, you will feel a resistance to further tilting once this limit is reached; do not exceed this limit) and drill with the Ø4.0mm drill bit.



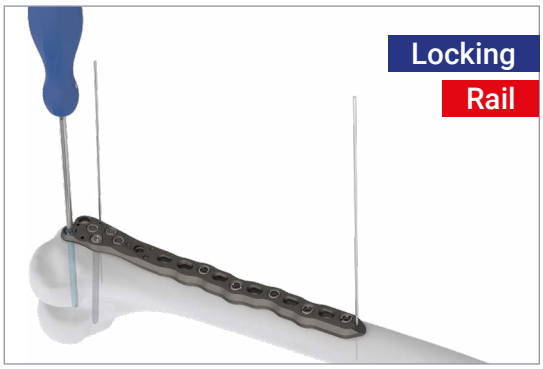
• 7

Measure the length of the screw to be used with the depth meter (S53) by making sure that the tip rests on the internal thread of the hole in the plate.



• 8

Fully insert the Ø4.8mm MultiAx screw by tightening it with the screwdriver (S540HL).



• 9

Insert the remaining self-locking and/or MultiAx screws into the epiphyseal portion of the plate following steps 2-8 and remove the distal K-wire.

• 10

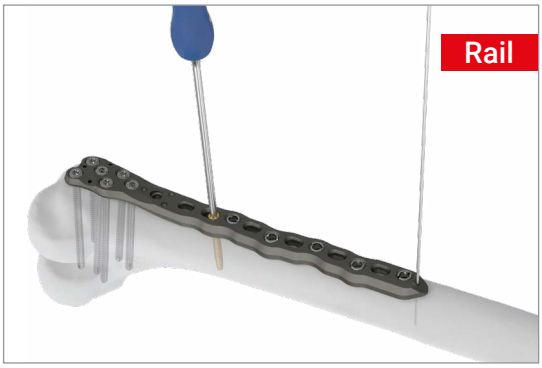
If a locking implant configuration has been chosen, implant the Ø4.8mm self-locking screws in the diaphyseal section of the plate following steps 2-4.

• **11**

Measure the length of the Ø4.8mm Rail screw to be used using the depth meter (S53), which should be brought into contact with the countersink of the slot.

• **12**

Insert the Ø4.8mm Rail screw into the drilled hole, screwing it in tightly using the screwdriver (S540HL).



• **13**

Complete the implant in dynamic configuration by performing steps 10 Dynamic Rail, 11 Rail, 12 Rail in the remaining Rail slots.

Minimally Invasive Technique.

- **Preparation 1**

Insert the MI Aiming arm (S5601 for L implants or S5602 for R implants) on the MI inserter (S5611) (the insertion direction is unambiguous) and join the two components with the MI Handle/ arm connecting screw (S5621), which is screwed in by hand and tightened with the screwdriver (S540HL).

- **Preparation 2**

Attach the MI inserter (S5611) to the plate using the MI handle/ plate connecting screw (S5631), which is screwed in by hand and tightened with the MI assembly bar (S5641). For correct assembly, the lower feet of the inserter must rest in the appropriate housings on the plate.

• **1**

Slide the plate into position on the bone by maneuvering it via the MI inserter (S5611).

• **2**

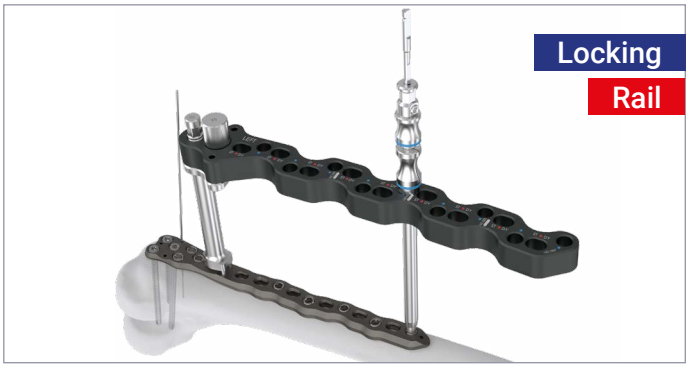
Stabilize the epiphyseal portion of the plate with a Ø2.0mm K-wire (S534). On the MI Aiming arm (S5601 for L implants or S5602 for R implants), locate the white notch that identifies the end of the plate used by its code. Insert a MI Aiming guide (S5201) (blue ring) into the circular hole located distally to the notch and identified by a blue dot.
Insert a MI trocar (S5501) into the guide and push it until its handle is in contact with the aiming arm, helping if necessary with the MI trocar handle (S5502) fitted on the trocar knob. Remove the trocar from the guide while holding it in place.

• **3**

Verify that the MI Stabilizing wire stop (S5352) is mounted on the MI Stabilizing Wire (S5351) (it should be free to move axially on the flattened part of the wire but not to rotate relative to it). If this is not the case, adjust the stop screw with the screwdriver (S540HL). Insert a MI Ø4.0mm locking drill guide for self-locking screws (blue ring) (S5801) into the MI Aiming guide (S5201), push it in contact with the plate until you feel the tip engage with the plate bushing (this is facilitated if you rotate the drill bit guide as you push it when it is in contact with the plate). Insert the stabilization wire into the drill bit guide and screw it into the bone. Bring the stop into contact with the knob of the drill bit guide and lock it in place by screwing in the screw with the screwdriver (S540HL). If necessary, bring the bone back to the plate by manually screwing the wire with the MI assembly bar (S5641).

• 4

Implant the first three distal screws in the epiphyseal portion of the plate following steps 2-9.



• 5

If you have opted for a Locking type implant configuration, with the help of the MI trocar (S5501) and, if necessary, the Mi trocar handle (S5502), insert the second MI Aiming guide (S5201) (blue ring) into one of the circular holes located distally to the stabilization wire and identified by a blue dot.

• 6

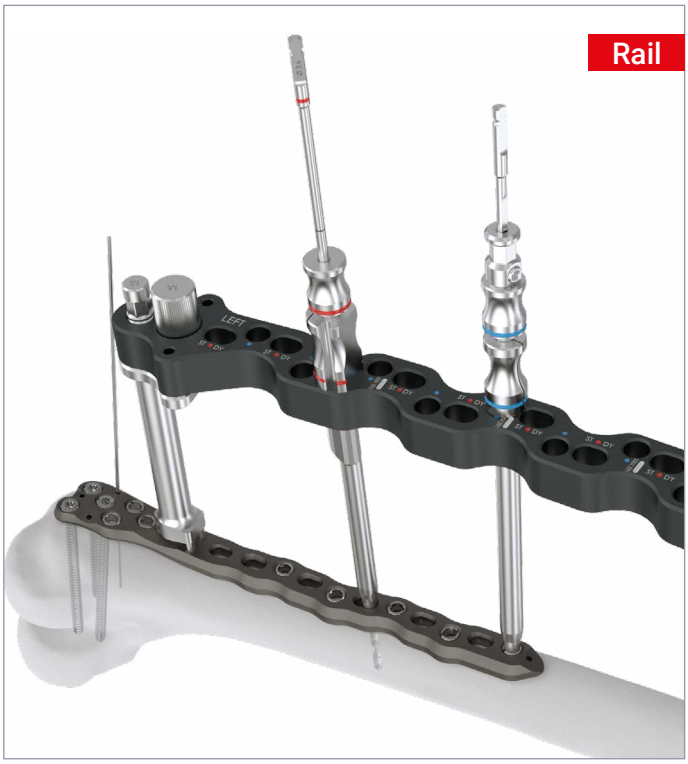
Insert a MI Ø4.0mm locking drill guide for self-locking screws (blue ring) (S5801) into the MI Aiming guide (S5201), push it in contact with the plate until you feel the tip engage with the plate bushing (this is facilitated if you rotate the drill bit guide as you push it when it is in contact with the plate).
Drill the hole for the Ø4.8mm self-locking screw using the MI Ø4.0mm drill bit (S5901).

• **7**

If you have opted for a Rail type implant configuration, with the help of the MI trocar (S5501) and, if necessary, the MI trocar handle (S5502), insert an MI Rail guide for Rail screws (S5211) (red ring) into one of the slots located distally to the stabilization wire and identified by a red dot.
Orient the guide according to the implant configuration chosen. In the case of dynamic implantation, the hole must be made in the proximal part of the slot (through the window on the guide knob you can read “DY” written on the aiming arm).
By contrast, in the case of static implantation, the hole must be made in the distal part of the slot (through the window on the guide knob you can read “ST” written on the aiming arm).

• **8**

Insert a MI Ø3.6mm Rail drill guide for Rail screws (red ring) (S5811) into the MI Rail guide (S5211) and push it in contact with the plate until you feel the tip rest on the countersink of the slot in the plate. Drill the hole for the Ø4.8mm Rail screw using the Ø3.6mm drill bit (S5911).



• 9

To measure the length of the screw to be implanted, insert the MI depth meter shaft (S5302) into the drill bit guide, engage the bone at the exit of the hole, place the MI depth meter on the knob of the drill bit guide (with the tapered part facing the knob) and with the groove in contact with the depth meter rod, read the measurement for the screw by referencing the notch marked on the rod.

• 10

After removing the MI Ø4.0mm locking drill guide (S5801) from the aiming guide, insert the Ø4.8mm self-locking screw through the aiming guide and tighten it using the screwdriver (S5401HL).

• 11

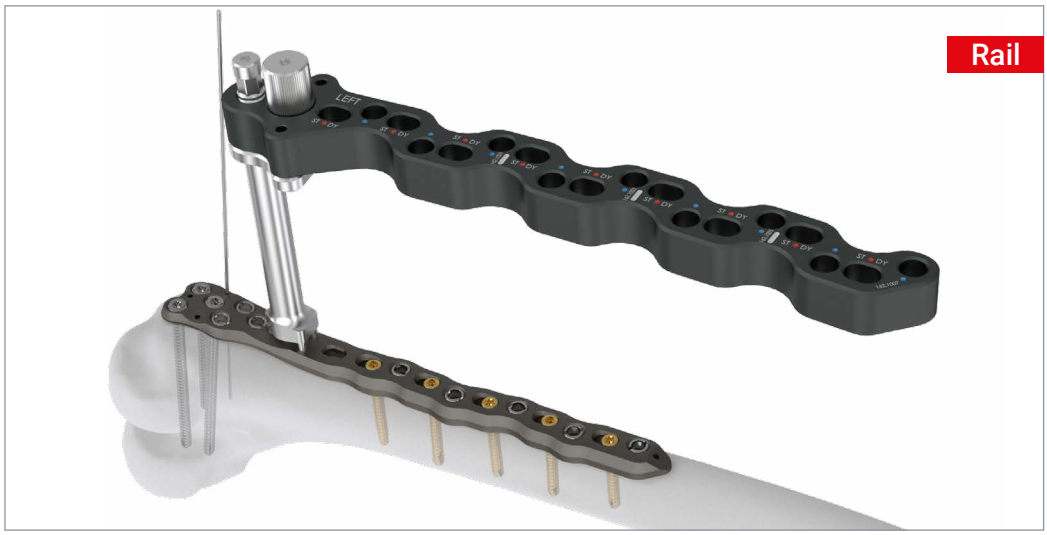
Implant the remaining diaphyseal Ø4.8mm self-locking screws following steps 5 Locking, 6 Locking, 9, 10.

• 12

After removing the MI Ø3.6mm Rail drill guide (S5811) from the guide, insert the Ø4.8mm Rail screw through the guide and tighten it using the screwdriver (S5401HL) until you feel contact with the plate.

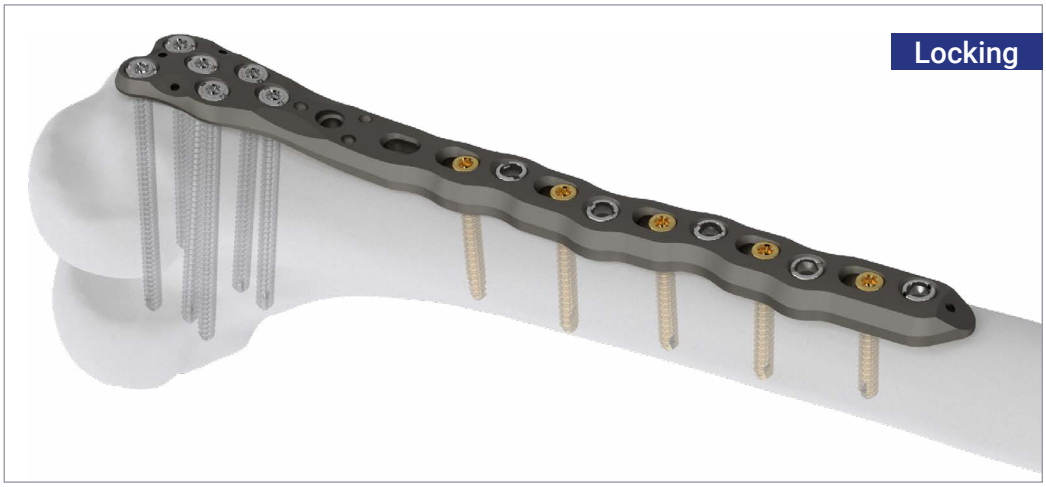
• 13

Implant the remaining diaphyseal Ø4.8mm Rail screws following steps 7 Dynamic Rail, 8 Rail, 9, 12 Rail.



• 14

Remove the stabilization wire and all guides from the aiming arm and remove the MI inserter assembly from the plate by unscrewing the MI handle/plate connecting screw (S5631) using the MI assembly bar (S5641) or screwdriver (S540HL). Complete the implantation with the three remaining proximal epiphyseal screws following steps 2-9.



Ordering informations.

CE 0546

			Epiphysis holes		Diaphysis holes	
Ref.	**Description**	**L. mm**	**Locked**	**Free**	**Locked**	**Free**
162.1001	DF Rail Distal Femur Plate (L) Short	160	6	0	3	4
162.1002	DF Rail Distal Femur Plate (R) Short	160	6	0	3	4
162.1003	DF Rail Distal Femur Plate (L) Medium	210	6	0	5	6
162.1004	DF Rail Distal Femur Plate (R) Medium	210	6	0	5	6
162.1005	DF Rail Distal Femur Plate (L) Long	260	6	0	7	8
162.1006	DF Rail Distal Femur Plate (R) Long	260	6	0	7	8
162.1007	DF Rail Distal Femur Plate (L) Long Plus	310	6	0	9	10
162.1008	DF Rail Distal Femur Plate (R) Long Plus	310	6	0	9	10
162.1009	DF Rail Distal Femur Plate (L) Extra-Long	360	6	0	11	12
162.1010	DF Rail Distal Femur Plate (R) Extra-Long	360	6	0	11	12
162.1011	DF Rail Distal Femur Plate (L) Extra-Long Plus	410	6	0	13	14
162.1012	DF Rail Distal Femur Plate (R) Extra-Long Plus	410	6	0	13	14

32.3104	Conical Cerclage Eyelet Ø4.8mm
32.3105	Threaded Conical Cerclage Eyelet Ø4.8mm
32.3106	Cerclage Eyelet for Rail Slot Ø4.8mm

Material:
Plates | Titanium Ti6Al4V - ISO 5832-3

Autolocking screws

/ SCREW | ■ Ø4.8MM

Ref.	L. mm
101.4810	10
101.4812	12
101.4814	14
101.4816	16
101.4818	18
101.4820	20
101.4822	22
101.4824	24
101.4826	26
101.4828	28
101.4830	30
101.4832	32
101.4834	34
101.4836	36
101.4838	38
101.4840	40
101.4842	42
101.4844	44
101.4846	46
101.4848	48
101.4850	50
101.4855	55
101.4860	60
101.4865	65
101.4870	70
101.4875	75
101.4880	80
101.4885	85
101.4890	90
101.4895	95
101.4896	100
101.4897	105
101.4898	110

Ti6Al4V - ISO 5832-3

Cortical screws

/ SCREW | ■ Ø4.8MM

Ref.	L. mm
102.4812	12
102.4814	14
102.4816	16
102.4818	18
102.4820	20
102.4822	22
102.4824	24
102.4826	26
102.4828	28
102.4830	30
102.4832	32
102.4834	34
102.4836	36
102.4838	38
102.4840	40
102.4842	42
102.4844	44
102.4846	46
102.4848	48
102.4850	50
102.4855	55
102.4860	60
102.4865	65
102.4870	70

Ti6Al4V - ISO 5832-3

Rail screws

/ SCREW | Ø4.8MM

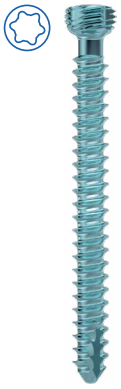
Ref.	L. mm
104.4820	20
104.4822	22
104.4824	24
104.4826	26
104.4828	28
104.4830	30
104.4832	32
104.4834	34
104.4836	36
104.4838	38
104.4840	40
104.4842	42
104.4844	44
104.4846	46
104.4848	48
104.4850	50
104.4852	52
104.4854	54
104.4856	56
104.4858	58
104.4860	60

Ti6Al4V - ISO 5832-3

MultiAx screws

/ SCREW | Ø4.8MM

Ref.	L. mm
103.4814	14
103.4816	16
103.4818	18
103.4820	20
103.4822	22
103.4824	24
103.4826	26
103.4828	28
103.4830	30
103.4832	32
103.4834	34
103.4836	36
103.4838	38
103.4840	40
103.4842	42
103.4844	44
103.4846	46
103.4848	48
103.4850	50
103.4855	55
103.4860	60
103.4865	65
103.4870	70
103.4875	75
103.4880	80
103.4885	85
103.4890	90
103.4895	95
103.4896	100
103.4897	105



Ti6Al4V - ISO 5832-3

Femur

Complete instruments set

CE 0051

REF. S503 - Femur Instruments Case - 1 pc

REF. S515 - Ø4.0mm Drill Guide for Rail Screws - 1 pc

REF. S516 - Ø4.0mm Drill Guide for Cortical/MultiAx Screws - 1 pc

REF. S52 - Ø4.0mm Drill Bit, 200mm - 1 pc

REF. S520 - Ø4.0mm Drill Bit, 160mm - 1 pc

REF. S53 - Depth Meter - 1 pc

REF. S534 - K-Wire Ø2.0mm x 200mm - 2 pcs

REF. S540HL - HL20 Hexalobular Screwdriver - 1 pc

REF. S554 - Conical Bushing Disassembler - 1 pc

REF. SET FEMUR - Complete instruments set

REF. S51 - Ø4.0mm Conical Drill Guide - 1 pc

REF. S514 - Ø4.0mm Conical Graduated Drill Guide - 1 pc

REF. S518 - Ø1.5mm K-Wire Sleeve - 1 pc

REF. S56HL - Quick Coupling HL20 Hexalobular Shaft - 1 pc

Distal Femur MI

Complete instruments set

CE 0051

REF. S504 - DF MI Instruments Case - 1 pc

REF. S5201 - MI Aiming Guide - 2 pcs

REF. S5211 - MI Rail Guide - 2 pcs

REF. S5301 - MI Depth Meter - 1 pc

REF. S5302 - MI Depth Meter Shaft - 1 pc

REF. S5351 - MI Stabilizing Wire - 2 pcs
REF. S5352 - MI Stabilizing Wire Stop - 2 pcs

REF. S5401HL - MI HL20 Hexalobular Screwdriver - 1 pc

REF. S5611 - MI Insertion Handle - 1 pc

REF. S5621 - MI Handle/Arm Connecting Screw - 1 pc

REF. S5631 - MI Handle/Plate Connecting Screw - 1 pc

REF. S5641 - MI Assembly Bar - 1 pc

REF. S5901 - MI Ø4.0mm Drill Bit, 300mm - 1 pc

REF. S5911 - MI Ø3.6mm Drill Bit, 300mm - 1 pc

REF. S5601 - MI Aiming Arm (L) - 1 pc

REF. S5602 - MI Aiming Arm (R) - 1 pc

REF. S5501 - MI Trocar - 2 pcs

REF. S5502 - MI Trocar Handle - 1 pc

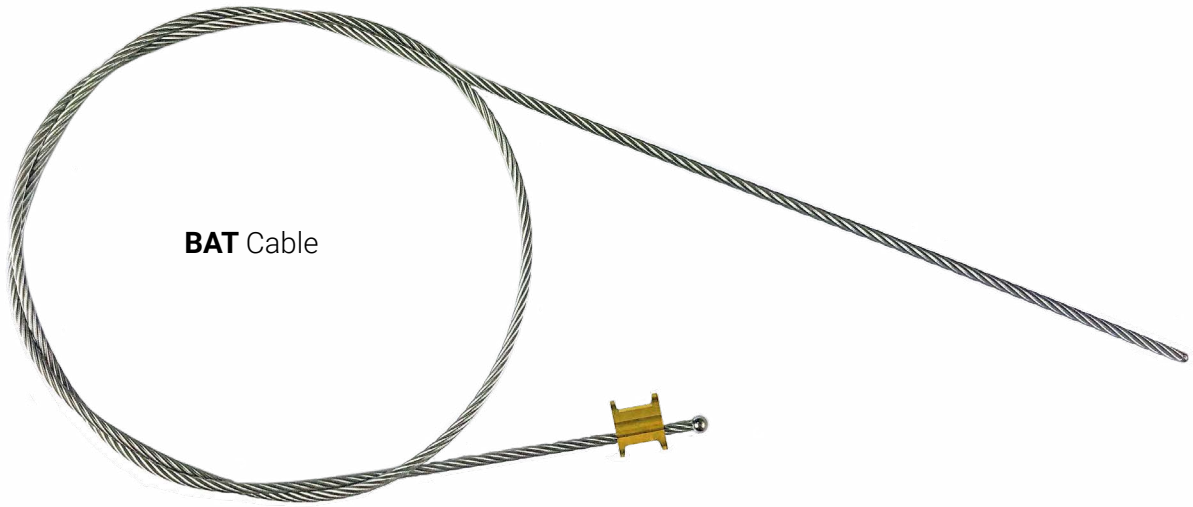
REF. S5801 - MI Ø4.0mm Locking Drill Guide - 2 pcs

REF. S5811 - MI Ø4.0mm Rail Drill Guide - 2 pcs

REF. SET DF MI - Distal Femur MI Complete instruments set

BATCerclage System

/ BATCABLE



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