

Large Fragment System

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Note:

The surgery instructions outlined below reflect the surgical procedure usually chosen by the clinical consultant. However, each surgeon must decide individually which course of action offers the best chance of success in the individual case.

► Introduction

Indication

(Locking) Compression Plate 4.5 narrow:	As neutralization, buttress or tension band plate for tibia, radius and ulna
(Locking) Compression Plate 4.5 broad:	As neutralization, buttress or tension band plate for femoral or humeral shaft fractures
Semi-Tubular Plate 4.5:	* As a tension band plate for open-book fractures * Additional plate for comminuted fractures at the metaphyseal part of long bones
(Locking) T-plate 4.5; L-Buttress plates:	As a buttress plate on medial tibial plateau
Locking Proximal Tibia Plate 4.5:	For the tibia in case of: * proximal shaft fractures * metaphyseal fractures * intra-articular fractures * periprosthetic fractures
Locking Distal Femoral Plate 4.5:	For the femur in case of: * distal femoral shaft fractures * supracondylar fractures * intra-articular fractures * periprosthetic fractures
Malleolar Screw:	Fixation of fractures of the medial or lateral malleolus
Washer:	Prevent the head of a screw splitting the cortex and sinking into the bone

4.5 mm Cortical



4.5 mm Cortical

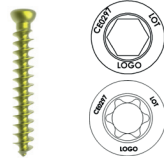


5.0 mm Cortical, locking

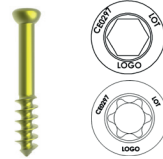


Thread diameter	4.5 mm	4.5 mm	5.0 mm
Head diameter	8.0 mm	8.0 mm	7.4 mm
Core diameter	3.0 mm	3.0 mm	4.0 mm
Pitch	1.75 mm	1.75 mm	1.4 mm
Tap	non and self-tapping	self-tapping	self-tapping
Drive	Hex 3.5 mm	T25	T25
Material	Stainless Steel / Titanium	Titanium	Titanium

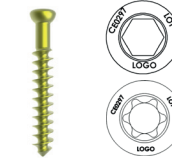
6.5 mm Cancellous, fully threaded



6.5 mm Cancellous, short threaded, 16 mm

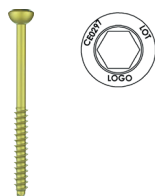


6.5 mm Cancellous, short threaded, 32 mm

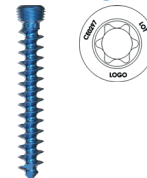


Thread diameter	6.5 mm	6.5 mm	6.5 mm
Head diameter	8.0 mm	8.0 mm	8.0 mm
Core diameter	3.0 mm	3.0 mm	3.0 mm
Pitch	2.75 mm	2.75 mm	2.75 mm
Tap	not self-tapping	not self-tapping	not self-tapping
Drive	Hex 3.5 mm / T25	Hex 3.5 mm / T25	Hex 3.5 mm / T25
Material	Stainless Steel / Titanium	Stainless Steel / Titanium	Stainless Steel / Titanium

4.5 mm Malleolar Screw



6.5 mm, Cancellous, fully threaded, locking



Thread diameter	4.5 mm	6.5 mm
Head diameter	8.0 mm	7.5 mm
Core diameter	3.0 mm	4.0 mm
Pitch	1.75 mm	2.75 mm
Tap	non self-tapping, trocar tip	self-tapping
Drive	Hex 3.5 mm	T25
Material	Stainless Steel / Titanium	Titanium

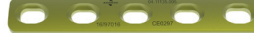
**4.5
Compression
Plate,
narrow**



**4.5
Compression
Plate,
broad**



**4.5
Compression
Plate,
narrow,
undercut**



**4.5
Compression
Plate,
broad,
undercut**



Plate thickness	4.0 mm	4.8 mm	4.2 mm	5.2 mm
Plate width	12.0 mm	16.0 mm	13,5 mm	17.5 mm
Hole distance	16.0 mm	16.0 mm	18.0 mm	18.0 mm
Material	Stainless Steel	Stainless Steel	Titanium	Titanium

**4.5
Reconstruction
Plate**



**4.5
T-Plate**



**4.5
T-Buttress
Plate**



**4.5
L-Buttress
Plate**



**4.5
Semi-Tubular
Plate**



Plate thickness	2.8 mm	2.0 mm	2.0 mm	2.0 mm	1.0 / 1.5 mm
Plate width	12.0 mm	33.5 / 17.0 mm	33.5 / 17.0 mm	33.5 / 16.5 mm	12.0 mm
Hole distance	16.0 mm	16.0 mm	16.0 mm	16.0 mm	16.0 mm
Material	Stainless Steel/Titanium	Stainless Steel/Titanium	Stainless Steel/Titanium	Stainless Steel/Titanium	Stainless Steel/Titanium

**4.5 / 5.0
locking
Proximal
Tibia Plate**



**4.5 / 5.0
locking
Distal
Femoral Plate**



**4.5 / 5.0
locking
Compression
Plate,
narrow,
undercut**



**4.5 / 5.0
locking
Compression
Plate,
broad,
undercut**



Plate thickness	3.6 / 5.0 mm	4.7 / 5.7 mm	4.4 mm	5.2 mm
Plate width	16.0 mm	16.0 mm	14.0 mm	17.5 mm
Hole distance	20.0 mm	20.0 mm	18.0 mm	18.0 mm
Material	Titanium	Titanium	Titanium	Titanium

**4.5 / 5.0
locking
T-Plate**



**4.5 / 5.0
locking
T-Buttress
Plate**



**4.5 / 5.0
locking
L-Buttress
Plate**



Plate thickness	2.5 mm	2.5 mm	2.5 mm
Plate width	36.0 / 17.3 mm	37.0 / 17.3 mm	35.0 / 16.4 mm
Hole distance	16.0 mm	16.0 mm	16.0 mm
Material	Titanium	Titanium	Titanium

► Surgical Technique

Plate Fixation

Preparation

The techniques described below are applicable to the Marquardt Medizintechnik Large Fragment Plate System. A locking 4.5 / 5.0 compression plate was selected as an example, because it can support cortical and locking cortical screws.

1. Plate Selection

- The plates are available in various lengths and numbers of holes.
- After performing the preoperative radiographic assessment, determine the appropriate plate length.



2. Reposition and plate fixation

Instruments

REF 04.20010.032

Drill Bit Ø 3.2 mm

REF 04.20060.045

Double Drill Guide 4.5 / 3.2

- The bone is repositioned closed or open.
- During repositioning, care must be taken to reconstruct the correct anatomical position in terms of length and axes.
- The surgeon decides whether to use cortical screws, cancellous bone screws, locking cortical screws, or a combination of the above screws.
- In a combination, the plate is first fixed to the bone with a cortical screw.
- The screw hole is predrilled with the drill bit and the double drill guide.

Instruments

REF 04.20010.032 *Drill Bit Ø 3.2 mm*
REF 04.20060.090 *Drill Guide 3.2*

- Alternatively, the drill guide 3.2 can be used when using locking plates.
- The drill guide 3.2 is screwed into the locking plate hole.
- The screw hole is then predrilled with the drill bit.



Instruments

REF 04.20100.210 *Length Determination Instrument,
for Screws up to 110 mm*

- The length is measured with the aid of the length determination instrument.
- The hook is hooked into the opposite cortex and the required screw length is read from the scale.
- Care should be taken to ensure that the screws extend through both cortical layers to achieve bicortical fixation.



Instruments

REF 04.20040.040 *Screwdriver, T25*

- A screw of measured length is inserted with the screwdriver.
- The length and position of the screw is checked under radiological control and corrections are made if necessary.



Large Fragment System



Instruments

REF 04.20020.145

Tap for Cancellous Bone Screws

REF 04.20040.040

Screwdriver, T25

REF 03.20050.035

T-Handle with AO Coupling

- If a cancellous bone screw is used, the screw hole must first be predrilled as described above.
 - Then, depending on the bone density, the thread can be pre-cut with a tap.
 - The selected screw is screwed in with the screwdriver.
-
- After all plate holes to be filled have been fixed with screws, a final radiological check is performed to verify the plate position, the anatomical reposition of the fracture and the lengths of the screws.

► Product Information

Implants

Compression Plate 4.5, narrow



Article Number Stainless Steel	Length	Holes
04.10124.002	39 mm	2
04.10124.003	55 mm	3
04.10124.004	71 mm	4
04.10124.005	87 mm	5
04.10124.006	103 mm	6
04.10124.007	119 mm	7
04.10124.008	135 mm	8
04.10124.009	151 mm	9
04.10124.010	167 mm	10
04.10124.011	183 mm	11
04.10124.012	199 mm	12
04.10124.013	215 mm	13
04.10124.014	231 mm	14
04.10124.015	247 mm	15
04.10124.016	263 mm	16
04.10124.018	295 mm	18

Compression Plate 4.5, broad



Article Number Stainless Steel	Length	Holes
04.10165.005	87 mm	5
04.10165.006	103 mm	6
04.10165.007	119 mm	7
04.10165.008	135 mm	8
04.10165.009	151 mm	9
04.10165.010	167 mm	10
04.10165.011	183 mm	11
04.10165.012	199 mm	12
04.10165.013	215 mm	13
04.10165.014	231 mm	14
04.10165.015	247 mm	15
04.10165.016	263 mm	16
04.10165.018	295 mm	18
04.10165.020	327 mm	20
04.10165.022	359 mm	22
04.10165.024	391 mm	24

Article Number Titanium	Length	Holes
04.11135.002	34 mm	2
04.11135.003	52 mm	3
04.11135.004	70 mm	4
04.11135.005	88 mm	5
04.11135.006	106 mm	6
04.11135.007	124 mm	7
04.11135.008	142 mm	8
04.11135.009	160 mm	9
04.11135.010	178 mm	10
04.11135.011	196 mm	11
04.11135.012	214 mm	12
04.11135.013	232 mm	13
04.11135.014	250 mm	14
04.11135.015	268 mm	15
04.11135.016	286 mm	16

Compression Plate 4.5, narrow, undercut



Article Number Titanium	Length	Holes
04.11170.006	106 mm	6
04.11170.007	124 mm	7
04.11170.008	142 mm	8
04.11170.009	160 mm	9
04.11170.010	178 mm	10
04.11170.011	196 mm	11
04.11170.012	214 mm	12
04.11170.013	232 mm	13
04.11170.014	250 mm	14
04.11170.015	268 mm	15
04.11170.016	286 mm	16
04.11170.017	304 mm	17
04.11170.018	322 mm	18

Compression Plate 4.5, broad, undercut



Large Fragment System

Semi-Tubular Plate 4.5



Article Number Stainless Steel	Article Number Titanium	Length	Holes
04.10120.002	04.11120.002	39 mm	2
04.10120.003	04.11120.003	55 mm	3
04.10120.004	04.11120.004	71 mm	4
04.10120.005	04.11120.005	87 mm	5
04.10120.006	04.11120.006	103 mm	6
04.10120.007	04.11120.007	119 mm	7
04.10120.008	04.11120.008	135 mm	8
04.10120.009	04.11120.009	151 mm	9
04.10120.010	04.11120.010	167 mm	10
04.10120.011	04.11120.011	183 mm	11
04.10120.012	04.11120.012	199 mm	12

Reconstruction Plate 4.5



Article Number Stainless Steel	Article Number Titanium	Length	Holes
06.10123.003	06.11123.003	45 mm	3
06.10123.004	06.11123.004	61 mm	4
06.10123.005	06.11123.005	77 mm	5
06.10123.006	06.11123.006	93 mm	6
06.10123.007	06.11123.007	109 mm	7
06.10123.008	06.11123.008	125 mm	8
06.10123.009	06.11123.009	141 mm	9
06.10123.010	06.11123.010	157 mm	10
06.10123.011	06.11123.011	173 mm	11
06.10123.012	06.11123.012	189 mm	12
06.10123.013	06.11123.013	205 mm	13
06.10123.014	06.11123.014	221 mm	14
06.10123.015	06.11123.015	237 mm	15
06.10123.016	06.11123.016	253 mm	16

T-Platte 4.5



Article Number Stainless Steel	Article Number Titanium	Length	Holes
04.10171.003	04.11171.003	68 mm	3
04.10171.004	04.11171.004	84 mm	4
04.10171.005	04.11171.005	100 mm	5
04.10171.006	04.11171.006	116 mm	6
04.10171.007	04.11171.007	132 mm	7
04.10171.008	04.11171.008	148 mm	8
04.10171.009	04.11171.009	164 mm	9
04.10171.010	04.11171.010	180 mm	10
04.10171.011	04.11171.011	196 mm	11
04.10171.012	04.11171.012	212 mm	12

Article Number Stainless Steel	Article Number Titanium	Length	Holes
04.10172.004	04.11172.004	82 mm	4
04.10172.005	04.11172.005	98 mm	5
04.10172.006	04.11172.006	114 mm	6
04.10172.007	04.11172.007	130 mm	7
04.10172.008	04.11172.008	146 mm	8
04.10172.009	04.11172.009	162 mm	9
04.10172.010	04.11172.010	178 mm	10

T-Buttress Plate 4.5



Article Number Stainless Steel	Article Number Titanium	Length	Holes	Orientation
04.10173.003	04.11173.003	72 mm	3	right
04.10173.004	04.11173.004	88 mm	4	right
04.10173.005	04.11173.005	104 mm	5	right
04.10173.006	04.11173.006	120 mm	6	right
04.10173.007	04.11173.007	136 mm	7	right
04.10173.008	04.11173.008	152 mm	8	right
04.10173.009	04.11173.009	168 mm	9	right
04.10173.011	04.11173.011	200 mm	11	right
04.10174.003	04.11174.003	72 mm	3	left
04.10174.004	04.11174.004	88 mm	4	left
04.10174.005	04.11174.005	104 mm	5	left
04.10174.006	04.11174.006	120 mm	6	left
04.10174.007	04.11174.007	136 mm	7	left
04.10174.008	04.11174.008	152 mm	8	left
04.10174.009	04.11174.009	168 mm	9	left
04.10174.011	04.11174.011	200 mm	11	left

L-Buttress Plate 4.5



Large Fragment System

Implants (Locking Plate System)

Locking Proximal Tibia Plate 4.5 / 5.0



Article Number Titanium	Length	Holes	Orientation
04.15310.005	140 mm	5	right
04.15310.007	180 mm	7	right
04.15310.009	220 mm	9	right
04.15310.011	260 mm	11	right
04.15310.013	300 mm	13	right
04.15311.005	140 mm	5	left
04.15311.007	180 mm	7	left
04.15311.009	220 mm	9	left
04.15311.011	260 mm	11	left
04.15311.013	300 mm	13	left

Locking Distal Femoral Plate 4.5 / 5.0



Article Number Titanium	Length	Holes	Orientation
04.15320.005	165 mm	5	right
04.15320.007	205 mm	7	right
04.15320.009	245 mm	9	right
04.15320.011	285 mm	11	right
04.15320.013	324 mm	13	right
04.15321.005	165 mm	5	left
04.15321.007	205 mm	7	left
04.15321.009	245 mm	9	left
04.15321.011	285 mm	11	left
04.15321.013	324 mm	13	left

Locking Compression Plate 4.5 / 5.0, narrow, undercut



Article Number Titanium	Length	Holes
04.15135.002	35 mm	2
04.15135.003	53 mm	3
04.15135.004	71 mm	4
04.15135.005	89 mm	5
04.15135.006	107 mm	6
04.15135.007	125 mm	7
04.15135.008	143 mm	8
04.15135.009	161 mm	9
04.15135.010	179 mm	10
04.15135.011	197 mm	11
04.15135.012	215 mm	12
04.15135.013	233 mm	13
04.15135.014	251 mm	14
04.15135.015	269 mm	15
04.15135.016	287 mm	16

Locking Compression Plate 4.5 / 5.0, broad, undercut



Article Number Titanium	Length	Holes
04.15170.006	106 mm	6
04.15170.007	124 mm	7
04.15170.008	142 mm	8
04.15170.009	160 mm	9
04.15170.010	178 mm	10
04.15170.011	196 mm	11
04.15170.012	214 mm	12
04.15170.013	232 mm	13
04.15170.014	250 mm	14
04.15170.015	268 mm	15
04.15170.016	286 mm	16
04.15170.017	304 mm	17
04.15170.018	322 mm	18

Locking T-Plate 4.5 / 5.0



Article Number Titanium	Length	Holes
04.15171.003	68 mm	3
04.15171.004	84 mm	4
04.15171.005	100 mm	5
04.15171.006	116 mm	6
04.15171.007	132 mm	7
04.15171.008	148 mm	8
04.15171.010	180 mm	10
04.15171.012	212 mm	12

Locking T-Buttress Plate 4.5 / 5.0



Article Number Titanium	Length	Holes
04.15172.004	81 mm	4
04.15172.005	97 mm	5
04.15172.006	113 mm	6
04.15172.008	145 mm	8
04.15172.010	177 mm	10

Locking L-Buttress Plate 4.5 / 5.0



Article Number Titanium	Length	Holes	Orientation
04.15173.003	70 mm	3	right
04.15173.004	86 mm	4	right
04.15173.005	102 mm	5	right
04.15173.006	118 mm	6	right
04.15173.008	150 mm	8	right
04.15174.003	70 mm	3	left
04.15174.004	86 mm	4	left
04.15174.005	102 mm	5	left
04.15174.006	118 mm	6	left
04.15174.008	150 mm	8	left

Large Fragment System

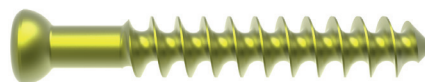
Cortical Screw Ø 4.5 mm



Article Number Stainless Steel	Article Number Titanium	Article Number Stainless Steel, self-tapping	Article Number Titanium, self-tapping	Length
04.00845.014	04.01845.014	04.02845.014	04.03845.014	14 mm
04.00845.016	04.01845.016	04.02845.016	04.03845.016	16 mm
04.00845.018	04.01845.018	04.02845.018	04.03845.018	18 mm
04.00845.020	04.01845.020	04.02845.020	04.03845.020	20 mm
04.00845.022	04.01845.022	04.02845.022	04.03845.022	22 mm
04.00845.024	04.01845.024	04.02845.024	04.03845.024	24 mm
04.00845.026	04.01845.026	04.02845.026	04.03845.026	26 mm
04.00845.028	04.01845.028	04.02845.028	04.03845.028	28 mm
04.00845.030	04.01845.030	04.02845.030	04.03845.030	30 mm
04.00845.032	04.01845.032	04.02845.032	04.03845.032	32 mm
04.00845.034	04.01845.034	04.02845.034	04.03845.034	34 mm
04.00845.036	04.01845.036	04.02845.036	04.03845.036	36 mm
04.00845.038	04.01845.038	04.02845.038	04.03845.038	38 mm
04.00845.040	04.01845.040	04.02845.040	04.03845.040	40 mm
04.00845.042	04.01845.042	04.02845.042	04.03845.042	42 mm
04.00845.044	04.01845.044	04.02845.044	04.03845.044	44 mm
04.00845.046	04.01845.046	04.02845.046	04.03845.046	46 mm
04.00845.048	04.01845.048	04.02845.048	04.03845.048	48 mm
04.00845.050	04.01845.050	04.02845.050	04.03845.050	50 mm
04.00845.052	04.01845.052	04.02845.052	04.03845.052	52 mm
04.00845.054	04.01845.054	04.02845.054	04.03845.054	54 mm
04.00845.056	04.01845.056	04.02845.056	04.03845.056	56 mm
04.00845.058	04.01845.058	04.02845.058	04.03845.058	58 mm
04.00845.060	04.01845.060	04.02845.060	04.03845.060	60 mm
04.00845.062	04.01845.062	04.02845.062	04.03845.062	62 mm
04.00845.064	04.01845.064	04.02845.064	04.03845.064	64 mm
04.00845.066	04.01845.066	04.02845.066	04.03845.066	66 mm
04.00845.068	04.01845.068	04.02845.068	04.03845.068	68 mm
04.00845.070	04.01845.070	04.02845.070	04.03845.070	70 mm
04.00845.072	04.01845.072	04.02845.072	04.03845.072	72 mm
04.00845.074	04.01845.074	04.02845.074	04.03845.074	74 mm
04.00845.076	04.01845.076	04.02845.076	04.03845.076	76 mm
04.00845.078	04.01845.078	04.02845.078	04.03845.078	78 mm
04.00845.080	04.01845.080	04.02845.080	04.03845.080	80 mm
04.00845.085	04.01845.085	04.02845.085	04.03845.085	85 mm
04.00845.090	04.01845.090	04.02845.090	04.03845.090	90 mm
04.00845.095	04.01845.095	04.02845.095	04.03845.095	95 mm
04.00845.100	04.01845.100	04.02845.100	04.03845.100	100 mm
04.00845.105	04.01845.105	04.02845.105	04.03845.105	105 mm
04.00845.110	04.01845.110	04.02845.110	04.03845.110	110 mm
04.00845.115	04.01845.115	04.02845.115	04.03845.115	115 mm
04.00845.120	04.01845.120	04.02845.120	04.03845.120	120 mm
04.00845.125	04.01845.125	04.02845.125	04.03845.125	125 mm
04.00845.130	04.01845.130	04.02845.130	04.03845.130	130 mm
04.00845.135	04.01845.135	04.02845.135	04.03845.135	135 mm
04.00845.140	04.01845.140	04.02845.140	04.03845.140	140 mm

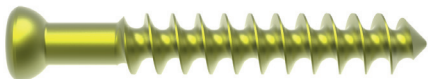
Article Number Stainless Steel	Article Number Titanium	Length
04.00816.025	04.01816.025	25 mm
04.00816.030	04.01816.030	30 mm
04.00816.035	04.01816.035	35 mm
04.00816.040	04.01816.040	40 mm
04.00816.045	04.01816.045	45 mm
04.00816.050	04.01816.050	50 mm
04.00816.055	04.01816.055	55 mm
04.00816.060	04.01816.060	60 mm
04.00816.065	04.01816.065	65 mm
04.00816.070	04.01816.070	70 mm
04.00816.075	04.01816.075	75 mm
04.00816.080	04.01816.080	80 mm
04.00816.085	04.01816.085	85 mm
04.00816.090	04.01816.090	90 mm
04.00816.095	04.01816.095	95 mm
04.00816.100	04.01816.100	100 mm
04.00816.105	04.01816.105	105 mm
04.00816.110	04.01816.110	110 mm
04.00816.115	04.01816.115	115 mm
04.00816.120	04.01816.120	120 mm
04.00816.125	04.01816.125	125 mm
04.00816.130	04.01816.130	130 mm
04.00816.135	04.01816.135	135 mm
04.00816.140	04.01816.140	140 mm

**Cancellous Bone Screw Ø 6.5 mm,
16 mm thread**



Large Fragment System

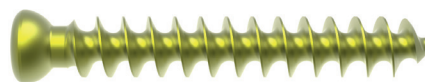
Cancellous Bone Screw Ø 6.5 mm, 32 mm thread



Article Number Stainless Steel	Article Number Titanium	Length
04.00832.040	04.01832.040	40 mm
04.00832.045	04.01832.045	45 mm
04.00832.050	04.01832.050	50 mm
04.00832.055	04.01832.055	55 mm
04.00832.060	04.01832.060	60 mm
04.00832.065	04.01832.065	65 mm
04.00832.070	04.01832.070	70 mm
04.00832.075	04.01832.075	75 mm
04.00832.080	04.01832.080	80 mm
04.00832.085	04.01832.085	85 mm
04.00832.090	04.01832.090	90 mm
04.00832.095	04.01832.095	95 mm
04.00832.100	04.01832.100	100 mm
04.00832.105	04.01832.105	105 mm
04.00832.110	04.01832.110	110 mm
04.00832.115	04.01832.115	115 mm
04.00832.120	04.01832.120	120 mm
04.00832.125	04.01832.125	125 mm
04.00832.130	04.01832.130	130 mm
04.00832.135	04.01832.135	135 mm
04.00832.140	04.01832.140	140 mm
04.00832.145	04.01832.145	145 mm
04.00832.150	04.01832.150	150 mm

Article Number Stainless Steel	Article Number Titanium	Length
04.00800.020	04.01800.020	20 mm
04.00800.025	04.01800.025	25 mm
04.00800.030	04.01800.030	30 mm
04.00800.035	04.01800.035	35 mm
04.00800.040	04.01800.040	40 mm
04.00800.045	04.01800.045	45 mm
04.00800.050	04.01800.050	50 mm
04.00800.055	04.01800.055	55 mm
04.00800.060	04.01800.060	60 mm
04.00800.065	04.01800.065	65 mm
04.00800.070	04.01800.070	70 mm
04.00800.075	04.01800.075	75 mm
04.00800.080	04.01800.080	80 mm
04.00800.085	04.01800.085	85 mm
04.00800.090	04.01800.090	90 mm
04.00800.095	04.01800.095	95 mm
04.00800.100	04.01800.100	100 mm
04.00800.105	04.01800.105	105 mm
04.00800.110	04.01800.110	110 mm
04.00800.115	04.01800.115	115 mm

Cancellous Bone Screw Ø 6.5 mm, fully threaded

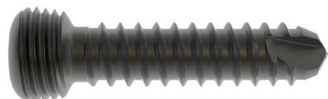


Article Number Stainless Steel	Article Number Titanium	Length
04.00830.020	04.01830.020	20 mm
04.00830.025	04.01830.025	25 mm
04.00830.030	04.01830.030	30 mm
04.00830.035	04.01830.035	35 mm
04.00830.040	04.01830.040	40 mm
04.00830.045	04.01830.045	45 mm
04.00830.050	04.01830.050	50 mm
04.00830.055	04.01830.055	55 mm
04.00830.060	04.01830.060	60 mm
04.00830.065	04.01830.065	65 mm
04.00830.070	04.01830.070	70 mm
04.00830.075	04.01830.075	75 mm
04.00830.080	04.01830.080	80 mm
04.00830.085	04.01830.085	85 mm
04.00830.090	04.01830.090	90 mm

Malleolar Screw Ø 4.5 mm



Locking Cortical Screw Ø 5.0 mm, T25, self-tapping



Article Number Titanium	Length
04.05755.016	16 mm
04.05755.018	18 mm
04.05755.020	20 mm
04.05755.022	22 mm
04.05755.024	24 mm
04.05755.026	26 mm
04.05755.028	28 mm
04.05755.030	30 mm
04.05755.032	32 mm
04.05755.034	34 mm
04.05755.036	36 mm
04.05755.038	38 mm
04.05755.040	40 mm
04.05755.042	42 mm
04.05755.044	44 mm
04.05755.046	46 mm
04.05755.048	48 mm
04.05755.050	50 mm
04.05755.052	52 mm
04.05755.054	54 mm
04.05755.056	56 mm
04.05755.058	58 mm
04.05755.060	60 mm
04.05755.065	65 mm
04.05755.070	70 mm
04.05755.075	75 mm
04.05755.080	80 mm
04.05755.085	85 mm
04.05755.090	90 mm
04.05755.095	95 mm
04.05755.100	100 mm

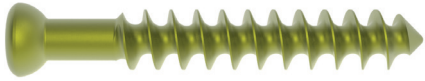
Locking Cancellous Bone Screw Ø 6.5 mm, T25, fully threaded



Article Number Titanium	Length
04.05800.020	20 mm
04.05800.025	25 mm
04.05800.030	30 mm
04.05800.035	35 mm
04.05800.040	40 mm
04.05800.045	45 mm
04.05800.050	50 mm
04.05800.055	55 mm
04.05800.060	60 mm
04.05800.065	65 mm
04.05800.070	70 mm
04.05800.075	75 mm
04.05800.080	80 mm
04.05800.085	85 mm
04.05800.090	90 mm
04.05800.095	95 mm
04.05800.100	100 mm
04.05800.105	105 mm
04.05800.110	110 mm
04.05800.115	115 mm

Large Fragment System

**Cortical Screw Ø 4.5 mm, T25,
self-tapping**



Article Number Titanium	Length
04.03745.014	14 mm
04.03745.016	16 mm
04.03745.018	18 mm
04.03745.020	20 mm
04.03745.022	22 mm
04.03745.024	24 mm
04.03745.026	26 mm
04.03745.028	28 mm
04.03745.030	30 mm
04.03745.032	32 mm
04.03745.034	34 mm
04.03745.036	36 mm
04.03745.038	38 mm
04.03745.040	40 mm
04.03745.042	42 mm
04.03745.044	44 mm
04.03745.046	46 mm
04.03745.048	48 mm
04.03745.050	50 mm
04.03745.052	52 mm
04.03745.054	54 mm
04.03745.056	56 mm
04.03745.058	58 mm
04.03745.060	60 mm
04.03745.062	62 mm
04.03745.064	64 mm
04.03745.066	66 mm
04.03745.068	68 mm
04.03745.070	70 mm
04.03745.075	75 mm
04.03745.080	80 mm
04.03745.085	85 mm
04.03745.090	90 mm
04.03745.095	95 mm
04.03745.100	100 mm
04.03745.105	105 mm
04.03745.110	110 mm
04.03745.115	115 mm
04.03745.120	120 mm

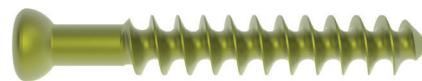
Article Number Titanium	Length
04.03716.025	25 mm
04.03716.030	30 mm
04.03716.035	35 mm
04.03716.040	40 mm
04.03716.045	45 mm
04.03716.050	50 mm
04.03716.055	55 mm
04.03716.060	60 mm
04.03716.065	65 mm
04.03716.070	70 mm
04.03716.075	75 mm
04.03716.080	80 mm
04.03716.085	85 mm
04.03716.090	90 mm
04.03716.095	95 mm
04.03716.100	100 mm

Cancellous Bone Screw Ø 6.5 mm, T25, 16 mm threaded



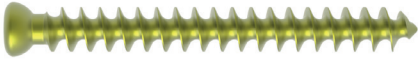
Article Number Titanium	Length
04.03732.040	40 mm
04.03732.045	45 mm
04.03732.050	50 mm
04.03732.055	55 mm
04.03732.060	60 mm
04.03732.065	65 mm
04.03732.070	70 mm
04.03732.075	75 mm
04.03732.080	80 mm
04.03732.085	85 mm
04.03732.090	90 mm
04.03732.095	95 mm
04.03732.100	100 mm

Cancellous Bone Screw Ø 6.5 mm, T25, 32 mm threaded



Large Fragment System

Cancellous Bone Screw Ø 6.5 mm, T25, fully threaded



Article Number Titanium	Length
04.03700.020	20 mm
04.03700.025	25 mm
04.03700.030	30 mm
04.03700.035	35 mm
04.03700.040	40 mm
04.03700.045	45 mm
04.03700.050	50 mm
04.03700.055	55 mm
04.03700.060	60 mm
04.03700.065	65 mm
04.03700.070	70 mm
04.03700.075	75 mm
04.03700.080	80 mm
04.03700.085	85 mm
04.03700.090	90 mm
04.03700.095	95 mm
04.03700.100	100 mm
04.03700.105	105 mm
04.03700.110	110 mm
04.03700.115	115 mm

Washer Ø 13.0 mm, for Screws Ø 4.5 to 7.0 mm

- Outer diameter: 13.0 mm
- Thickness: 1.5 mm



Article Number Stainless Steel	Article Number Titanium
04.90000.130	04.91000.130

Instruments

11.90220.150 Kirschner Wire Ø 2.0mm, threaded tip, L 150mm



04.20010.032 Drill Bit Ø 3.2mm, AO Coupling, L 145/115 mm



04.20010.045 Drill Bit Ø 4.5mm, AO Coupling, L 145/115 mm



04.20010.832 Drill Bit Ø 3.2mm, AO Coupling, L 225/195 mm



04.20010.842 Drill Bit Ø 4.2mm, scaled, AO Coupling, L 225/195 mm



04.20010.015 Coupling Screw for REF 04.20010.010 / 020 / 030 / 040



04.20010.020 Guiding Block for Locking Proximal Tibia Plate, right



04.20010.010 Guiding Block for Locking Proximal Tibia Plate, left



04.20010.040 Guiding Block for Locking Distal Femoral Plate, right



04.20010.030 Guiding Block for Locking Distal Femoral Plate, left



04.20020.045 Tap Ø 4.5mm, AO Coupling, L 125/95 mm



04.20020.065 Tap for Cancellous Bone Screws Ø 6.5mm, scaled, AO Coupling, L 200/150 mm



04.20030.045 Countersink for Cortical Screws Ø 4.5mm, T-Handle



04.20040.035 Screwdriver, hex 3.5mm, L 247/137 mm



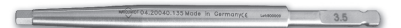
04.20040.040 Screwdriver, T25, L 247/137 mm



04.20040.055 Screwdriver Shaft, T25, AO Coupling, L 100/70 mm



04.20040.135 Screwdriver Shaft, hex 3.5mm, AO Coupling, L 100/70 mm



04.20040.099 Combination Wrench Ø 11mm



03.20050.035 T-Handle with AO Coupling



Large Fragment System

04.20060.045 Double Drill Guide 4.5/3.2



04.20060.065 Double Drill Guide 6.5/3.2



04.20060.080 Drill Guide 4.2 for Locking Plates



04.20060.085 Centering Sleeve for Kirschner Wire
Ø 2.0mm



04.20060.090 Drill Guide 3.2 for Locking Plates



04.20060.145 Drill Sleeve Insert 4.5/3.2, L 80mm



04.20060.245 Drill Guide 4.5/3.2, neutral and load position



04.20060.345 Universal Drill Guide 4.5/3.2,
for neutral and load position



04.20060.545 Drill Guide 3.2, neutral and load position,
for combination hole



04.20100.098 Adaption Screw for Tension Device



04.20100.099 Tension Device, articulated



04.20100.110 Length Determination Instrument,
for Screws up to 110mm



04.20100.210 Length Determination Instrument,
for Locking Screws up to 110mm



04.20110.007 Bending Template for Compression Plate
4.5, 7 holes



04.20110.009 Bending Template for Compression Plate
4.5, 9 holes



04.20110.012 Bending Template for Compression Plate
4.5, 12 holes



02.20120.005 Sharp Hook, L 150mm



04.20120.032 Trocar Ø 3.2mm



04.20120.042 Trocar Ø 4.2mm



02.20120.015 Screw Forceps, self-holding





MRI Safety Information

Non-clinical testing has demonstrated that the plates range from Marquardt Medizintechnik is MR Conditional in accordance with the ASTM F2503 standard definitions. A patient with this device can be safely scanned in an MR system meeting the following conditions:

- Cylindrical-bore
- Horizontal magnetic field (B_0)
- Spatial field gradient lower than or equal to
 - **1.5 T:** 23.45 T/m (2345 G/cm)
 - **3.0 T:** 11.75 T/m (1175 G/cm)
- Radiofrequency (RF) field exposure:
 - RF excitation: Circularly Polarized (CP)
 - RF transmit coil: whole-body transmit coil
 - RF receive coil type: whole-body receive coil
 - Maximum permitted whole-body averaged specific absorption rate (SAR): Normal Operating Mode, 2 W/kg.
 - Scan duration and wait time:
 - 1.5 T:** 2 W/kg whole-body average SAR for **8min and 15s** of continuous RF (a sequence or back-to-back series/scan without breaks) followed by a wait time of **8min and 15s** if this limit is reached.
 - 3.0 T:** 2 W/kg whole-body average SAR for **6min and 19s** of continuous RF (a sequence or back-to-back series/scan without breaks) followed by a wait time of **6min and 19s** if this limit is reached.
- The plates are expected to produce a maximum temperature rise of 8.5 °C at 1.5 T and 6.9 °C at 3 T both after the scanning periods presented above.
- The presence of this implant may produce an image artifact. Some manipulation of scan parameters may be needed to compensate for the artifact. In non-clinical testing, the image artifact caused by the device extends approximately 83 mm from the device edge when imaged with a spin echo pulse sequence and 65 mm with a gradient echo, both at 1.5 T.
- Patients with uncompromised thermoregulation and under uncontrolled conditions or patients with compromised thermoregulation (all persons with impaired systemic or reduced local thermoregulation) and under controlled conditions (a medical doctor or a dedicated trained person can respond instantly to heat induced physiological stress).

Note:

Undergoing an MRI scan, there is a potential risk for patients with a metallic implant. The electromagnetic field created by an MRI scanner can interact with the metallic implant, resulting in displacement of the implant, heating of the tissue near the implant, or other undesirable effects.



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