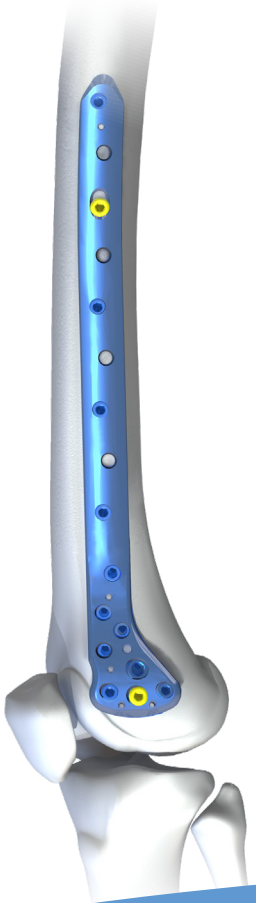
ST/48C

ChM®

7,0 ChM Locked Plating ChLP system

LOCKING PLATES 7.0ChLP

- *IMPLANTS*
- *INSTRUMENT SET 40.5702.700*
- *SURGICAL TECHNIQUE*



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SYMBOLS DESCRIPTION

Ti	Titanium or titanium alloy	H	H length [mm]
Co	Cobalt		Angle
L	Left	88 340	available lengths
R	Right	4-22	Available number of holes
L R	Available versions: left/right	1.8	Thickness [mm]
Len	Length	1:1	Scale 1:1
	Torx drive		Number of threaded holes in the shaft part of the plate
	Torx drive cannulated		Number of locking holes in the plate
	Hexagonal drive	VA	Variable angle
	Hexagonal drive cannulated	C	Cortical
	Cannulated		Cancellous
	Locking	Ster Non Ster	Available in sterile/ non- sterile condition
	Diameter [mm]		Refer to surgical technique

	Caution - pay attention to a special procedure.
	Perform the activity under X-Ray control.
	Information about the next stages of a procedure.
	Proceed to the next stage.
	Return to the specified stage and repeat the activity.
	Before using the product, carefully read the Instructions for Use. It contains, among others, indications, contraindications, side effects, recommendations and warnings related to the use of the product.
	The above description is not a detailed instruction of conduct. The surgeon decides about choosing the operating procedure.

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The manufacturer reserves the right to introduce design changes.

Updated INSTRUCTIONS FOR USE are available at the following website: ifu.chm.eu

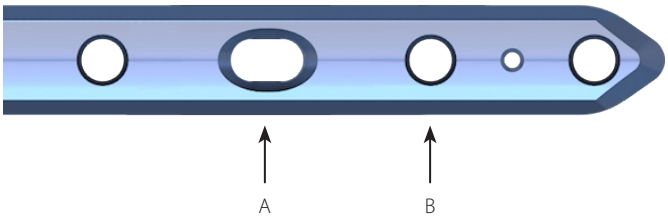
I. INTRODUCTION

The main purpose of surgical treatment of bone fractures is to reconstruct the anatomical bone structure and to restore its function.
Internal stabilization with locking plates enables accurate fracture reduction, stable fixation, blood flow preservation and functional activation of injured limb.

System ChLP consists of titanium plates and screws combining locking screws technique with conventional treatment techniques using plates. This system is the improvement of existing stabilization methods. Locking screws system enables angular fixation using conventional surgical techniques. It is particularly indicated in:

- multifragmental fractures;
- non-unions or malunions;
- osteopenia;
- osteotomy stabilization;
- when applying conventional screws is insufficient or does not bring expected effects.

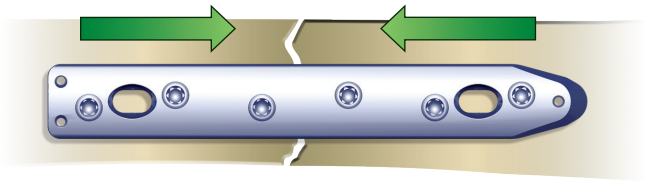
Locking plates are provided with holes A for conventional cortical screws with or without compression and with threaded holes B for locking screws.
Compression holes designed in ChLP System enable compression in both directions.



Plates design allows to perform classical dynamic compression.

Advantages of using locking plates system over conventional methods of fracture treatment using plates:

- enable stable fixation ensuring angular stabilization in fracture site;



- enable compression using conventional cortical and cancellous screws, combination with conventional and locking screws is available;
- reduced bone-plate contact ensures better blood flow of perimplant tissues;
- locking screws enable uni-cortical plate position against the bone;
- plates can be contoured to match the anatomical bone shape that is particularly important in periarticular fractures.

The following instruction does not refer to particular fracture types as the locking plates system includes different plates that are relevant to many different fractures.

ChLP System was divided as follows:

- 4.0ChLP System;
- 4.5ChLP System;
- 5.0ChLP System;
- 7.0ChLP System.

Division is based on the screw head diameter; however, screws with different cortical thread diameter in one system range are available.

Additionally, systems were differentiated with colors as follows:

- 4.0ChLP System – green;
- 4.5ChLP System – gold;
- 5.0ChLP System – brown;
- 7.0ChLP System – blue.

Before product usage, read the Instructions For Use carefully. The IFU is supplied with the product and attached at the end of this document. It includes, among others: the indications, contraindications, adverse effects, warnings and recommendations associated with product usage.

II. PLATE SELECTION AND CONTOURING

Wide size range of locking plates enables proper plate selection.
Locking plate contouring is not recommended due to possiblity of threaded holes damaging.
Bottom surface of the plate does not have to contact with the bone if locking screws are used. There is no necessity of accurate plates contouring. Advanced shaped plates do not require additional bending in most cases.

If the plate bending is necessary, remember to not deform threaded holes excessively. It is essential to ensure that the desired shape of the implant is reached in as few bends as possible because titanium hardness increases and ductility ***(bendability)*** decreases. Excessive bending can lead to postoperative fracture of the plate. Due to potential risk for postoperative implant breakage, extremely acute angles together with small bending radii must be avoided. If Implant damage ***(indentations, elongated screw holes, etc.)*** occur, plate is to be exchanged for new one, more carefully bent one.

If the plate bending is required:
- perform it between locking holes;
- do not bend the plate more than 20° – 25°;
- do not bend the plate back and forth;
- before bending, insert the locking screws in the bending area, that decreases the threaded holes deformation degree.

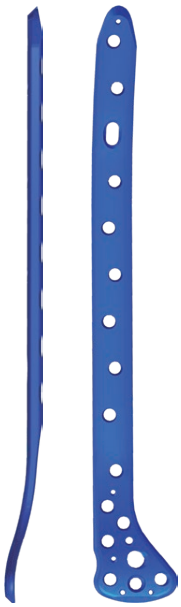
II.1. INDICATIONS

7.0 locking plate system is designed to stabilize the fracture of various long bones such as:
- femoral bone,
- tibial bone

Straight wide plates are mainly used to stabilize the shafts of bone fractures. Shape plates are used for metaphysial bone fractures as well as simple, comminuted, wedge-shaped lateral and medial fractures, condylar fractures and the ones combined with the shaft of a bone.

III. CATALOGUE PAGES

III.1. PLATES



	Ti	Len	L	R
4		138	3.4023.604	3.4024.604
6		180	3.4023.606	3.4024.606
8		221	3.4023.608	3.4024.608
10		263	3.4023.610	3.4024.610

	Ti						
	3.5210.xxx	✓	✓	✓			5.0
	3.5232.xxx	✓	✓		✓		5.4
	3.5216.xxx	✓		✓			5.0
	3.5221.xxx	✓	✓		✓	✓	7.3
	3.5224.xxx	✓			✓	✓	7.3
	3.5228.xxx	✓	✓		✓		6.5
	3.1471.xxx	✓		✓			4.5
	3.5219.008	✓	✓				5.0
	3.1221.070		✓				

Palette for 7.0ChLP plates - 3.4023/3.4024 40.5704.510

Aiming block L [3.4023] 40.5725.100

Aiming block R [3.4024] 40.5725.200

Plate 3.4023.606 trial 43.4023.606

Plate 3.4024.606 trial 43.4024.606

Indications

- Comminuted fractures of the distal part of the femoral bone and fractures extending to the shaft of the femur.
- Supracondylar fractures.
- Articular and extra-articular condylar fractures.
- Non-union or malunions of fractured bone.

Contraindications

Absolute

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

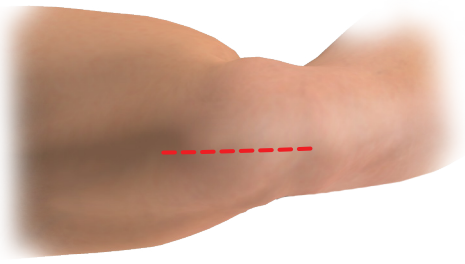
Relative

- Weakened bone ***(by disease, infection or prior implantation)*** making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area or surgical site.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position

Surgical approach

Lateral approach: the lateral incision of about 80 mm in the proximal direction shall begin from Gerdy's tubercle. If necessary, the incision may be lengthened. The incision is recommended for extra-articular fractures and simple articular and metaphysial fractures without displacement.



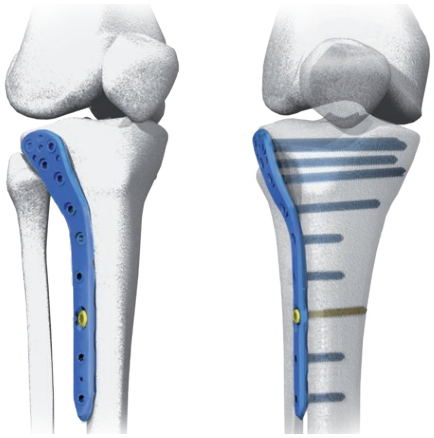
Anterior-lateral approach: perform the parapatellar incision. Perform the arthrotomy as to expose the articulation and reduce the fragments of the fractured bone; pull the patella medially and widen the cut adequately to expose the femoral condyle. The parapatellar incision is recommended for more complex articular comminuted fractures.

Procedure stages

- Reduction of fracture and stabilization of the fracture fragments with Kirschner wires.
- The choice of implants - determining the length and position of the implant.
- Insertion of the plate and its positioning.
- Temporary stabilization of the implant using Kirschner wires.
- Introduction of the screws to the distal parts of the plate.
- Stabilization of the shaft using locking or compression screws.

Len	L	R
4	129	3.4013.604	3.4014.604
5	150	3.4013.605	3.4014.605
6	171	3.4013.606	3.4014.606
8	213	3.4013.608	3.4014.608
4-12	129 - 297		

	Ti					
3.5210.xxx	✓	✓	✓			5.0
3.5232.xxx	✓	✓		✓		5.4
3.5216.xxx	✓		✓			5.0
3.1471.xxx	✓		✓			4.5
3.5219.008	✓	✓				5.0
3.1221.070		✓				



Palette for 7.0ChLP plates - 3.4013/3.4014	40.5704.520	Aiming block L [3.4013]	40.5724.100	Plate 3.4013.605 trial	43.4013.605
		Aiming block R [3.4014]	40.5724.200	Plate 3.4014.605 trial	43.4014.605

Indications

- Articular and extra-articular, metaphysial and epiphysial comminuted fractures of the proximal part of the tibia and fractures extending to the shaft of the tibia.
- Non-union or malunions of fractured bone

Contraindications

Absolute:

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

Relative:

- Weakened bone ***(by disease, infection or prior implantation)*** making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position

Surgical approach

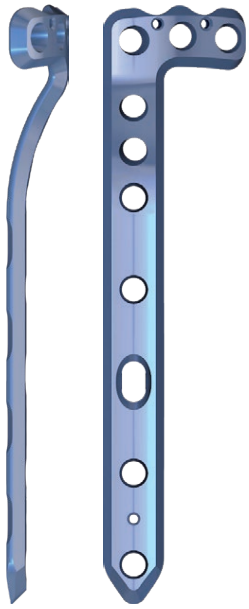
Lateral S incision - recommended for simple articular and extra-articular fractures

Straight anterior-lateral incision - recommended for more complex articular fractures.

Anterior-lateral approach. The incision performed between the tibia and fibula bone should begin approximately 1 cm proximally from Gerdy's tubercle for a desired length of the plate. In the minimally invasive technique, a short cut and additional cuts for the access to the holes of the shaft of the plate should be performed.

Procedure stages

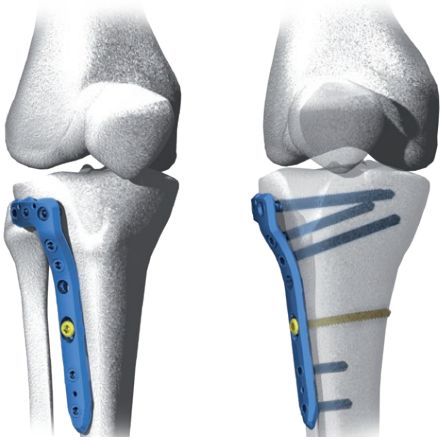
- Reduction of fracture and stabilization of the fracture fragments using Kirschner wires.
- The choice of implants - determining the length and position of the implant.
- Insertion of the plate and its positioning.
- Temporary stabilization of the implant using Kirschner wires.
- Introduction of the screws in the distal parts of the plate.
- Stabilization of the shaft using locking or compression screws.
- Positioning of the plate using the compression screw in the extended hole.
- Making X-Ray film in both A-P and lateral position as to make sure the plate and screws are positioned properly.
- Closing the wound.

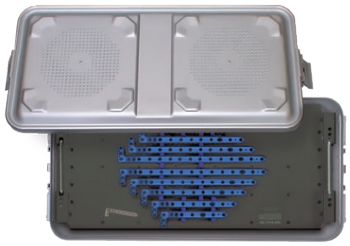


	Ti	
Len	L	R
116	3.4009.604	3.4010.604
158	3.4009.606	3.4010.606
200	3.4009.608	3.4010.608
242	3.4009.610	3.4010.610
116 - 326		

4-14

	Ti					
3.5210.xxx	✓	✓	✓			5.0
3.5232.xxx	✓	✓		✓		5.4
3.5216.xxx	✓		✓			5.0
3.1471.xxx	✓		✓			4.5
3.5219.008	✓	✓				5.0
3.1221.070		✓				





Palette for 7.0ChLP plates - 3.4009/3.4010	40.5704.540

Plate 3.4009.606 trial	43.4009.606
Plate 3.4010.606 trial	43.4010.606

Indications

- Articular and extra-articular, metaphysial and epiphysial comminuted fractures of the proximal part of the tibia and fractures extending to the shaft of the tibia.
- Non-union or malunions of fractured bone

Contraindications

Absolute:

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

Relative:

- Weakened bone ***(by disease, infection or prior implantation)*** making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position

Surgical approach

Lateral S incision - recommended for simple articular and extra-articular fractures

Straight anterior-lateral incision - recommended for more complex articular fractures.

Anterior-lateral approach. The incision performed between the tibia and fibula bone should begin approximately 1 cm proximally from Gerdy's tubercle for a desired length of the plate. In the minimally invasive technique, a short cut and additional cuts for the access to the holes of the shaft of the plate should be performed.

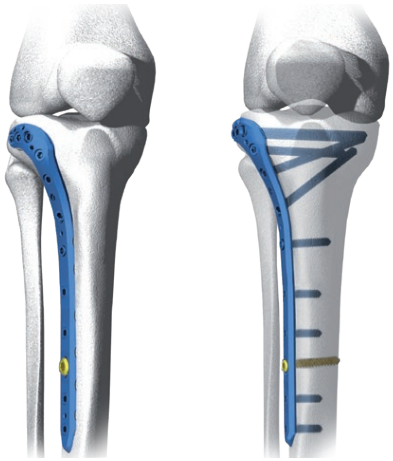
Procedure stages

- Reduction of fracture and stabilization of the fracture fragments using Kirschner wires.
- The choice of implants - determining the length and position of the implant.
- Insertion of the plate and its positioning.
- Temporary stabilization of the implant using Kirschner wires.
- Introduction of the screws in the distal parts of the plate.
- Stabilization of the shaft using locking or compression screws.
- Positioning of the plate using the compression screw in the extended hole.
- Making X-Ray film in both A-P and lateral position as to make sure the plate and screws are positioned properly.
- Closing the wound.

7.0ChLP PROXIMAL LATERAL TIBIAL PLATE

	Len	Ti L	Ti R
3	131	3.4089.603	3.4090.603
4	152	3.4089.604	3.4090.604
6	194	3.4089.606	3.4090.606
8	236	3.4089.608	3.4090.608
3-10	131 - 278		

	Ti					
3.5210.xxx	✓	✓	✓			5.0
3.5232.xxx	✓	✓		✓		5.4
3.5216.xxx	✓		✓			5.0
3.1471.xxx	✓		✓			4.5
3.5219.008	✓	✓				5.0
3.1221.070		✓				



Palette for 7.0ChLP plates - 3.4089/3.4090	40.5704.560	Aiming block L [3.4089]	40.5709.100	Plate 3.4089.604 trial	43.4089.604
		Aiming block R [3.4090]	40.5709.200	Plate 3.4089.604 trial	43.4090.604

Indications

- Articular and extra-articular, metaphysial and epiphysial comminuted fractures of the proximal part of the tibia and fractures extending to the shaft of the tibia.
- Non-union or malunions of fractured bone

Contraindications

Absolute:

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

Relative:

- Weakened bone ***(by disease, infection or prior implantation)*** making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position

Surgical approach

Lateral S incision - recommended for simple articular and extra-articular fractures

Straight anterior-lateral incision - recommended for more complex articular fractures.

Anterior-lateral approach. The incision performed between the tibia and fibula bone should begin approximately 1 cm proximally from Gerdy's tubercle for a desired length of the plate. In the minimally invasive technique, a short cut and additional cuts for the access to the holes of the shaft of the plate should be performed.

Procedure stages

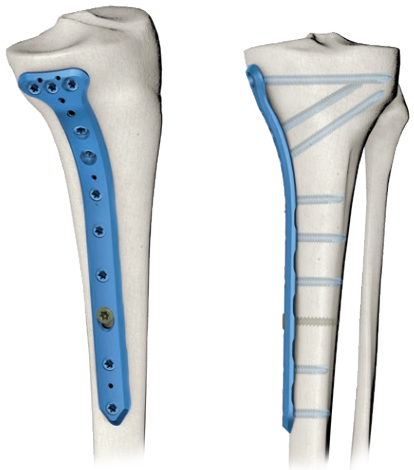
- Reduction of fracture and stabilization of the fracture fragments using Kirschner wires.
- The choice of implants - determining the length and position of the implant.
- Insertion of the plate and its positioning.
- Temporary stabilization of the implant using Kirschner wires.
- Introduction of the screws in the distal parts of the plate.
- Stabilization of the shaft using locking or compression screws.
- Positioning of the plate using the compression screw in the extended hole.
- Making X-Ray film in both A-P and lateral position as to make sure the plate and screws are positioned properly.
- Closing the wound.

7,0 ChM Locked Plating ChLP system

*	Len	Ti L	Ti R
4	134	3.7055.604	3.7054.604
6	176	3.7055.606	3.7054.606
8	218	3.7055.608	3.7054.608
10	260	3.7055.610	3.7054.610
3-13	113 - 323		

* holes number in shaft part of the plate

	Ti						
3.5210.xxx	✓	✓	✓				5.0
3.5232.xxx	✓	✓		✓			5.4
3.5216.xxx	✓		✓				5.0
3.1471.xxx	✓		✓				4.5
3.5219.008	✓	✓					5.0
3.1221.070		✓					



Palette for 7.0ChLP plates - 3.7054/3.7055	40.6292.000

Aiming block L [3.7055]	40.8221.000
Aiming block R [3.7054]	40.8220.000

Indications

- Articular and extra-articular, metaphysial and epiphysial comminuted fractures of the proximal part of the tibia and fractures extending to the shaft of the tibia.
- Non-union or malunions of fractured bone

Contraindications

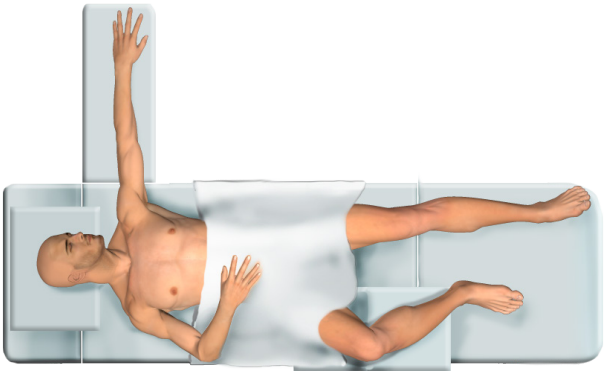
Absolute:

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

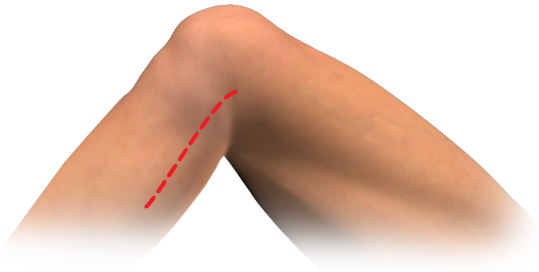
Relative:

- Weakened bone ***(by disease, infection or prior implantation)*** making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position



Surgical approach

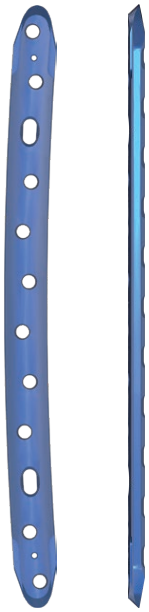


Dostęp tylno-przyśrodkowy

Staw kolanowy ułożony w lekkim zgięciu. Wykonać proste lub lekko zakrzywione cięcie biegnące od przyśrodkowego nadkłykcia kości udowej w kierunku tylno--przyśrodkowej krawędzi piszczeli. W razie potrzeby cięcie może być rozszerzone zarówno proksymalnie jak i dystalnie.

Procedure stages

- Reduction of fracture and stabilization of the fracture fragments using Kirschner wires.
- The choice of implants - determining the length and position of the implant.
- Insertion of the plate and its positioning.
- Temporary stabilization of the implant using Kirschner wires.
- Introduction of the screws in the distal parts of the plate.
- Stabilization of the shaft using locking or compression screws.
- Positioning of the plate using the compression screw in the extended hole.
- Making X-Ray film in both A-P and lateral position as to make sure the plate and screws are positioned properly.
- Closing the wound.



	Len	Ti
10	209	3.7062.610
12	251	3.7062.612
14	292	3.7062.614
16	333	3.7062.616

	Ti						
	3.5210.xxx	✓	✓	✓			5.0
	3.5232.xxx	✓	✓		✓		5.4
	3.5216.xxx	✓		✓			5.0
	3.1471.xxx	✓		✓			4.5
	3.5219.008	✓	✓				5.0
	3.1221.070		✓				

Palette for 7.0ChLP plates - 3.7062 40.5704.900

Indications

- Comminuted, transverse, spiral, oblique, compression fractures of the femoral shaft.
- Non-unions or malunions of the femoral shaft.
- Osteotomies.

Contraindications

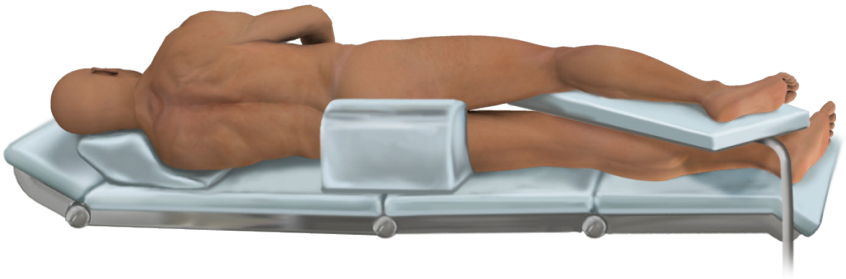
Absolute:

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

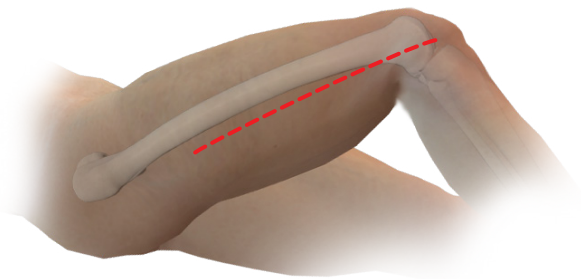
Relative:

- Weakened bone ***(by disease, infection or prior implantation)*** making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area or surgical site.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position



Surgical approach



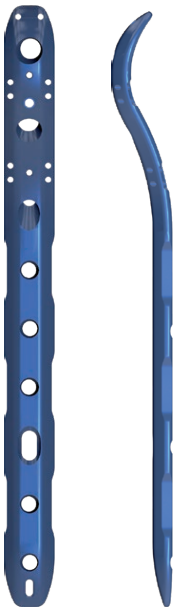
Lateral approach: length and location of the incision depends on the location and type of fracture.

Incision approx. 5 cm below the greater trochanter to approx. 5 cm above the lateral epicondyle of the femur. When minimally invasive technique is applied, the incision length of approx. 5 cm is performed on the lateral proximal or distal femur ***(depending on local conditions and a surgeon's preferences)***

Procedure stages

- Reduction and initial fracture stabilization.
- The choice of implants - determining the length and position of the implant.
- Insertion of the plate and its positioning.
- Temporary stabilization of the implant using Kirschner wires.
- Stabilization of the plate using locking or compression screws.

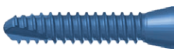
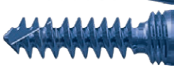
7,0 ChM Locked Plating ChLPsystem

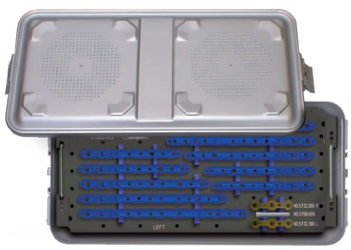


L R

Ster Non Ster

	Len	Ti L	Ti R
2	132	3.7023.602	3.7022.602
4	174	3.7023.604	3.7022.604
6	216	3.7023.606	3.7022.606
8	258	3.7023.608	3.7022.608
2-16	132 - 426		

	Ti						
	3.5210.xxx	✓	✓	✓			5.0
	3.5232.xxx	✓	✓		✓		5.4
	3.5216.xxx	✓		✓			5.0
	3.5221.xxx	✓	✓		✓	✓	7.3
	3.5224.xxx	✓			✓	✓	7.3
	3.5228.xxx	✓	✓		✓		6.5
	3.1471.xxx	✓		✓			4.5
	3.5219.008	✓	✓				5.0
	3.1221.070		✓				



Palette for 7.0ChLP plates - 3.7022/3.7023 40.5704.590

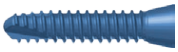
Aiming block L [3.7023] 40.5732.100

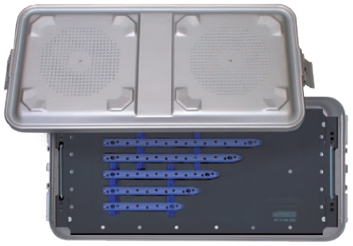
Aiming block R [3.7022] 40.5732.200

Plate 3.7022.604/ 3.7023.604 trial 43.7022.604

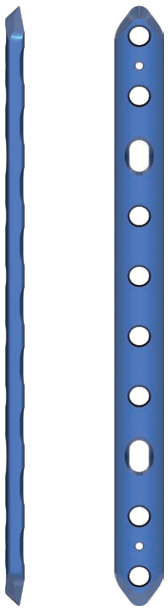
	Len	Ti
6	131	3.3155.606
8	173	3.3155.608
10	215	3.3155.610
12	257	3.3155.612
14	299	3.3155.614

4-18 | 89 - 383

	Ti						
	3.5210.xxx	✓	✓	✓			5.0
	3.5232.xxx	✓	✓		✓		5.4
	3.5216.xxx	✓		✓			5.0
	3.1471.xxx	✓		✓			4.5
	3.5219.008	✓	✓				5.0
	3.1221.070		✓				

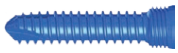
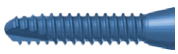


Palette for 7.0ChLP plates - straight 40.5704.550



*	Len	Ti
5	90	3.7093.605
6	108	3.7093.606
8	144	3.7093.608
10	180	3.7093.610
12	216	3.7093.612
14	252	3.7093.614

* holes number in shaft part of the plate

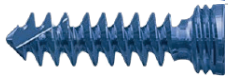
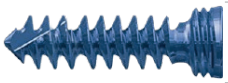
	Ti						
	3.5210.xxx	✓	✓	✓			5.0
	3.5232.xxx	✓	✓		✓		5.4
	3.5216.xxx	✓		✓			5.0
	3.1471.xxx	✓		✓			4.5
	3.5219.008	✓	✓				5.0
	3.1221.070		✓				

Palette for 7.0ChLP plates - 3.7093 40.6296.000

Ti | Ster / Non Ster

7,0 ChM Locked Plating ChLP system

III.2. SCREWS

	3.5210.xxx	✓		✓	✓			5.0
	3.5232.xxx	✓		✓		✓		5.4
	3.5228.xxx	✓		✓		✓		6.5
	3.5221.xxx	✓		✓		✓	✓	7.3
	3.5224.xxx	✓				✓	✓	7.3
	3.5216.xxx	✓			✓			5.0
	3.1471.xxx	✓			✓			4.5
	3.5219.008	✓		✓				5.0
	3.1448.xxx		✓	✓	✓			5.0
	3.1380.xxx		✓	✓		✓		5.4
	3.1383.xxx		✓	✓		✓		6.5
	3.1664.xxx		✓	✓		✓	✓	7.3
	3.1665.xxx		✓			✓	✓	7.3
	3.1449.xxx		✓		✓			5.0
	3.1443.xxx		✓		✓			4.5
	3.1448.008		✓	✓				5.0
	3.1221.070			✓				

Ster
Non Ster

7,0 ChM Locked Plating ChLPsystem

7.0ChLP SELF-TAPPING SCREW 5.0

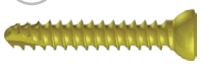
Ti

16	3.5210.016
18	3.5210.018
20	3.5210.020
22	3.5210.022
24	3.5210.024
26	3.5210.026
28	3.5210.028
30	3.5210.030
32	3.5210.032
34	3.5210.034
36	3.5210.036
38	3.5210.038
40	3.5210.040
42	3.5210.042
44	3.5210.044
46	3.5210.046
48	3.5210.048
50	3.5210.050
52	3.5210.052
54	3.5210.054
56	3.5210.056
58	3.5210.058
60	3.5210.060
65	3.5210.065
70	3.5210.070
75	3.5210.075
80	3.5210.080
85	3.5210.085
90	3.5210.090
95	3.5210.095

core diameter	4.0	
drill with scale	4.0	40.5651.212
guide sleeve	7.0/4.0	40.5705.740
screwdriver tip	T25	40.5684.200

CORTICAL SELF-TAPPING SCREW 4.5

Ti



20	3.1471.020
22	3.1471.022
24	3.1471.024
26	3.1471.026
28	3.1471.028
30	3.1471.030
32	3.1471.032
34	3.1471.034
36	3.1471.036
38	3.1471.038
40	3.1471.040
42	3.1471.042
44	3.1471.044
46	3.1471.046
48	3.1471.048
50	3.1471.050
52	3.1471.052
54	3.1471.054
56	3.1471.056
58	3.1471.058
60	3.1471.060
65	3.1471.065
70	3.1471.070
75	3.1471.075
80	3.1471.080
85	3.1471.085
90	3.1471.090
95	3.1471.095

core diameter	3.0	
drill with scale	3.2	40.5650.212
compression guide	3.2	40.4802.732
screwdriver tip	T25	40.5684.200

Ster
Non Ster

7,0 ChM Locked Plating ChLPsystem

7.0ChLP CANCELLOUS SCREW 5.4

Ti

35	3.5232.035
40	3.5232.040
45	3.5232.045
50	3.5232.050
55	3.5232.055
60	3.5232.060
65	3.5232.065
70	3.5232.070
75	3.5232.075
80	3.5232.080

7.0ChLP CONICAL CANNULATED SCREW 7.3X16/30T

Ti

50	3.5224.050
55	3.5224.055
60	3.5224.060
65	3.5224.065
70	3.5224.070
75	3.5224.075
80	3.5224.080
85	3.5224.085
90	3.5224.090
95	3.5224.095

core diameter	3.2	
drill with scale	3.2	40.5650.212
guide sleeve	3.2	40.5705.732
screwdriver tip	T25	40.5684.200

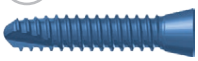
core diameter	5.2	
Kirschner wire	2.0	40.4815.210
guide sleeve	5.0/2.0 9.0/5.0	40.5654.120 40.5654.750
cannulated drill with scale	5.0/2.2	40.5652.212
cannulated screwdriver tip	T30	40.5685.200

Ster
Non Ster

7,0 ChM Locked Plating ChLP system

7.0ChLP CONICAL SELF - TAPPING SCREW 5.0

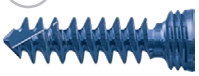
Ti



30	3.5216.030
35	3.5216.035
40	3.5216.040
45	3.5216.045
50	3.5216.050
55	3.5216.055
60	3.5216.060
65	3.5216.065
70	3.5216.070
75	3.5216.075
80	3.5216.080
85	3.5216.085
90	3.5216.090

7.0ChLP CANCELLOUS SCREW 6.5

Ti



30	3.5228.030
35	3.5228.035
40	3.5228.040
45	3.5228.045
50	3.5228.050
55	3.5228.055
60	3.5228.060
65	3.5228.065
70	3.5228.070
75	3.5228.075
80	3.5228.080
85	3.5228.085
90	3.5228.090
95	3.5228.095

core diameter	4.0	
drill with scale	4.0	40.5651.212
guide sleeve	7.0/4.0	40.5705.740
screwdriver tip	T25	40.5684.200

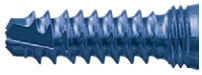
core diameter	3.2	
drill with scale	3.2	40.5650.212
guide sleeve	9.0/3.2	40.5707.732
cannulated screwdriver tip	T30	40.5685.200

Ster
Non Ster

7,0 ChM Locked Plating ChLP system

7.0ChLP CANNULATED SCREW 7.3

Ti



30	3.5221.030
35	3.5221.035
40	3.5221.040
45	3.5221.045
50	3.5221.050
55	3.5221.055
60	3.5221.060
65	3.5221.065
70	3.5221.070
75	3.5221.075
80	3.5221.080
85	3.5221.085
90	3.5221.090
95	3.5221.095
100	3.5221.100

7.0ChLP DISTANCE SCREW

Ti

8	3.5219.008

7.0ChLP CERCLAGE SCREW

Ti

3.1221.070

*
Wire diameter max. 1.5 mm

screwdriver	40.4746.000

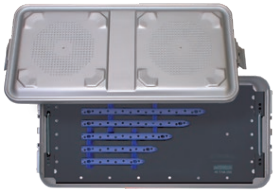
40.5749.600

Stand for screws 7.0ChLP

	Stand for screws 7.0ChLP	40.5749.600	1
	Container with solid bottom 1/2 306x272x135mm	12.0751.103	1
	Perforated aluminum cover 1/2 306x272x15mm Gray	12.0751.200	1

40.5749.700

implants not included;

Name		Catalogue no.	Pcs,	
Palette for 7.0ChLP straight plates				
	Palette	40.5704.350	1	40.5704.550
	Container with solid bottom 1/1 595x275x86mm	12.0750.100	1	
	Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1	
implants not included;				
Palette for 7.0ChLP plates - 3.4023/3.4024				
	Aiming block [3.4023]	40.5725.100	1	40.5704.510
	Aiming block R [3.4024]	40.5725.200	1	
	Protective guide 9/7	40.5708.000	2	40.5704.310
	Palette	40.5704.410	1	
	Container with solid bottom 1/1 595x275x86mm	12.0750.100	1	
	Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1	
implants not included; with additional instruments				
Palette for 7.0ChLP plates - 3.4013/3.4014				
	Aiming block L [3.4013]	40.5724.100	1	40.5704.520
	Aiming block R [3.4014]	40.5724.200	1	
	Protective guide 9/7	40.5708.000	2	40.5704.320
	Palette	40.5704.420	1	
	Container with solid bottom 1/1 595x275x86mm	12.0750.100	1	
	Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1	
implants not included; with additional instruments				

Palette	40.5704.340	1	40.5704.540
Container with solid bottom 1/1 595x275x86mm	12.0750.100	1	
Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1	

implants not included;

Palette for 7.0ChLP plates - 3.4089/3.4090;

Aiming block L [3.4089]	40.5709.100	1	40.5704.360	40.5704.560
Aiming block R [3.4090]	40.5709.200	1		
Protective guide 9/7	40.5708.000	2		
Palette	40.5704.460	1		
Container with solid bottom 1/1 595x275x86mm	12.0750.100	1		
Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1		

implants not included; with additional instruments

Palette for 7.0ChLP plates - 3.7054/3.7055

Aiming block L [3.7055]	40.8221.000	1	40.6292.000
Aiming block R [3.7054]	40.8220.000	1	
Protective guide 9/7	40.5708.000	2	
Palette	40.6293.000	1	
Container with solid bottom 1/1 595x275x86mm	12.0750.100	1	
Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1	

implants not included; with additional instruments

Palette for 7.0ChLP plates - 3.7022/3.7023;

Aiming block L [3.7023]	40.5732.100	1	40.5704.390	40.5704.590
Aiming block R [3.7022]	40.5732.200	1		
Protective guide 9/7	40.5708.000	2		
Palette	40.5704.490	1		
Container with solid bottom 1/1 595x275x86mm	12.0750.100	1		
Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1		

implants not included; with additional instruments

Palette for 7.0ChLP plates - 3.7062;

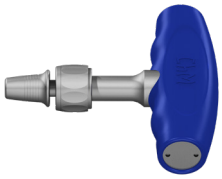
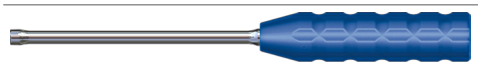
Palette	40.5704.800	1	40.5704.900
Container with solid bottom 1/1 595x275x86mm	12.0750.100	1	
Perforated aluminum lid 1/1 595x275x15mm Gray	12.0750.200	1	

implants not included;

	Name	[L/R] Left/Right	Catalogue No.
	Plate 3.4009.606 trial	L	43.4009.606
	Plate 3.4010.606 trial	R	43.4010.606
	Plate 3.4013.605 trial	L	43.4013.605
	Plate 3.4014.605 trial	R	43.4014.605
	Plate 3.4023.606 trial	L	43.4023.606
	Plate 3.4024.606 trial	R	43.4024.606
	Plate 3.4089.604 trial	L	43.4089.604
	Plate 3.4090.604 trial	R	43.4090.604
	Plate 3.7022.604 trial	L/R	43.7022.604

III.3. INSTRUMENTS FOR 7.0ChLP PLATE

A. Universal instrument set 40.5702.700

	Name	Pcs	Catalogue No.
	Guide sleeve 7.0/2.0	2	**40.5705.720**
	Guide sleeve 7.0/3.2	2	**40.5705.732**
	Guide sleeve 7.0/4.0	4	**40.5705.740**
	Compression guide 3.2	1	**40.4802.732**
	Drill with scale 3.2/220	2	**40.5650.222**
	Drill with scale 4.0/220	2	**40.5651.222**
	Cannulated drill with scale 5.0/2.2/220	1	**40.5652.222**
	Kirschner wire 2.0/220	4	**40.4815.220**
	Setting-compressing screw 4.0/180	2	**40.5706.740**
	Screw length measure	1	**40.5675.100**
	Depth measure	1	**40.4639.700**
	Screwdriver tip S3.5-1/4	1	**40.5686.000**
	Screwdriver tip T 25-1/4	1	**40.5684.000**
	Torque limiting ratchet handle T 4Nm	1	**40.6660.000**
	Bender for plates 4/6	2	**40.4250.000**
	Guide sleeve 9/3.2	1	**40.5707.732**
	Guide sleeve 9/5.0	1	**40.5654.750**
	Guide sleeve 5.0/2.0	1	**40.5654.120**
	Cannulated screwdriver tip S5-1/4	1	**40.5687.000**
	Cannulated screwdriver tip T30-1/4	1	**40.5685.000**
	Star cannulated screwdriver T30	1	**40.0672.000**
	Star screwdriver T25	1	**40.0671.000**
	Hexagonal screwdriver S3.5	1	**40.0320.000**
	Cannulated screwdriver S5	1	**40.4817.000**
	Tap 7.0ChLP - 5.0	1	**40.5646.000**
	Cortical tap HA 4.5	1	**40.5647.000**
	Screwdriver	1	**40.4746.000**
	Stand for instrument set of 7.0ChLP plate	1	**40.5703.700**
	Container with solid bottom 1/1 595x275x86mm	1	**12.0750.100**
	Perforated aluminum lid 1/1 595x275x15mm gray	1	**12.0750.200**

ChM sp. z o.o., Lewickie 3b, 16-061 Juchnowiec Kościelny, POLAND, tel. + 48 85 86 86 100, fax + 48 85 86 86 101, chm@chm.eu, www.chm.eu

B. Additional instruments

Instruments not included in the instrument set [40.5702.700]

	Name	Pcs	Catalogue No.
	Protective guide 9.0/7.0	2	**40.5708.000**
	Aiming block L **[3.4023]**	1	**40.5725.100**
	Aiming block R **[3.4024]**	1	**40.5725.200**
	Aiming block L **[3.4013]**	1	**40.5724.100**
	Aiming block R **[3.4014]**	1	**40.5724.200**
	Aiming block L **[3.4089]**	1	**40.5709.100**
	Aiming block R **[3.4090]**	1	**40.5709.200**
	Aiming block L **[3.7023]**	1	**40.5732.100**
	Aiming block R **[3.7022]**	1	**40.705.200**
	Aiming block L **[3.7055]**	1	**40.7054.000**
	Aiming block R **[3.7054]**	1	**40.8220.000**

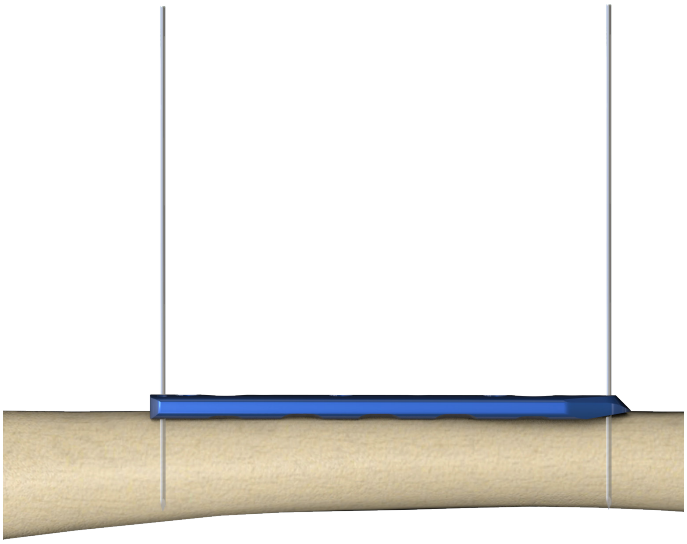
IV. SURGICAL TECHNIQUE

IV.1. TEMPORARY PLATE ATTACHMENT

40.4815.220

When fracture is reduced and the plate position is confirmed, determine its temporary location using Kirschner wires 2.0 **[40.4815.220]**.
Wires can be inserted in proximal holes of the plate and the most distal ones.

Confirm the plate position is correct taking X-Ray image.

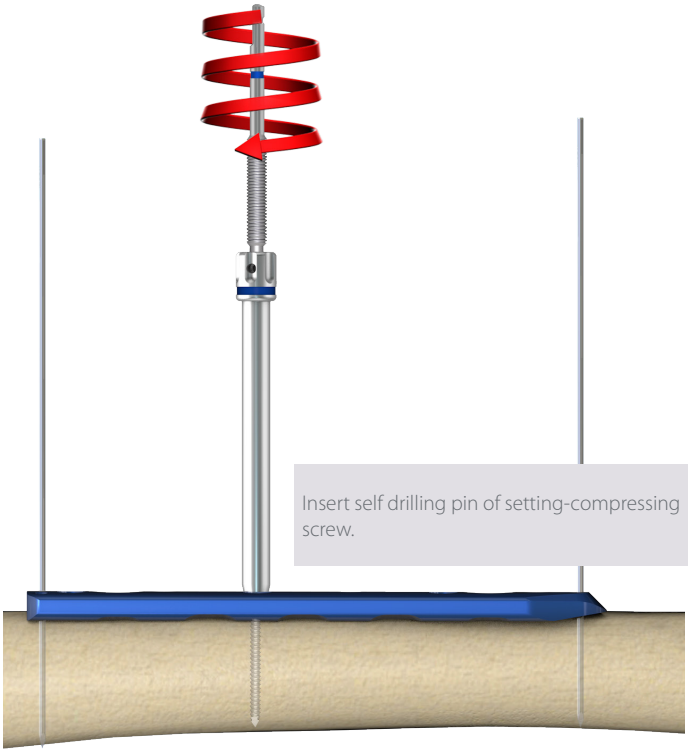


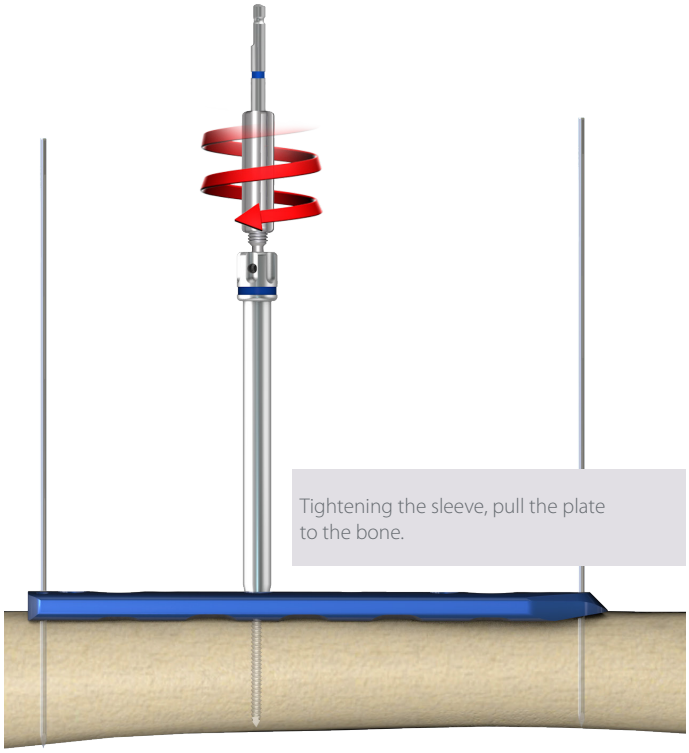

40.5705.740


40.5706.740

The Setting-compressing screw 4.0/180 **[40.5706.740]** can be used to stabilize and tighten the plate up to the bone for temporary purposes. The screw is to be inserted via the Guide sleeve 7.0/4.0 **[40.5705.740]**.

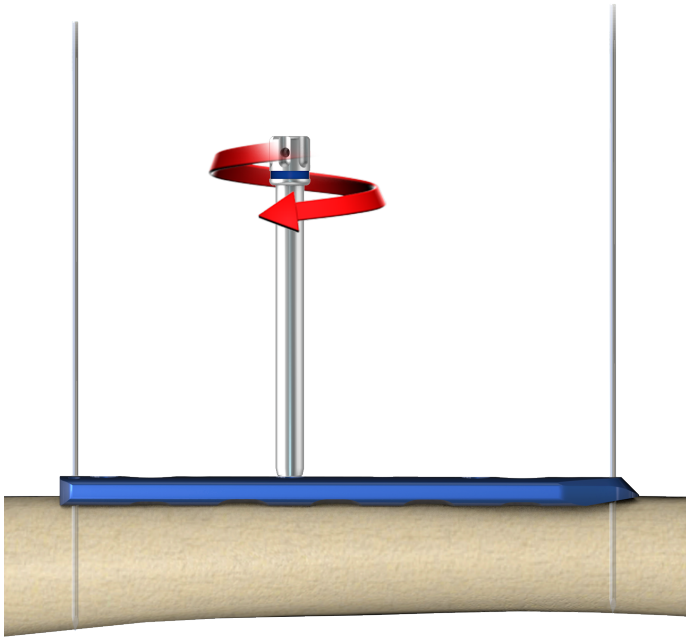
Locking screw Ø5.0 can be inserted in the hole after removal of the Setting-compressing screw 4.0/180.


Insert self drilling pin of setting-compressing screw.


Tightening the sleeve, pull the plate to the bone.

IV.2. LOCKING SCREW Ø5.0 INSERTION

It is important to drill exactly in the axis of a locking hole. Use always the appropriate guide sleeve when drilling. The guide sleeve will ensure the locking screw take an axial position towards the hole of the plate and be correctly locked in the plate. Unprepared drilling of a hole can lead to: thread skewing and jamming the screw, incorrect screw locking and problems when removing the screws *(thread seizure)*.



Guide sleeve screwing

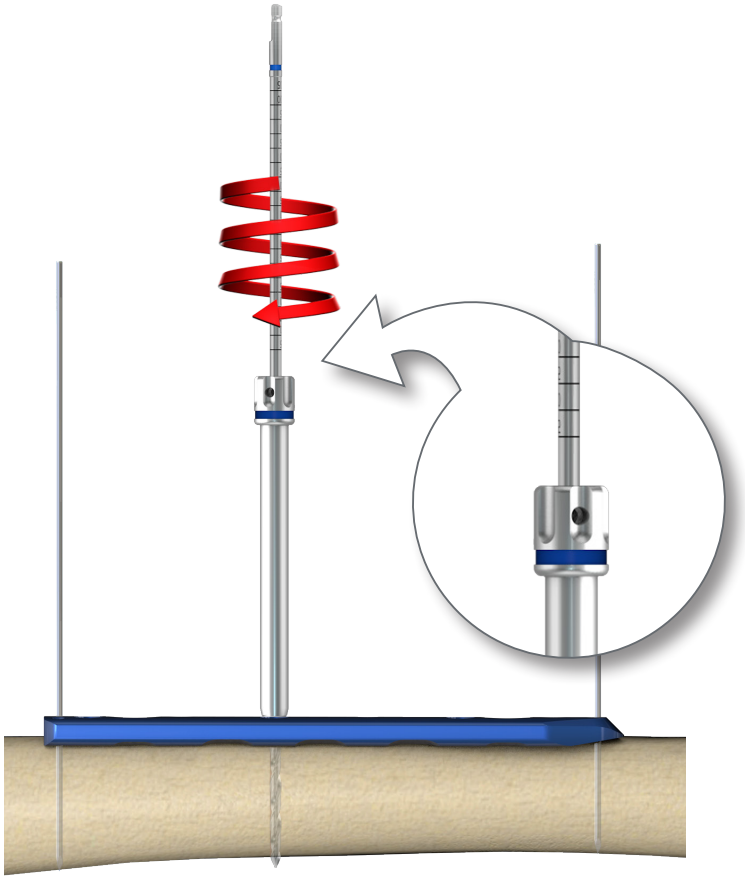
 40.5705.740

Insert the Guide sleeve 7.0/4.0 **[40.5705.740]** into the plate

Drilling the hole

 40.5651.222

Ream the hole using the Drill with scale 4.0/220 **[40.5651.222]** until the desire depth is reached



Hole depth measurement

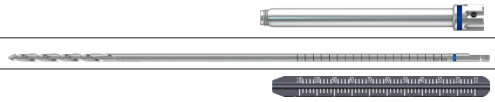
OPTION I

 40.5705.740

 40.5651.222

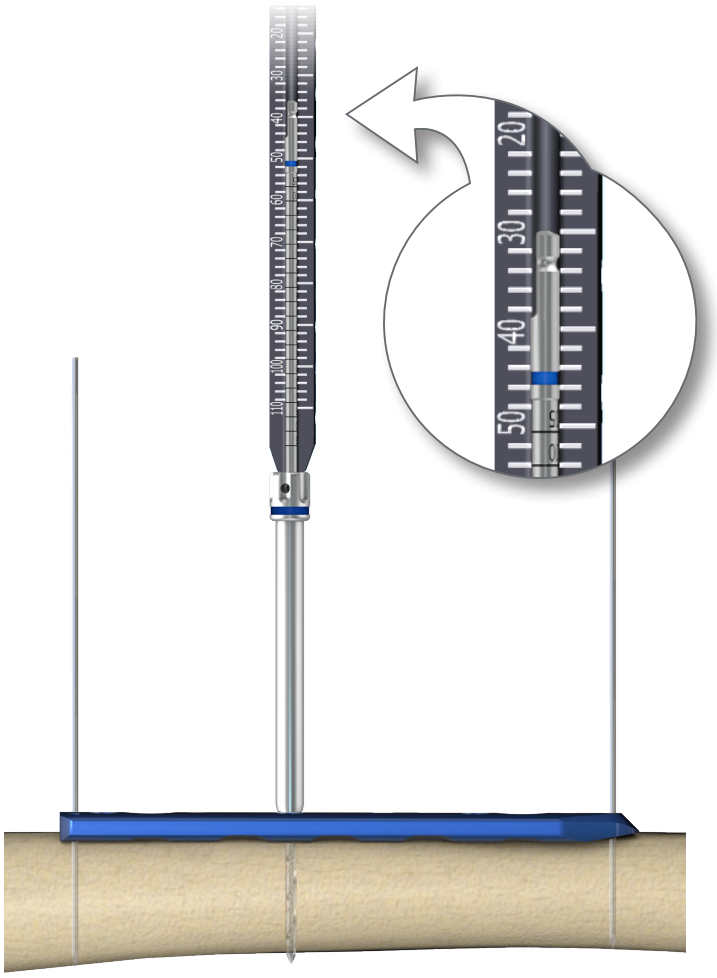
Read the value on the Drill with scale **[40.5651.222]** or

OPTION II

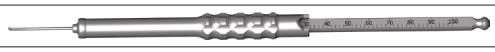


40.5705.740
40.5651.222
40.5675.100

use the Screw length measure **[40.5675.100]**.

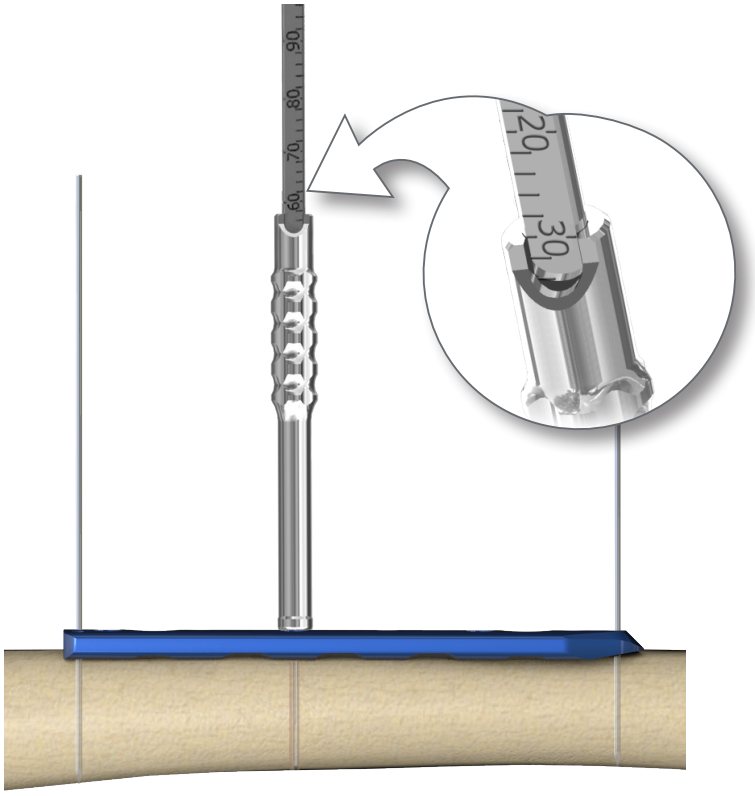


OPTION III



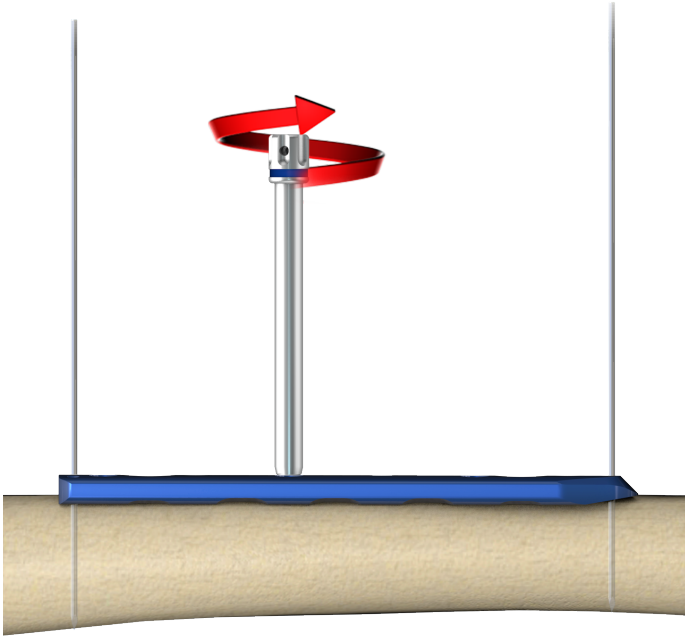
40.4639.700

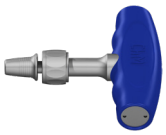
Unscrew the Guide sleeve 7.0/4.0 **[40.5705.740]** and define the screw length using the Depth measure **[40.4639.700]**.



Screw insertion

Remove the Guide sleeve 7.0/4.0 **[40.5705.740]**.



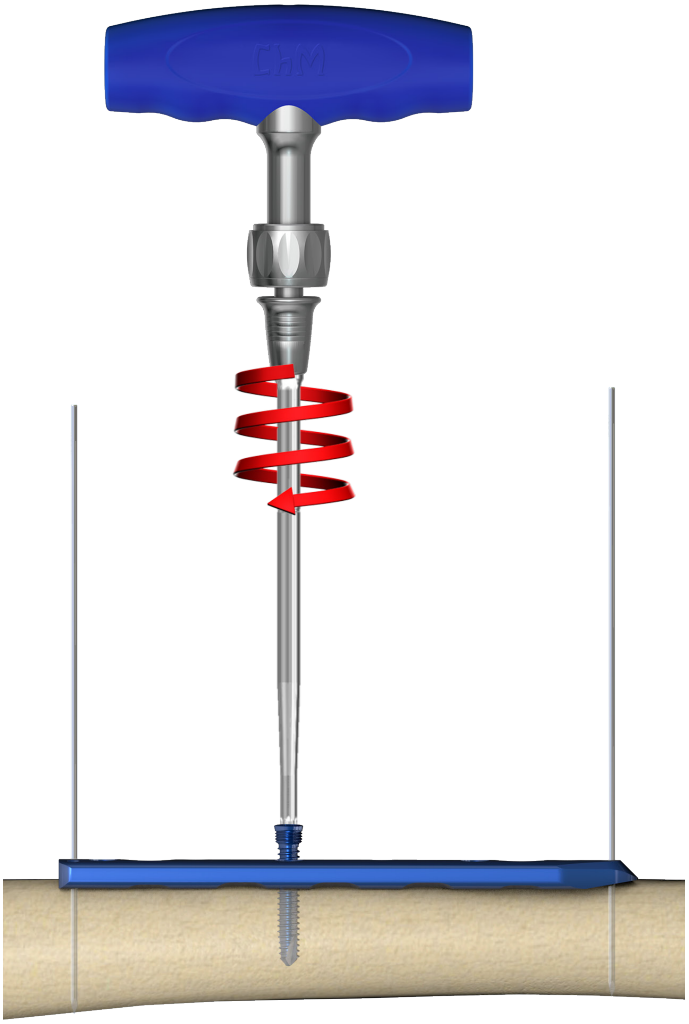


40.6660.000

40.5686.000

40.5684.000

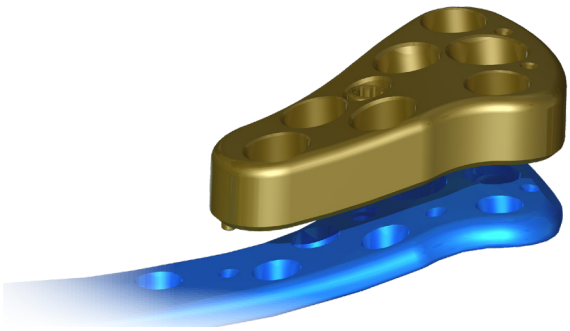
Insert the locking screw Ø5.0 using the Torque wrench **[40.6660.000]** and proper screwdriver tip.



IV.3. THE USE OF AIMING BLOCK

Most locking plates ChLP are available with aiming blocks, as additional complementary instruments. Using aiming blocks ensures proper fastening of guide sleeves in the locking holes, in the epiphyseal part of the plate. It facilitates also the smooth conduct of the procedure, reduces its duration, and ensures that drilling is performed in the axis of the locking hole *(note from point IV.2)*.

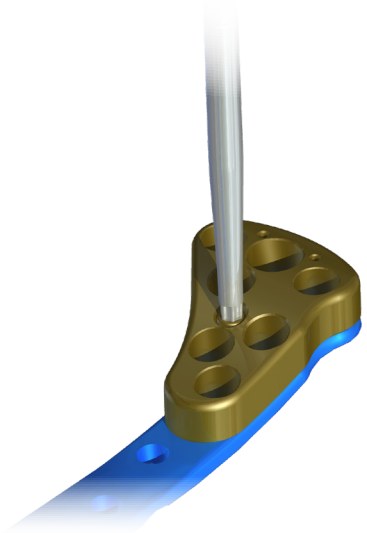
When aiming blocks are not used, the implantation can be incorrect, and in particular can cause:
improper locking of the screws and their migration,
decrease of the fixation stability,
complications while implants removal.



40.5725.100

przykładowa nakładka celująca

40.0671.000



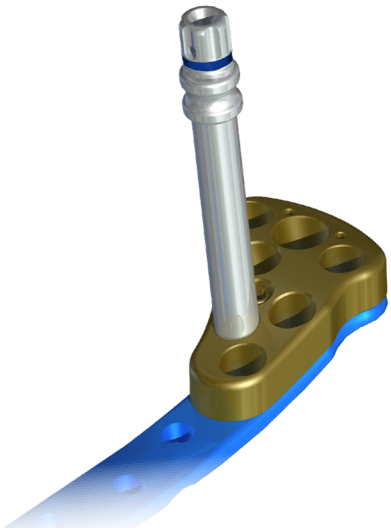
Position the aiming block on the plate.
Tighten up with Star screwdriver T25 **[40.0671.000]**.

40.5708.000

40.5705.740

Insert Protective sleeve 9.0/7.0 **[40.5708.000]** in the desired hole of the aiming block.

Then screw the Guide sleeve 7.0/4.0 **[40.5705.740]** into the plate through the Protective sleeve 9.0/7.0.



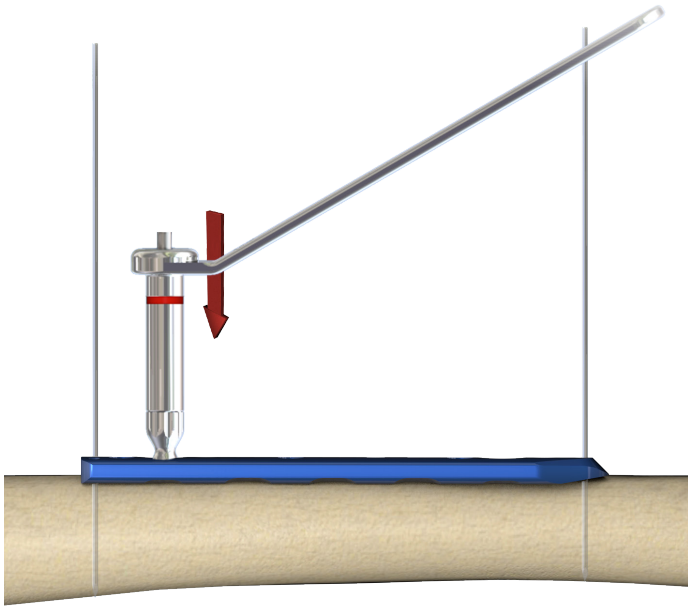
Further proceedings in accordance with the steps described in the point IV.2 on page 25.

IV.4. CORTICAL SCREW Ø4.5 INSERTION

Compression guide setting

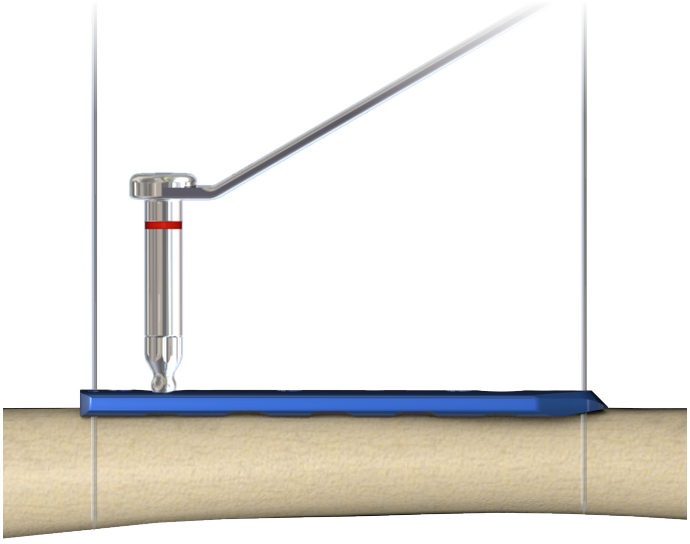
40.4802.732

Set the Compression guide 3.2 **[40.4802.732]** in desire position:



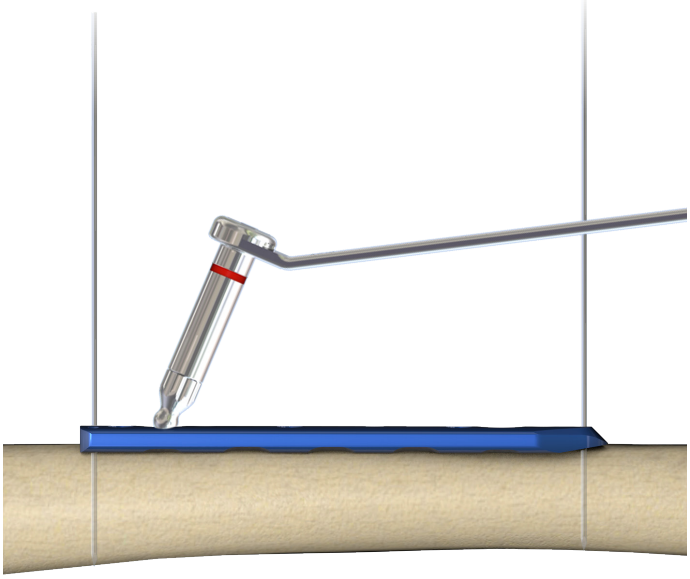
1. Neutral position

Press the guide to the plate to achieve the neutral position for screw insertion.



2. Compressive position

Move the guide without pressure to the edge of compression hole to achieve the compression position for screw insertion.



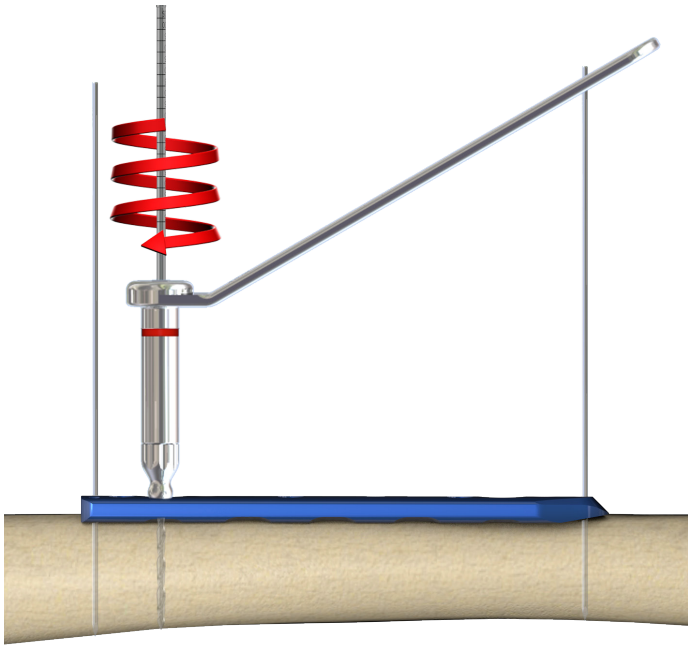
3. Angular position

Angular positioning of the guide is also available.

Drilling


40.5650.222

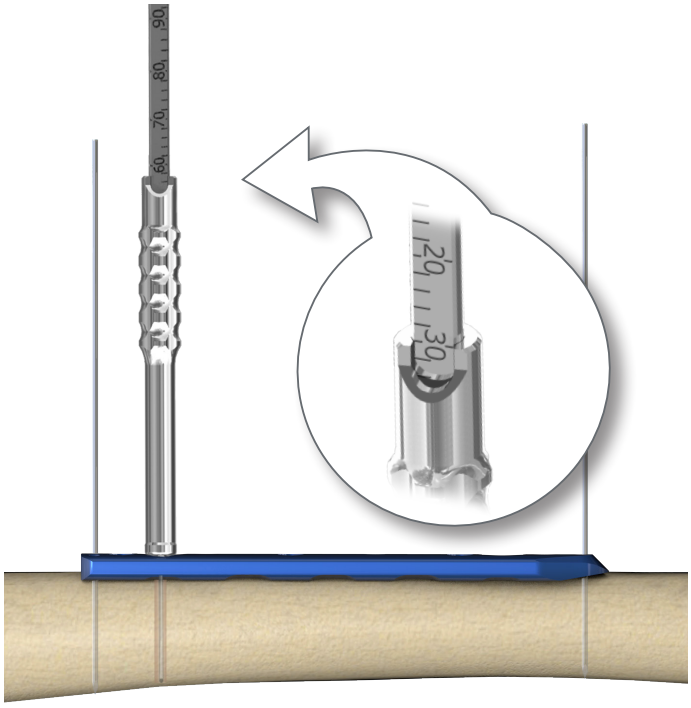
Drill the hole through both cortices in desire position for the cortical screw Ø4.5 insertion using the Drill Ø3.2/220 [40.5650.222]



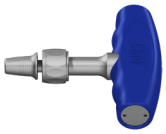
Hole depth measurement


40.4639.700

Insert the Depth measure [40.4639.700] into the drilled hole until its hook anchors the outer surface of the opposite cortex



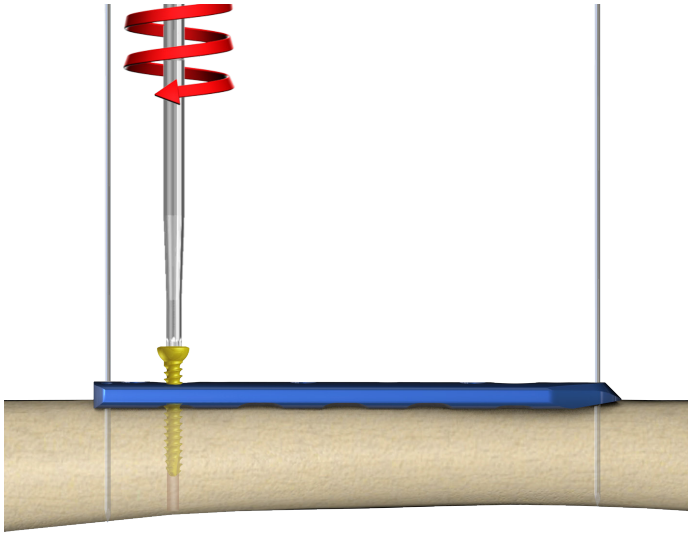
Screw insertion


40.6660.000


40.5686.000

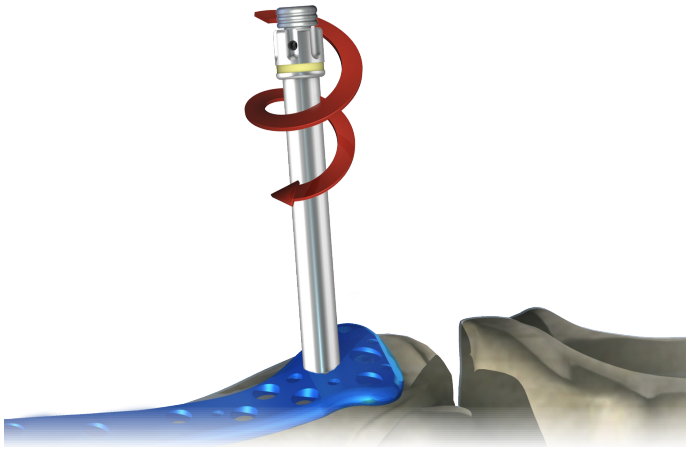

40.5684.000

Insert cortical screw Ø4.5.



IV.5. CANNULATED SCREW Ø7.3 INSERTION

In the middle of the condylar part of the femoral plate L-**[3.4023]**, R-**[3.4024]**, there is provided a larger hole for insertion of cannulated screw Ø7.3mm.

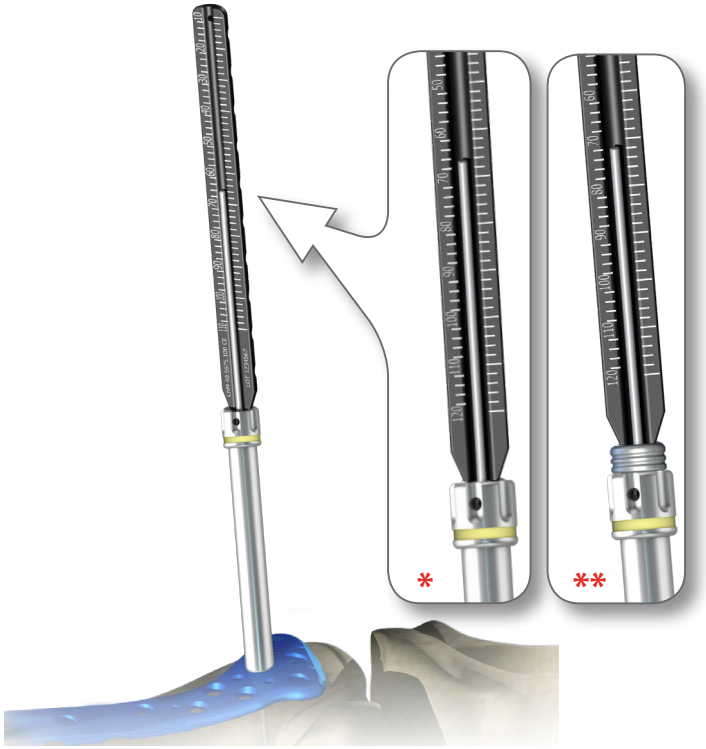


Guide sleeve screwing


40.5654.750


40.5654.120

Screw in the Guide sleeve 9.0/5.0 **[40.5654.750]** along with the Guide sleeve 5.0/2.0 **[40.5654.120]** for Kirschner wire 2.0 insertion **[40.4815.220]**.



Hole depth measurement

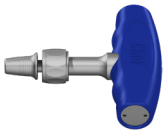
40.4815.220


40.5675.100

Insert Kirschner wire 2.0 **[40.4815.220]**; determine the screw length using the Screw length measure **[40.5675.100]**.

*Remove the inner sleeve 5.0/2.0 **[40.5654.120]** and read the value using the Screw length measure **[40.5675.100]**.
Subtract 5mm from the measured value if the sleeve 5.0/2.0 **[40.5654.120] is not removed.

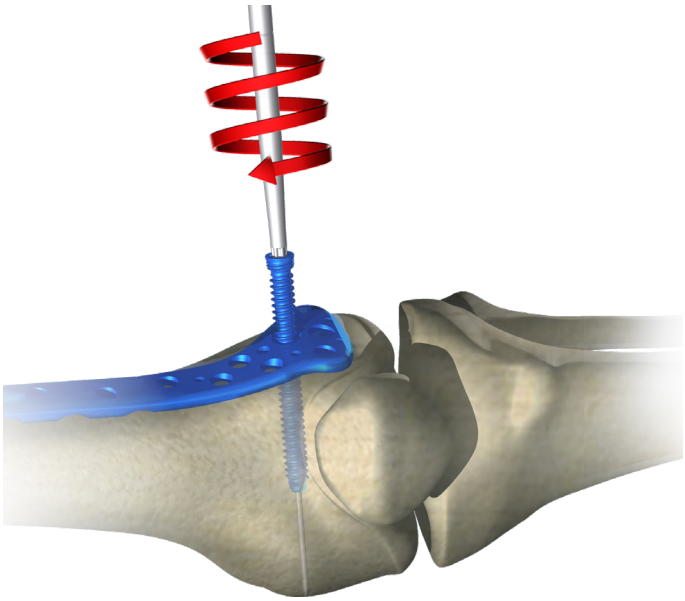
Cannulated screw Ø7.3 insertion

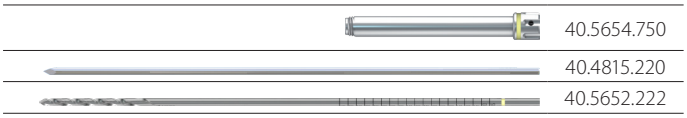

40.6660.000


40.5687.000


40.5685.000

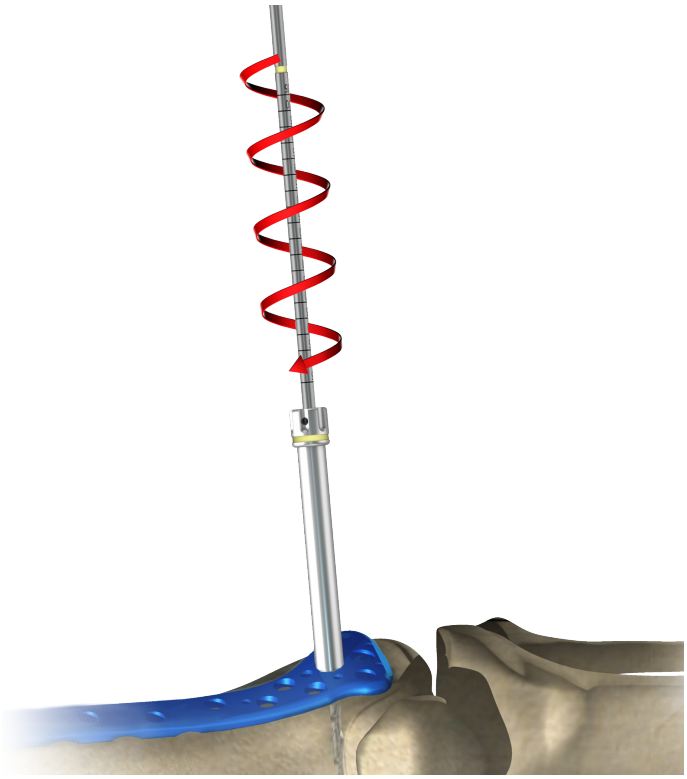
Remove the Guide sleeve.
Insert the cannulated screw Ø7.3 using the Torque wrench **[40.6660.000]** and relevant cannulated screwdriver tip.





Use the Cannulated drill with scale 5.0/2.2/220 **[40.5652.222]**

If the bone is very hard, use the Cannulated drill with scale 5.0/2.2/220 **[40.5652.222]**. Drill using the Guide sleeve 9.0/5.0 **[40.5654.750]** via Kirchner wire 2.0 **[40.4815.220]**.



V. POSTOPERATIVE TREATMENT

Postoperative treatment after locking plates does not differ from treatment after conventional stabilization.

VI. IMPLANT REMOVAL

In order to remove the screws, first unlock all locking screws from the plate. Then remove bone screws. This prevents the rotation of the plate while removing the last locking screw.

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