ST/62A

ChM®

7,0 ChM Locked Plating ChLPsystem

7.0ChLP DYNAMIC HIP PLATE

- *IMPLANTS*
- *INSTRUMENT SET 40.6600.000*
- *SURGICAL TECHNIQUE*

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SYMBOLS DESCRIPTION

Ti	Titanium or titanium alloy
St	Steel
L	Left
R	Right
L R	Available versions: left/right
Len	Length
	Torx drive
	Torx drive cannulated
	Hexagonal drive
	Hexagonal drive cannulated
	Cannulated
	Locking
	Diameter
	Inner diameter
	Recommended length range for a particular nail
	Angle
16 ÷ 90	Available lengths
Ster Non Ster	Available in sterile/ non- sterile condition

	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

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I. INTRODUCTION

Dynamic hip plate **[3.5314]** is used for the treatment of the fractures of proximal part of the femur. The plate is a part of the ChLP locking plates system developed by **ChM**. The presented range of implants is made of titanium, titanium alloys and cobalt alloy in accordance with ISO 5832 standard. Compliance with the requirements of quality management systems and the requirements of Directive 93/42/EEC concerning medical devices guarantee high quality of the offered implants.

The implant system includes:

- implants *(dynamic hip plate, telescopic screws, locking screws and cortical screws)*,
- instrument set used for plate implantation and removal,
- surgical technique.

Indication

The main objective of the surgical treatment of fractures of the femur with plate **[3.5314]** is reconstruction of the anatomical structure of the bone and earlier return of the patient to the public and professional life. The stabilization using this method provides: the possibility of precise fracture reduction, angularly stable immobilization of bone fragments while maintaining the blood supply.

The plate is intended for the treatment of:

- femoral neck and head fractures,
- intertrochanteric fractures,
- pertrochanteric fractures.
- subtrochanteric fractures,
- femoral shaft fractures,
- mal-, and non-unions.

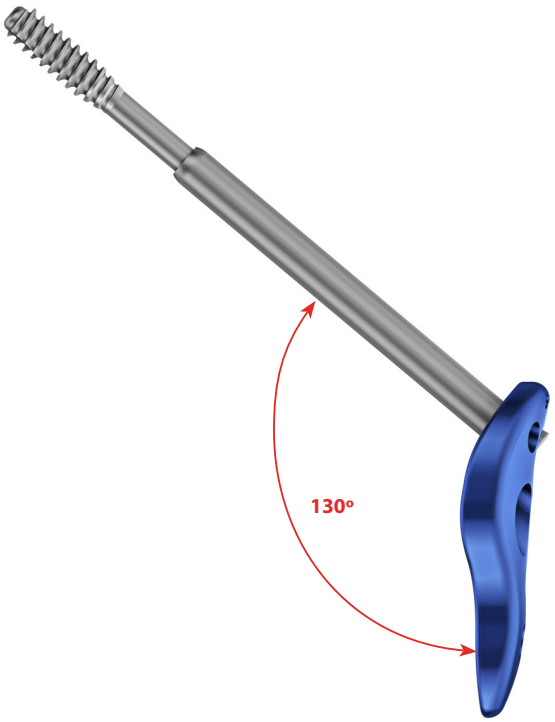
Before use, read carefully the instructions for use supplied with the product and attached at the end of this document. It contains: indications, contraindications, adverse effects, recommendations, warnings, etc., related to the use of the product.

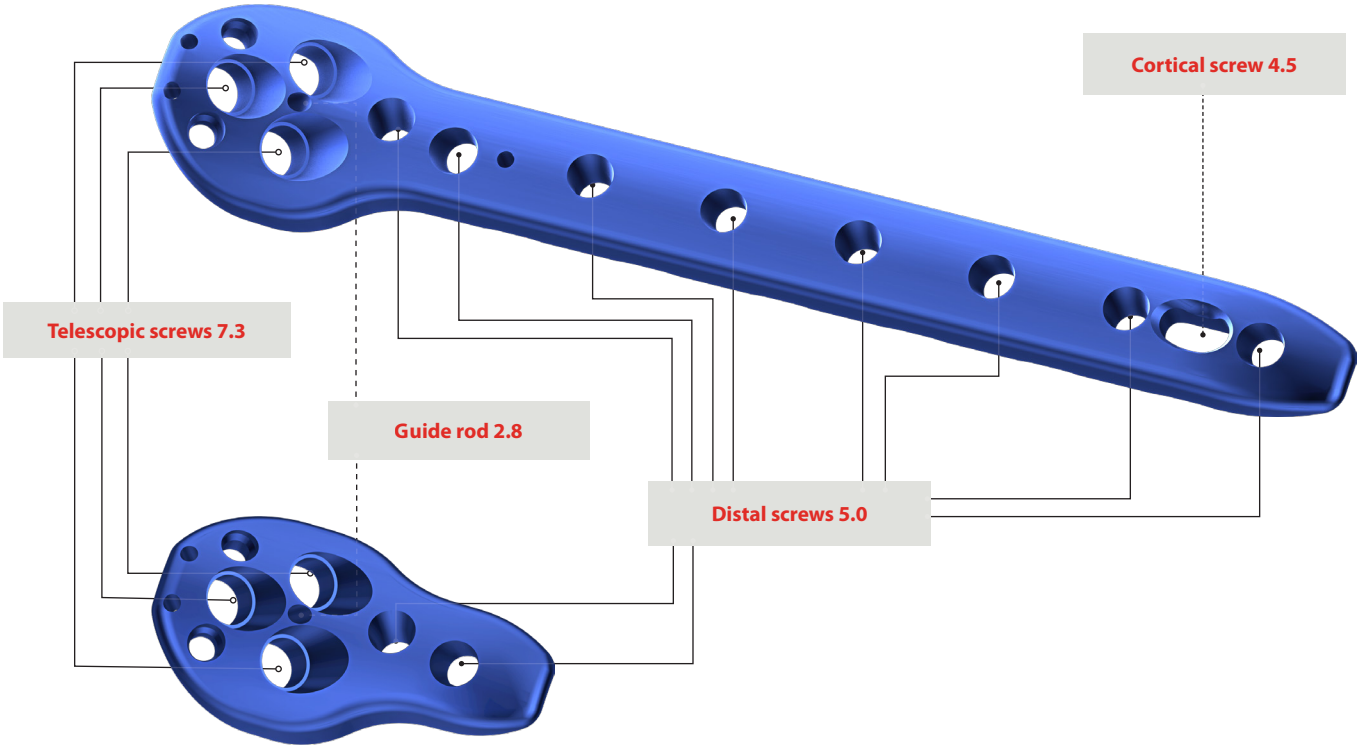
II. IMPLANTS

7.0 ChM Locked Plating ChLP system

TITANIUM ALLOY Ti

7.0ChLP dynamic hip plates **[3.5314]** are a part of the 7.0ChLP system.
The system includes plates and screws.





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7.0ChLP DYNAMIC HIP PLATE

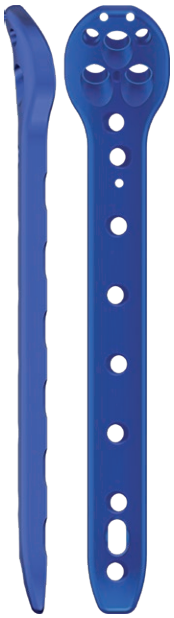
*	Len	Ti
2	59	3.5314.002
3	80	3.5314.003

* holes number in shaft part of the plate

Ti						
3.5210.xxx	✓	✓	✓			5.0
3.5316.xxx						7.3

7.0ChLP DYNAMIC HIP PLATE

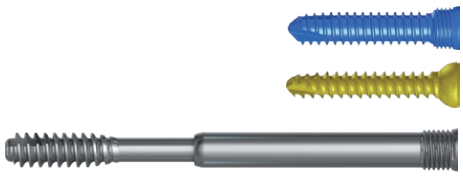
7,0 ChM Locked Plating ChLPsystem



Ster
Non Ster

*	Len	Ti
4	101	3.5314.004
5	122	3.5314.005
6	143	3.5314.006
7	164	3.5314.007
8	185	3.5314.008

* holes number in shaft part of the plate



Ti						
3.5210.xxx	✓	✓	✓			5.0
3.1471.xxx	✓		✓			4.5
3.5316.xxx						7.3

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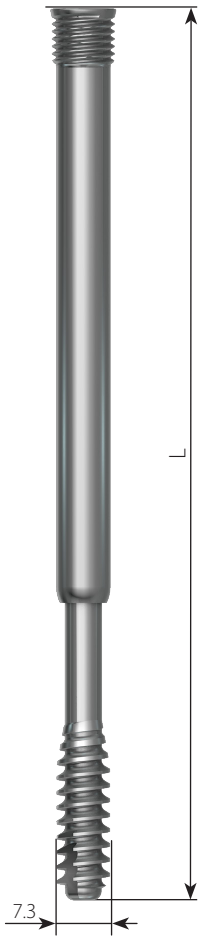
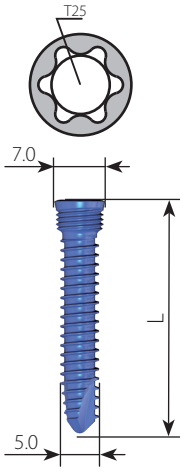
Telescopic screw 7.3



L [mm]	Catalogue no.
70	3.5316.070
75	3.5316.075
80	3.5316.080
85	3.5316.085
90	3.5316.090
95	3.5316.095
100	3.5316.100
105	3.5316.105
110	3.5316.110
115	3.5316.115
120	3.5316.120

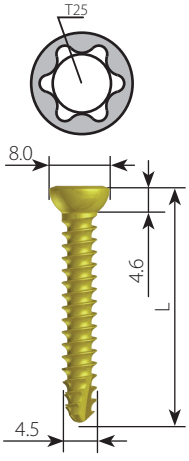
7.0ChLP self-tapping screw 5.0




self-tapping

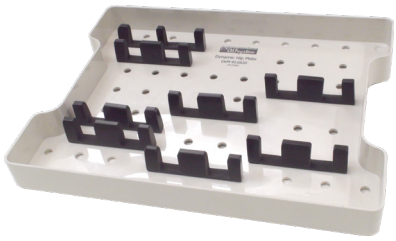
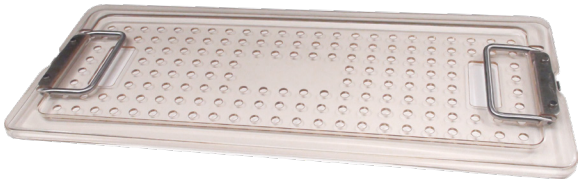
L [mm]	Catalogue no.
30	3.5210.030
32	3.5210.032
34	3.5210.034
36	3.5210.036
38	3.5210.038
40	3.5210.040
42	3.5210.042
44	3.5210.044
46	3.5210.046
48	3.5210.048
50	3.5210.050
52	3.5210.052
54	3.5210.054
56	3.5210.056
58	3.5210.058
60	3.5210.060

Cortical self-tapping screw 4.5




self-tapping

L [mm]	Catalogue no.
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

No.		Name	Catalogue no.
1		Palette for dynamic hip plates	**40.6620.000**
2		Palette for telescopic screws 7.3	**40.6621.000**
3		Palette for locking screws 5.0/cortical screws 4.5	**40.6622.000**
4		Container 9x4 H	**40.6680.000**
5		Container cover 9x4	**40.6682.000**

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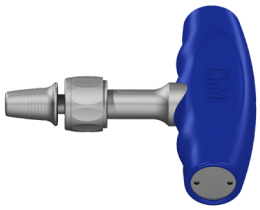
III. INSTRUMENTS

Instrument set for dynamic hip plate 40.6600.000

No.		Name	Catalogue no.	Pcs.
1		Targeter arm	**40.6601.000**	1
2		Distal targeter	**40.6602.000**	1
3		Polyhole guide	**40.6612.000**	1
4		Protective guide 9/2	**40.6603.000**	3
5		Guide rod 2.8x350	**40.6610.000**	2
6		Kirschner wire 2.0x385	**40.6604.000**	3
7		Screw length measure	**40.6605.000**	1
8		Drill 7.3/5	**40.6606.000**	1
9		Screw wrench 7.3	**40.6607.000**	1
10		Connector	**40.6608.000**	1
11		Wrench for 7.3 screw removal	**40.6609.000**	1
12		Trocar 7.0	**40.5695.570**	1
13		Guide sleeve 7.0/4.0	**40.5690.540**	2
14		Protective guide 9.0/7.0	**40.5693.570**	2
15		Drill with scale 3.2/300	**40.5650.301**	1
16		Drill with scale 4.0/300	**40.5651.301**	2
17		Screwdriver tip T25-1/4	**40.5684.000**	1
18		Screwdriver tip T30-1/4	**40.6611.000**	1

Instrument set for dynamic hip plate 40.6600.000

No.		Name	Catalogue no.	Pcs.
19		Torque limiting ratchet handle T 4Nm	**40.6660.000**	1
20		Guide sleeve 8.0/3.2	**40.5691.532**	1
21		Protective guide 10.0/8.0	**40.5694.580**	1
22		Trocar 8.0	**40.5696.580**	1
23		Targeter end cap	**40.5612.000**	15
24		Screw length measure	**40.5700.000**	1
25		Connector AO - 7.0ChLP	**40.4898.070**	1
26		Tap 7.0ChLP - 5.0	**40.5646.000**	1
27		Tap HA 4.5	**40.5647.000**	1
28		Stand	**40.6619.000**	1

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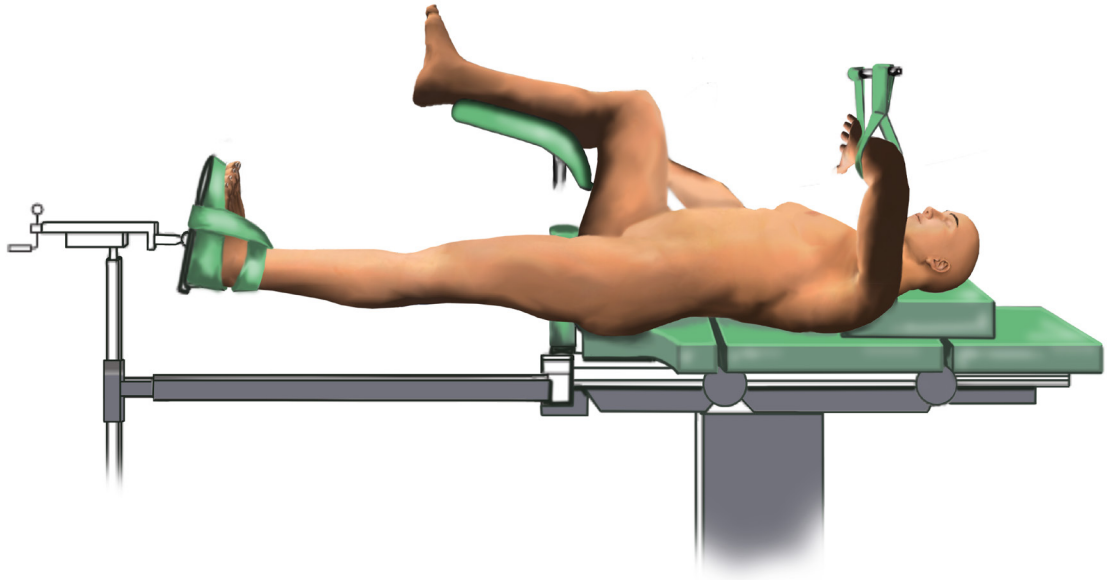
IV. SURGICAL TECHNIQUE

IV.1. PATIENT POSITIONING

Place the patient supine. Make sure that the position is adequate for taking lateral and anteroposterior *(AP)* x-Ray images.



IV.2. SURGICAL APPROACH

Side incision of the proximal femur for a length of 60mm.

IV.3. FRACTURE REDUCTION

It is necessary to perform accurate anatomical fracture reduction prior to applying plates with locking screws. Reduce and temporarily stabilize the fracture fragments using Kirschner wires and / or reduction forceps.

IV.4. ATTACHING PLATE TO THE TARGETER

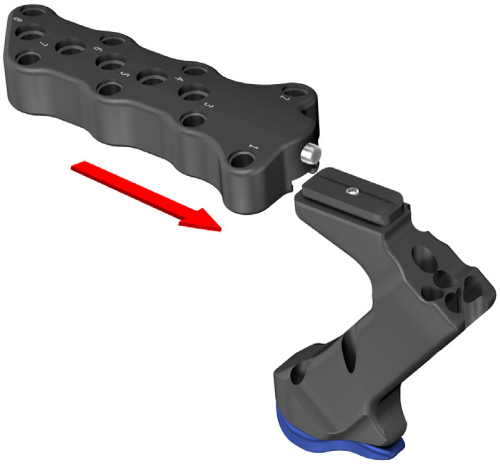
Attach targeter arm **[40.6601]** and tighten up the setting screw.

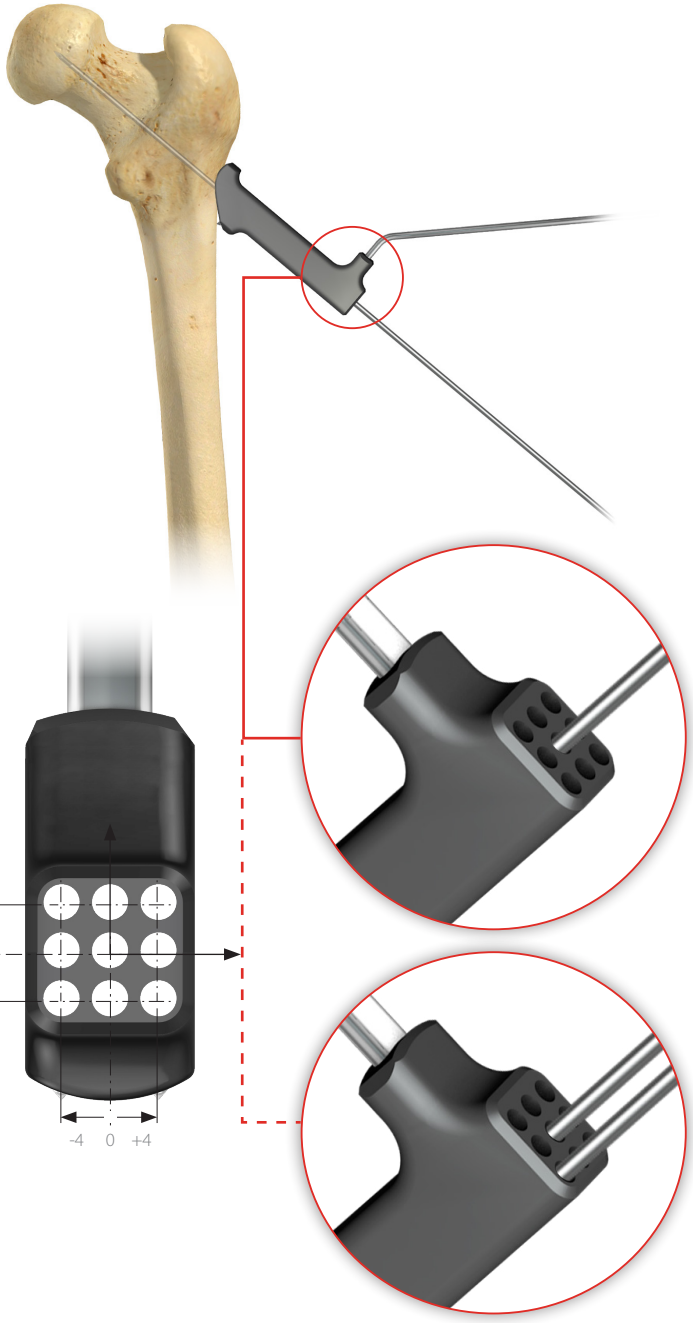
IV.5. SHORT PLATE INSERTION *(2 HOLES)*

Attach distal targeter **[40.6602]** to the targeter arm **[40.6601]**.

40.6601

40.6602





1 When soft tissues incision is performed and surgical approach is prepared, lean, at a right angle, the polyhole guide **[40.6612]** against the bone.

Insert, through the central hole of the polyhole guide **[40.6612]**, the guide rod 2.8 **[40.6610]** centrally in the middle of the femoral neck and head.

Confirm the location of the rod by taking x-Ray images in the AP and lateral plane.

40.6612

40.6610

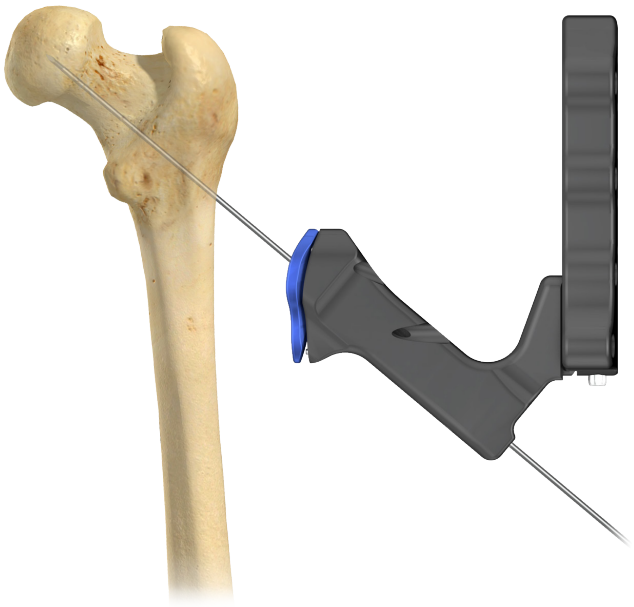
NOTE: If the correction of the position of the guide rod is necessary, insert the other guide rod 2.8 **[40.6610]** through one of the peripheral holes of the polyhole guide and remove the rod inserted centrally.

2 Introduce the plate combined with the targeter **[40.6601]** via the guide rod 2.8 **[40.6610]** until the plate leans against the cortical bone.

NOTE: There is one central hole in the plate for the guide rod 2.8 insertion.

40.6610


40.6601



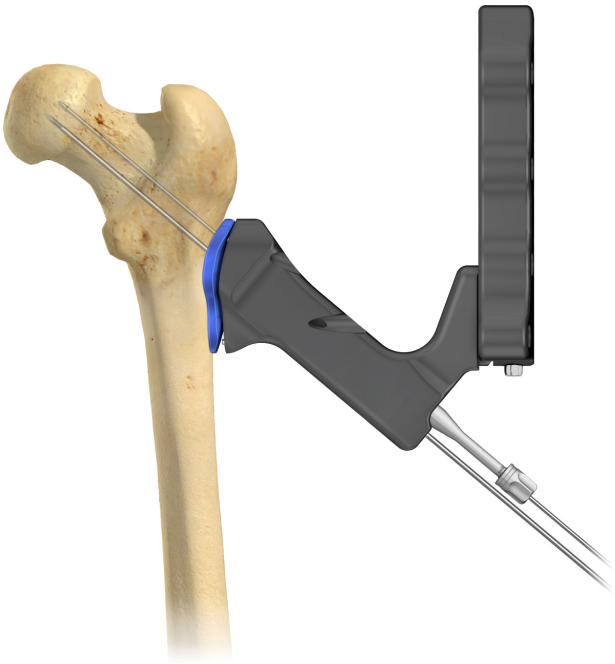
3 Insert protective guide 9/2 **[40.6603]** to the targeter arm **[40.6601]**.

Set the plate along the axis of the femur and insert Kirschner wires 2.0x385 **[40.6604]** through the protective guides 9/2 **[40.6603]**.


40.6601

40.6603

40.6604

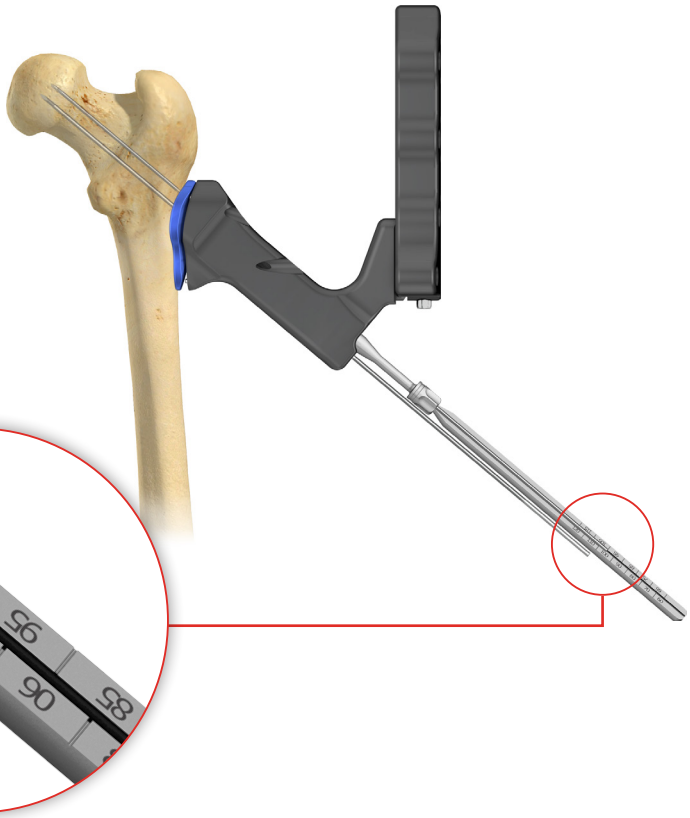


4 Using screw length measure **[40.6605]**, determine the length of the telescopic screw 7.3.

Remove the screw length measure **[40.6605]** and the protective guide **[40.6603]**.


40.6605

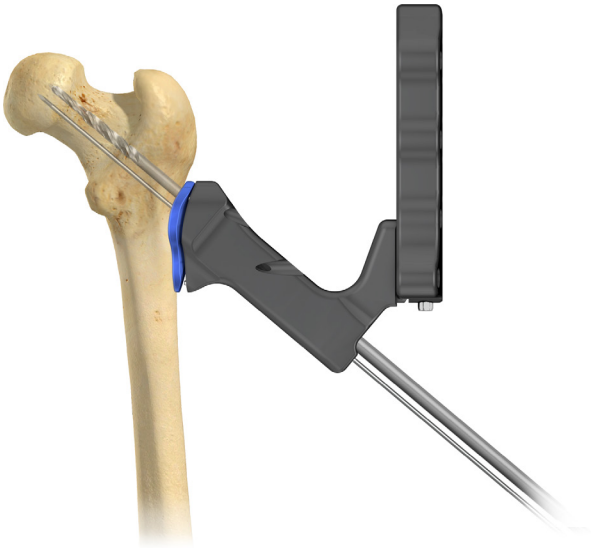

40.6603



5 Using the drill 7.3/5 **[40.6606]**, drill, via Kirschner wire 2.0 **[40.6604]**, a hole for telescopic screw 7.3.


40.6604

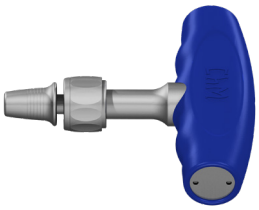

40.6606

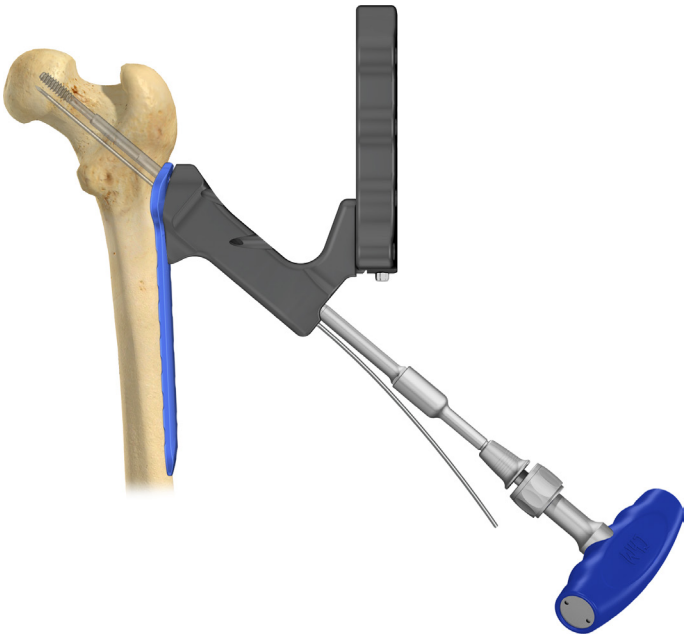


6 Using screw wrench 7.3 **[40.6607]**, connector **[40.6608]** and torque limiting ratchet handle T 4Nm **[40.6660]**, insert telescopic screw 7.3.


40.6607

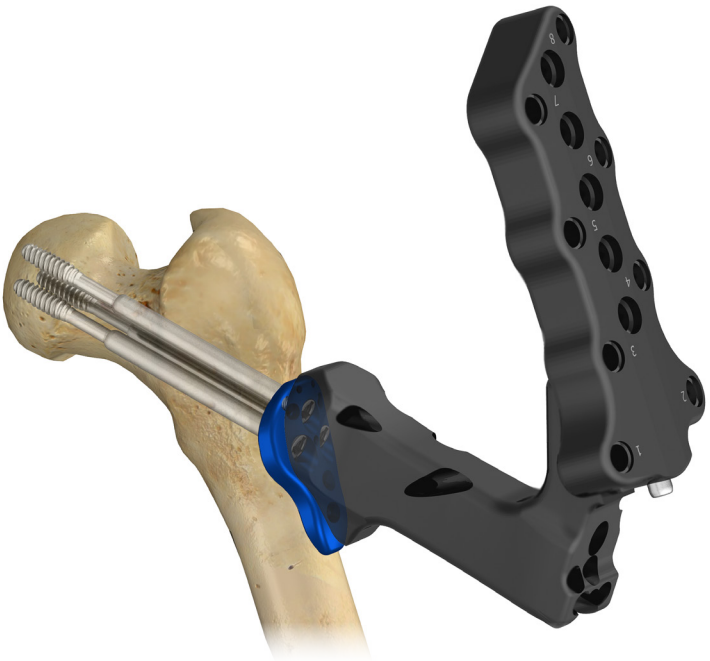

40.6608


40.6660



NOTE:
Proper surgical technique requires three telescopic screws 7.3 to be inserted.

The next stages of the procedure - as described in Section IV.5 from step 3 to 6.

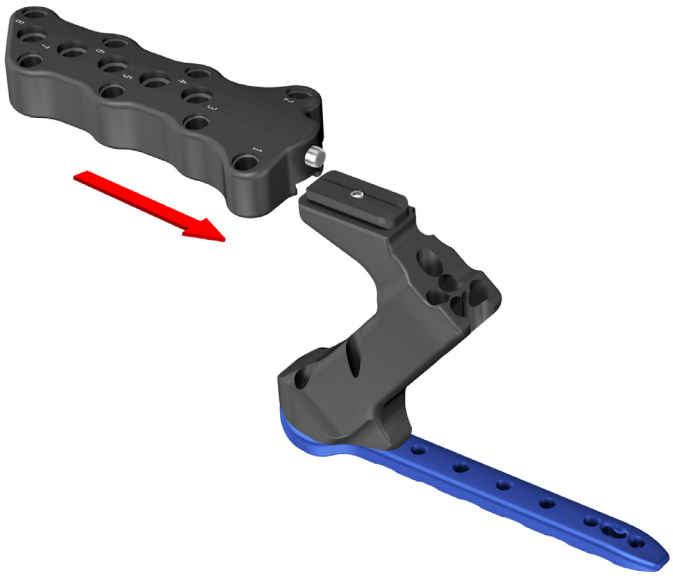


IV.6. LONG PLATE INSERTION *(3 HOLES AND MORE)*

7 Attach distal targeter **[40.6602]** to the targeter arm **[40.6601]**.

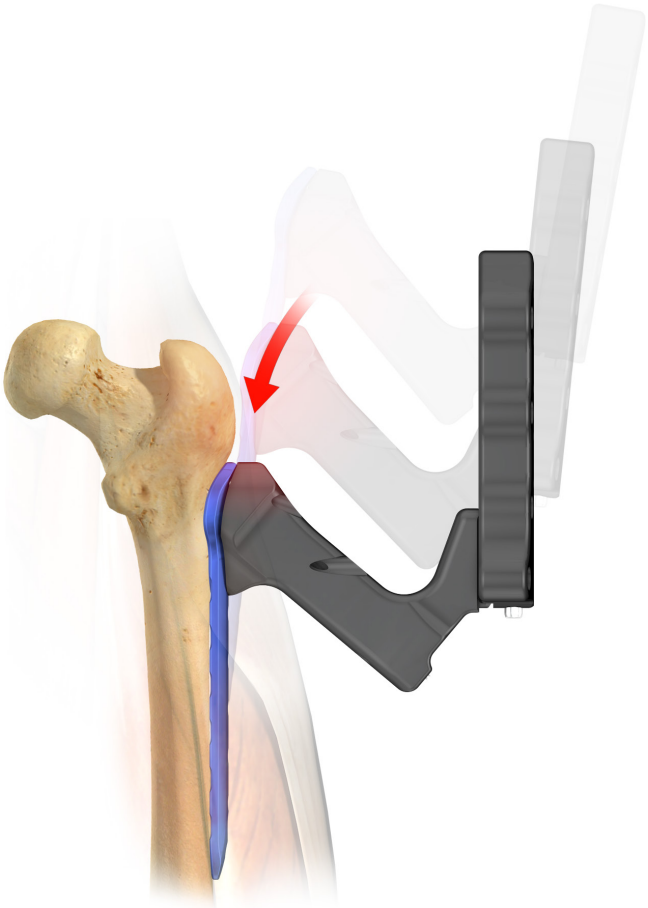
40.6601

40.6602



8 Using distal targeter **[40.6602]** as a handle, enter the plate on the bone between the muscle and the periosteum, maintaining the close contact of its opposite end with the bone. Enter the plate until the proximal end is in the right place on the femur.

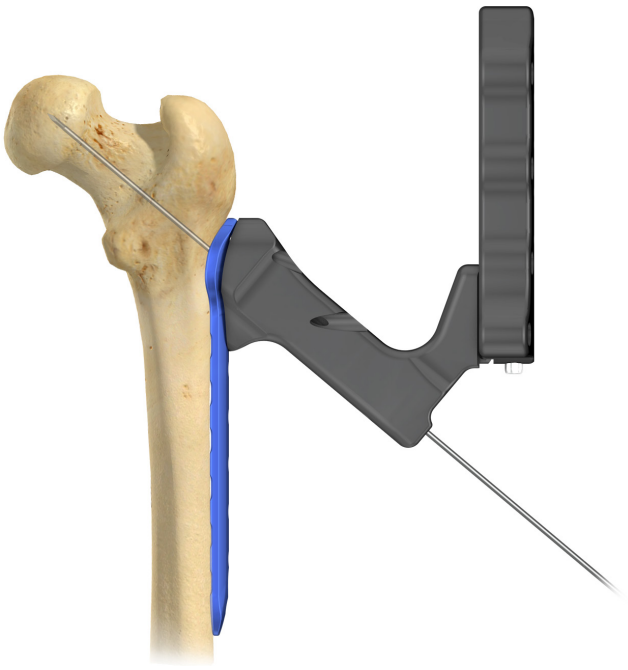
40.6602



9 Insert the guide rod 2.8 **[40.6610]** centrally in the middle of the femoral neck and head through the 2.8 hole of the targeter **[40.6601]** and plate.

40.6610

40.6601



Confirm the location of the rod by taking x-Ray images in the AP and lateral plane.

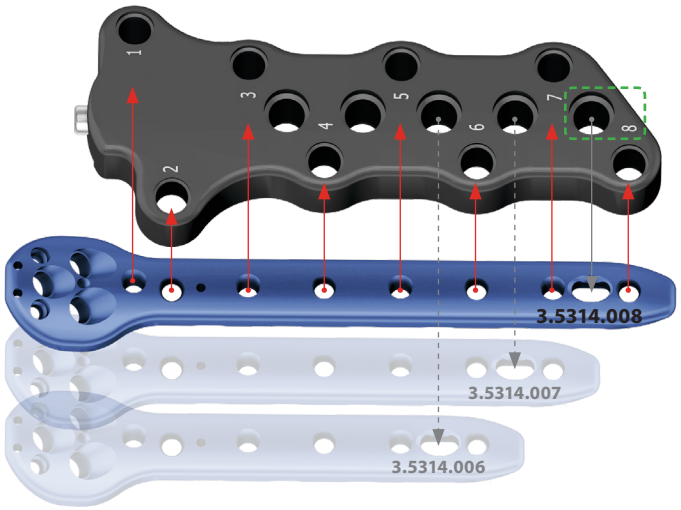
NOTE:
Proper surgical technique requires three telescopic screws 7.3 to be inserted.

The next stages of the procedure - as described in Section IV.5 from step 3 to 6.

IV.7. SCREW INSERTION IN THE SHAFT PART

There are holes corresponding to the shaft holes in the plate numbered from 1 to 8 on the distal targeter **[40.6602]**. The holes on the lateral rows are used for the insertion of locking screws and the holes in the middle row are used for the insertion of the cortical screw. Cortical screw holes are provided in 4-holes plates and longer.

40.6602



IV.7.1. CORTICAL SCREW 4.5 INSERTION TECHNIQUE

NOTE:
Cortical screw 4.5 insertion technique is not applied with:
- short 2-holes plates **[3.5314.002]**,
- long 3-holes plates **[3.5314.003]**

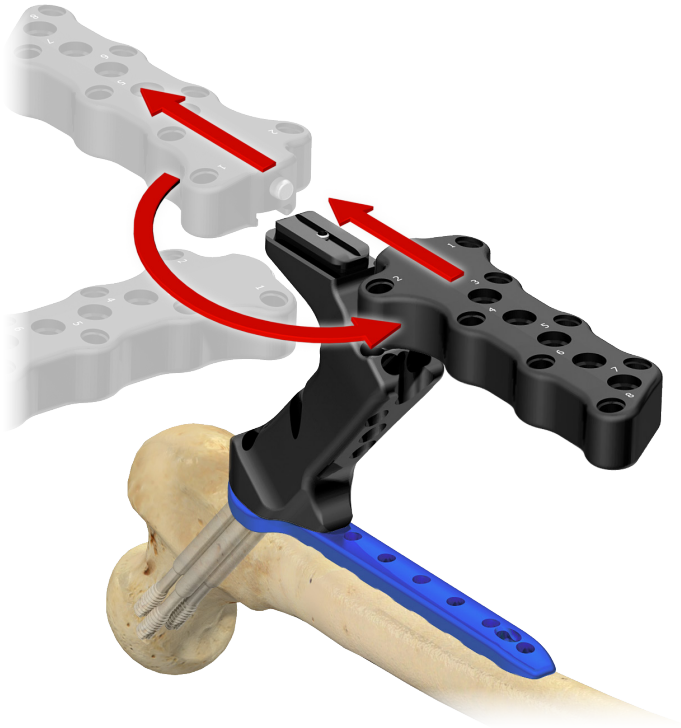
NOTE:
Cortical screw 4.5 insertion technique is applied with plates with 4 and more holes.
4.5 cortical screw should be inserted prior to locking screws 5.0 insertion.

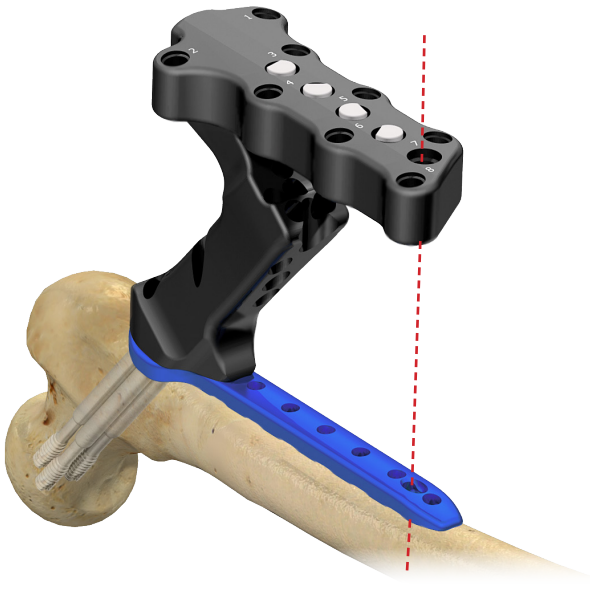
10 Remove distal targeter **[40.6602]** from the targeter arm **[40.6601]**.

Turn the targeter 180° and re-attach to the targeter arm.

40.6602

40.6601





Cortical screw is inserted between the last two holes used for locking screws insertion. Use the holes in the middle row of the distal targeter to insert the cortical screw.

Chosen hole number in the targeter through which the cortical screw is to be inserted is compatible with a number denoting the number of holes provided in the name of the plate used.

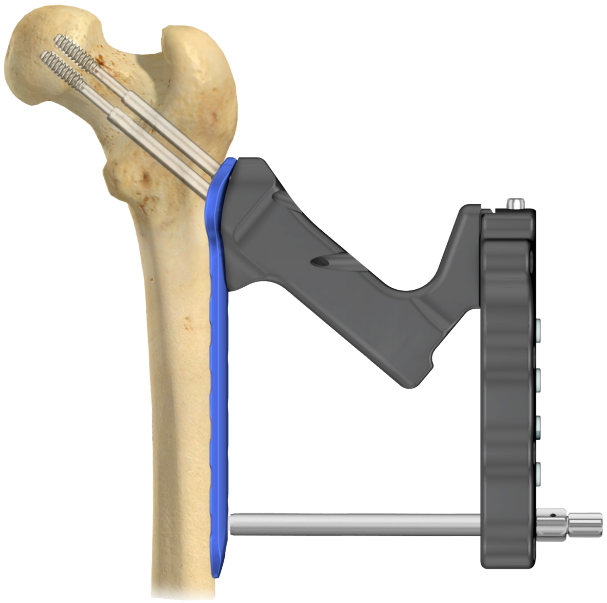
After selecting the appropriate hole in the targeter *(depending on the length of the plate)*, the remaining holes in the middle row can be blind.

11 Insert protective guide 10.0/8.0 **[40.5694.580]** and trocar 8.0 **[40.5696.580]** into the appropriate hole of the distal targeter **[40.6602]**.
Mark the incision point.
Perform small incision and lean the trocar and guide against the plate through that incision.


40.6602


40.5694.580


40.5696.580



12 Lock protective guide 10.0/8.0 **[40.5694.580]** in the targeter **[40.6602]**.

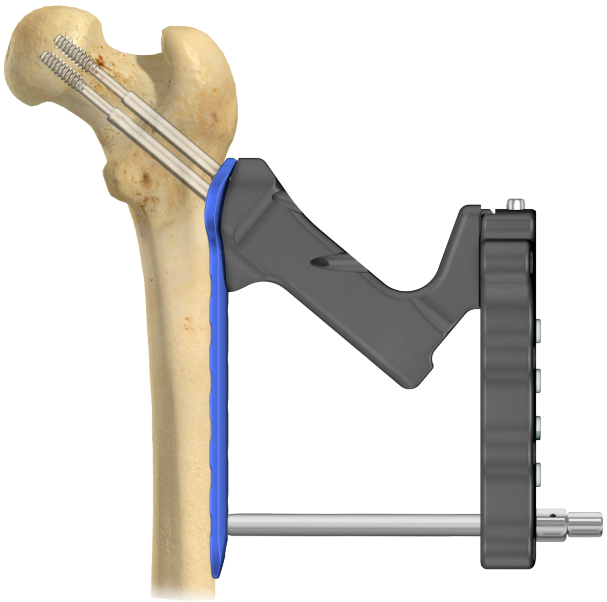
Remove the trocar 8.0 **[40.5696.580]**
Insert guide sleeve 8.0/3.2 **[40.5691.532]**.


40.5694.580


40.6602

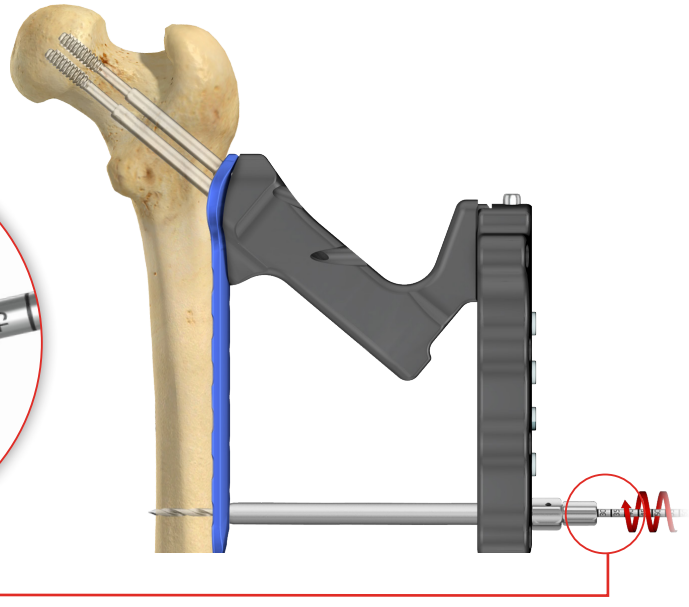

40.5696.580


40.5691.532



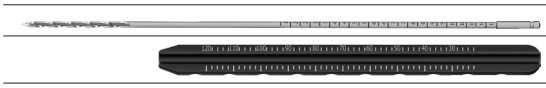
13 Drill using drill with scale 3.2/300 **[40.5650.301]** through both cortices.


40.5650.301

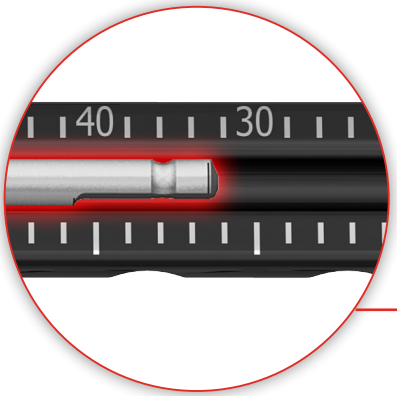


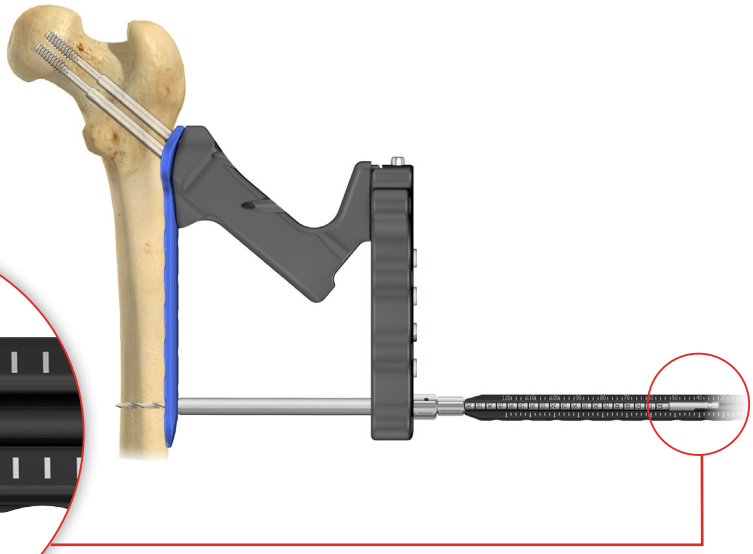
The above description is not detailed instruction of conduct. The surgeon decides about choosing the operating procedure.

14 Determine the length of the screw on the drill scale or using screw length measure **[40.5700.000]**.


40.5650.301

40.5700



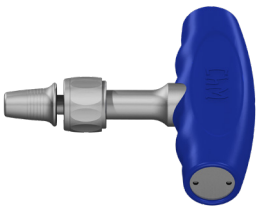


15 Remove the guide sleeve 8.0/3.2 **[40.5691.532]**.

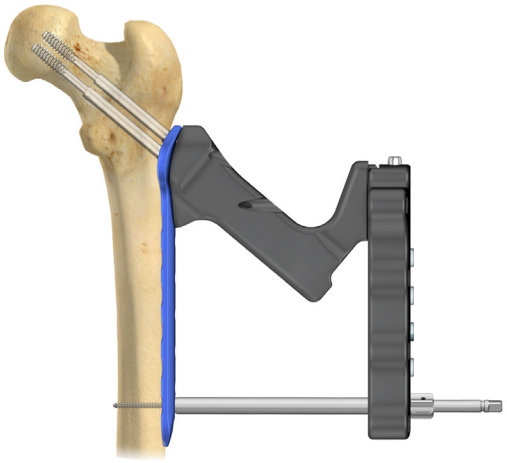
Using torque torque limiting ratchet handle T 4Nm **[40.6660]** and tap **[40.5647]**, tap the hole.

NOTE:
Step applicable in the case of hard bone.

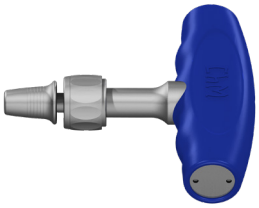

40.5691.532


40.6660

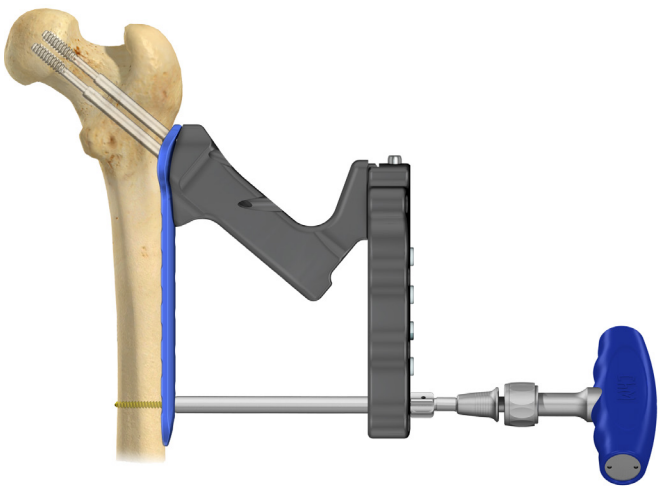

40.5647



16 Using torque limiting ratchet handle T 4Nm **[40.6660]** and screwdriver tip T25 **[40.5684]**, insert chosen self-tapping cortical screw 4.5 **[3.1471.0xx]**.


40.6660


40.5684

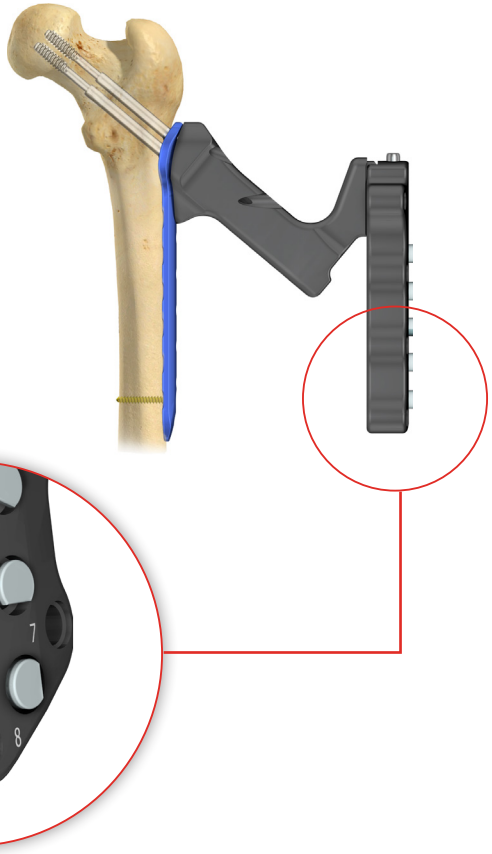


17 Remove protective guide **[40.5694.580]**.
Mark the targeter hole **[40.6602]** with targeter end cap **[40.5612]**.


40.5694.580

40.6602


40.5612



IV.7.2. 5.0 LOCKING SCREW INSERTION TECHNIQUE

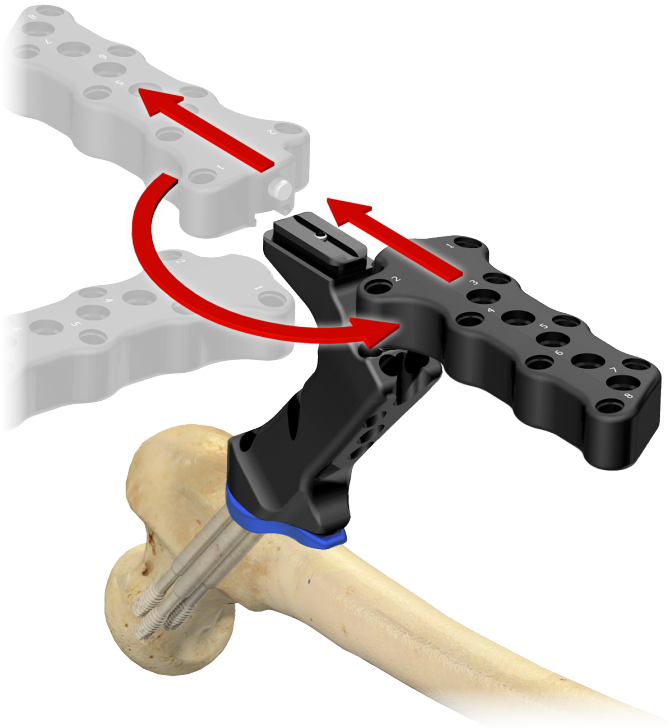
IV.7.2.A. 5.0 LOCKING SCREW INSERTION TECHNIQUE - short plate *(2-holes)*

NOTE:
In the case of locking 2-, and 3-holes plates, remove distal targeter **[40.6602]** from the targeter arm **[40.6601]**.

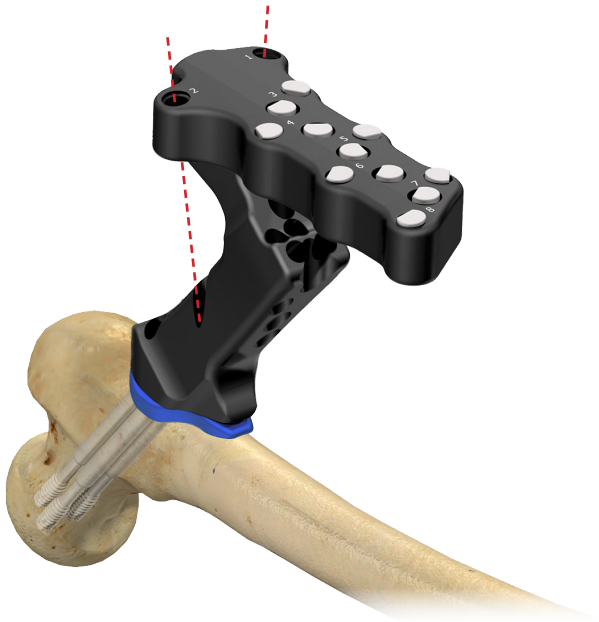
Turn the distal targeter 180° and re-attach to the targeter arm.

40.6602

40.6601



NOTE:
When using 2-holes plates, use holes numbered 1 and 2. The holes from 3 to 8 must be blind.



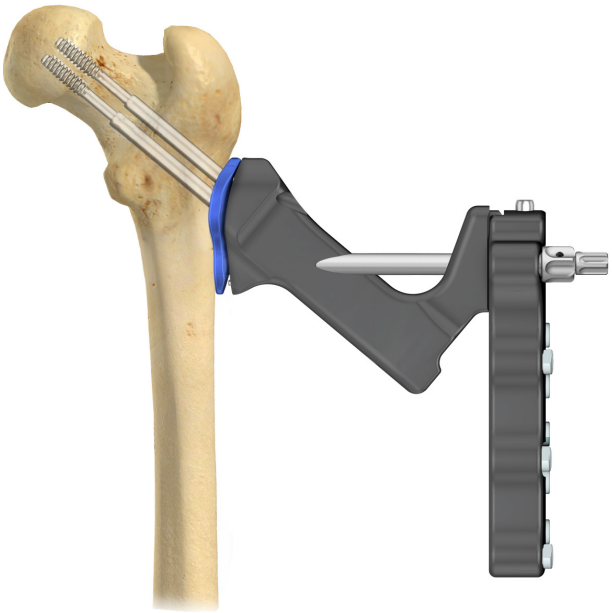
18 Insert protective guide 9.0/7.0 **[40.5693.570]** and trocar 7.0 **[40.5695.570]** into the hole marked 1 or 2 of the distal targeter **[40.6602]**.

Perform small incision and advance the trocar and guide against the plate through that incision.


40.6602

40.5693.570


40.5695.570



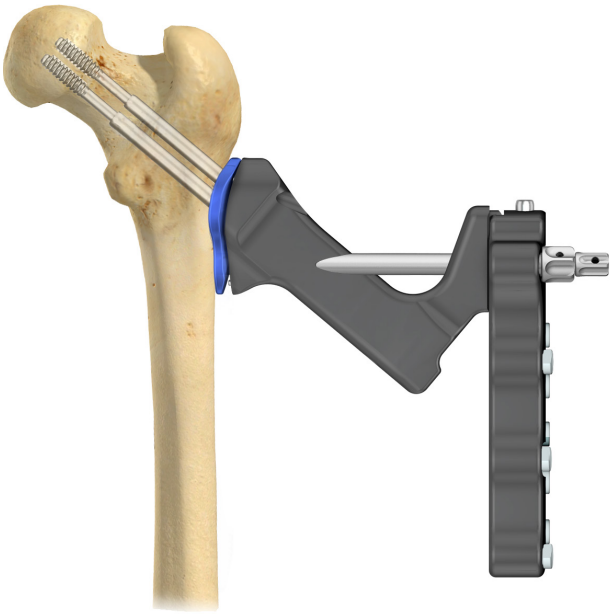
19 Lock protective guide 9.0/7.0 **[40.5693.570]** in the targeter **[40.6602]**.

Remove the trocar 7.0 **[40.5695.570]**.
Insert guide sleeve 7.0/4.0 **[40.5690.540]**.

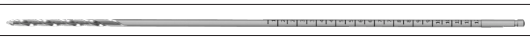

40.5693.570

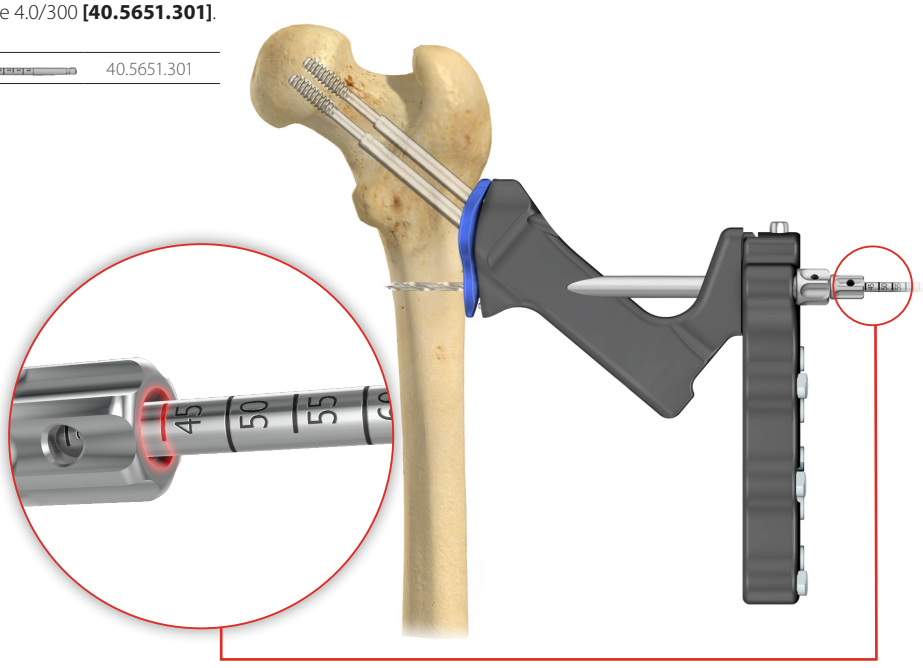

40.5695.570


40.5690.540



20 Drill through both cortices using drill with scale 4.0/300 **[40.5651.301]**.

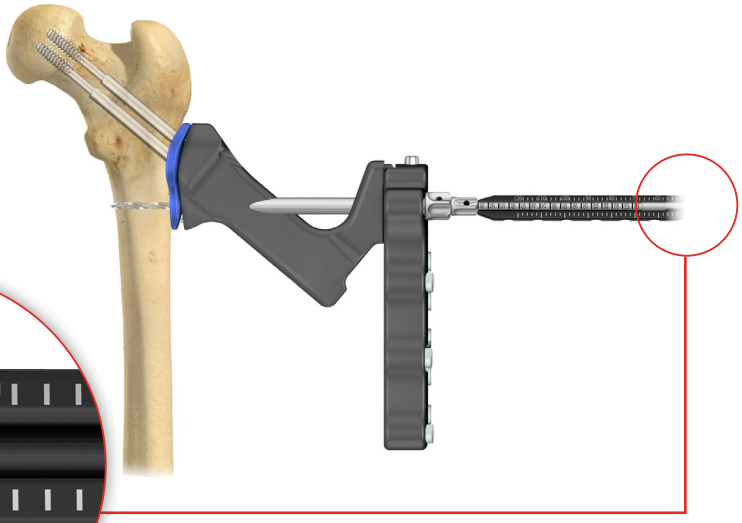

40.5651.301



21 Determine the length of the screw on the drill scale or using screw length measure **[40.5700.000]**.


40.5651.301

40.5700

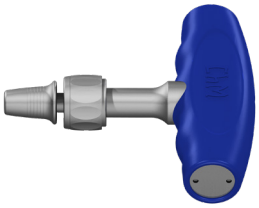


22 Remove the guide sleeve 7.0/4.0 **[40.5690.540]**.

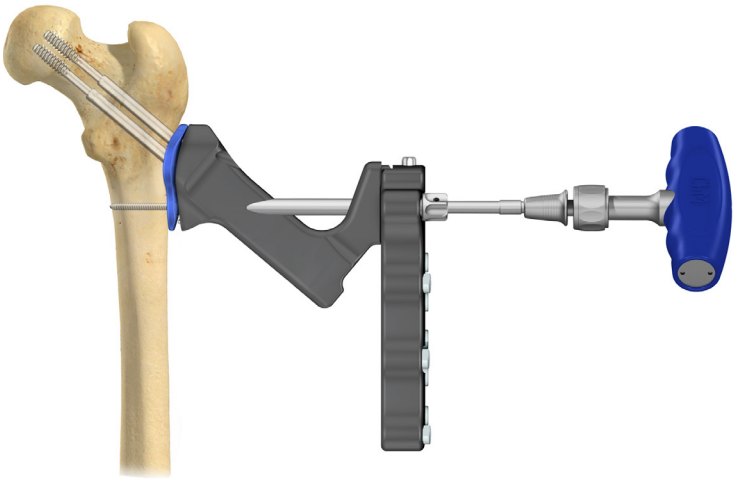
Using torque limiting ratchet handle T 4Nm **[40.6660]** and tap **[40.5646]**, tap the hole.

NOTE:
Step applicable in the case of hard bone.

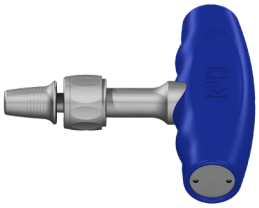

40.5690.540


40.6660

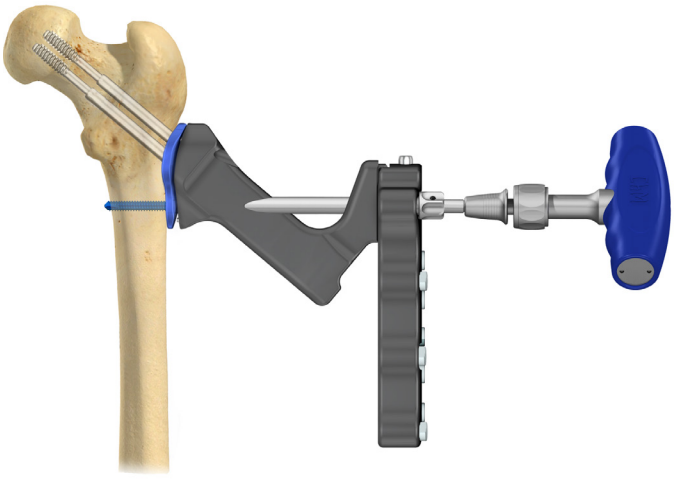

40.5646



23 Using torque limiting ratchet handle T 4Nm **[40.6660]** and screwdriver tip T25 **[40.5684]**, insert chosen 7.0ChLP self-tapping 7.0ChLP self-tapping screw 5.0 **[3.5210.0xx]**.


40.6660


40.5684



24 Remove protective guide **[40.5693.570]**.

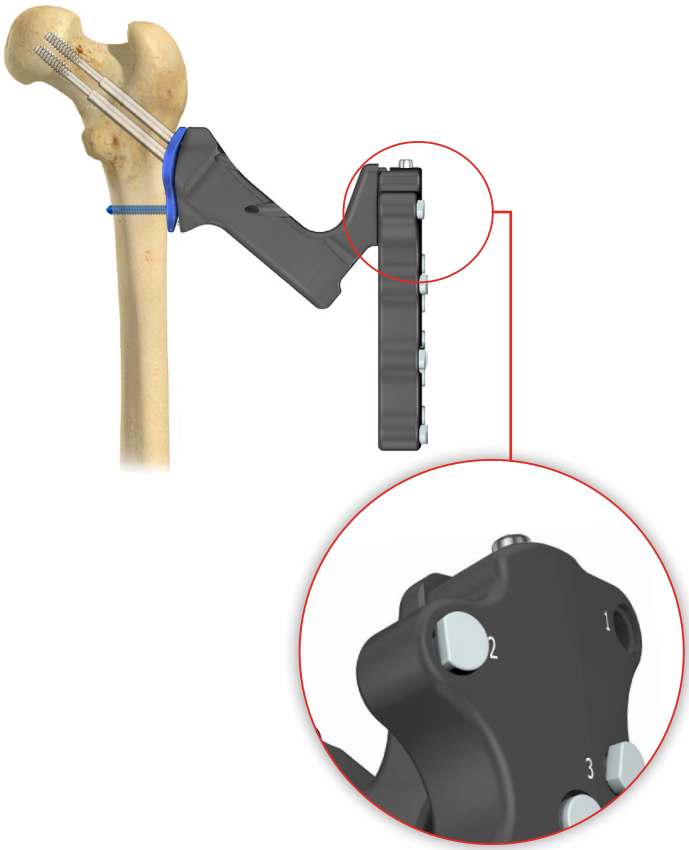
Mark the targeter hole **[40.6602]** with targeter end cap **[40.5612]**.


40.5693.570


40.6602


40.5612

Insert other desirable locking screws in the distal part of the plate following the rules contained in section IV.7.2.A from step 18 to 24.

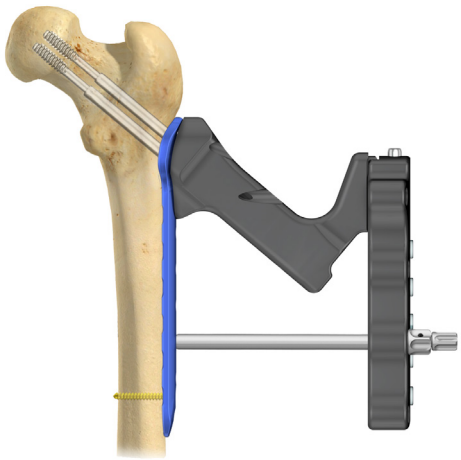


IV.7.2.B. 5.0 LOCKING SCREW INSERTION TECHNIQUE - long plate *(3 holes and more)*

NOTE:
These stages can be applied for holes of the distal targeter marked from 1 to 8.

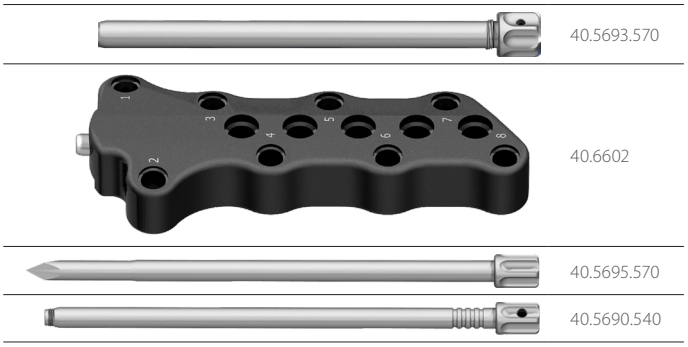
25 Insert protective guide 9.0/7.0 **[40.5693.570]** and trocar 7.0 **[40.5695.570]** into the appropriate hole of the distal targeter **[40.6602]**.

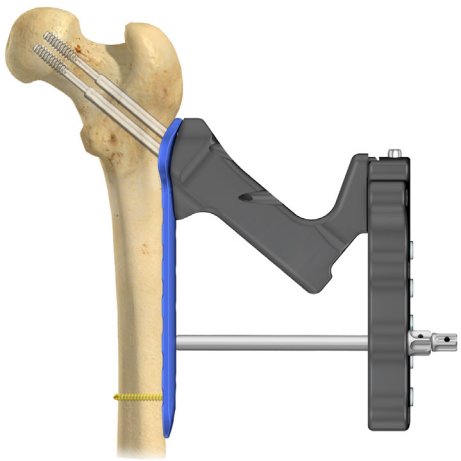
Perform small incision and advance the trocar and guide to the plate through that incision.



26 Lock protective guide 9.0/7.0 **[40.5693.570]** in the targeter **[40.6602]**.

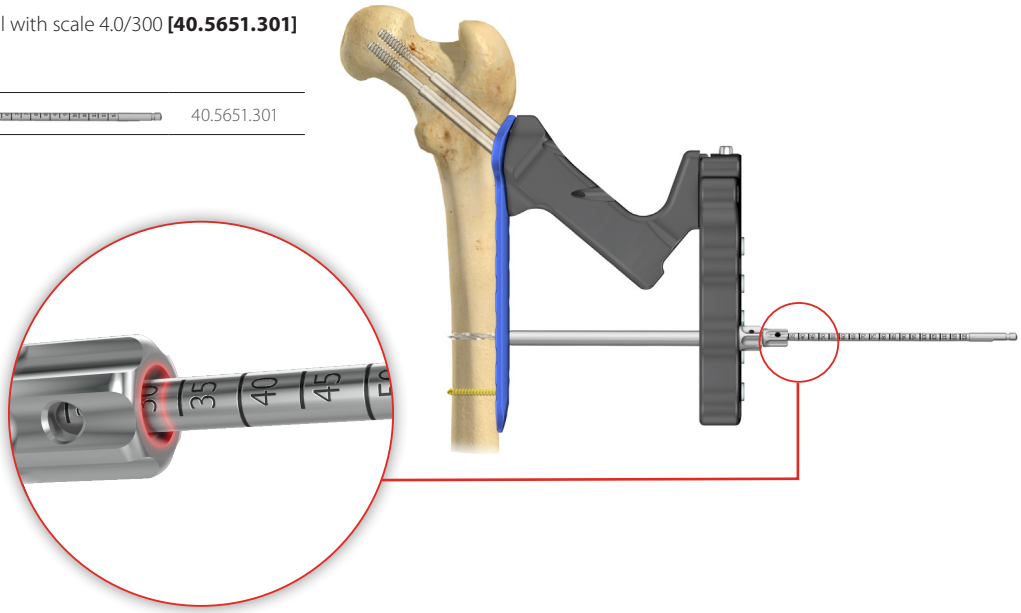
Remove the trocar 7.0 **[40.5695.570]**.
Insert guide sleeve 7.0/4.0 **[40.5690.540]**.





27 Drill through both cortices using drill with scale 4.0/300 **[40.5651.301]**

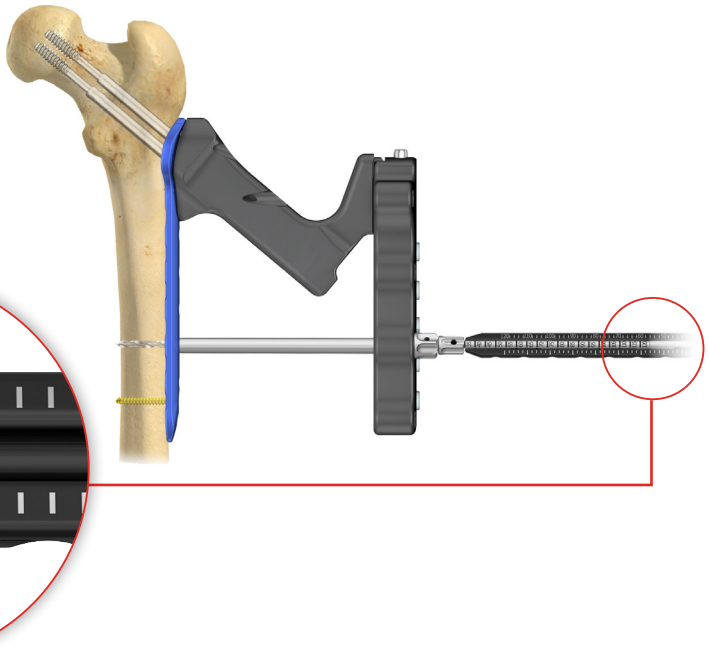

40.5651.301



28 Determine the length of the screw on the drill scale or using screw length measure **[40.5700.000]**.


40.5651.301


40.5700

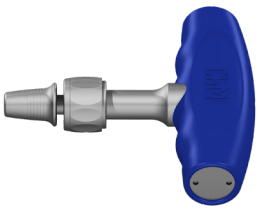


29 Remove the guide sleeve 7.0/4.0 **[40.5690.540]**.

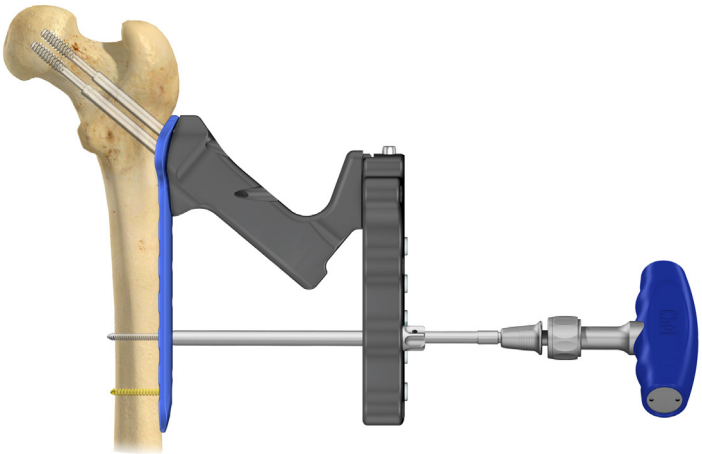
Using torque limiting ratchet handle T 4Nm **[40.6660]** and tap **[40.5646]**, tap the hole.

NOTE:
Step applicable in the case of hard bone.

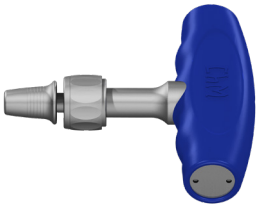

40.5690.540


40.6660


40.5646

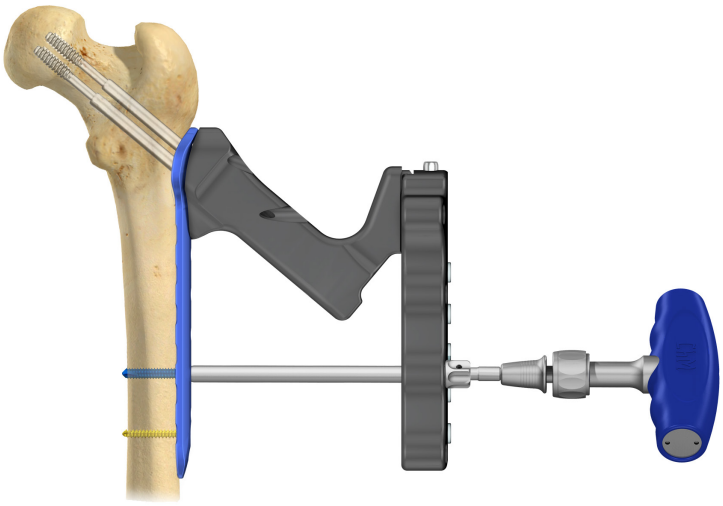


30 Using torque limiting ratchet handle T 4Nm **[40.6660]** and screwdriver tip T25 **[40.5684]**, insert chosen 7.0ChLP self-tapping screw 5.0 **[3.5210.0xx]**



40.6660

40.5684



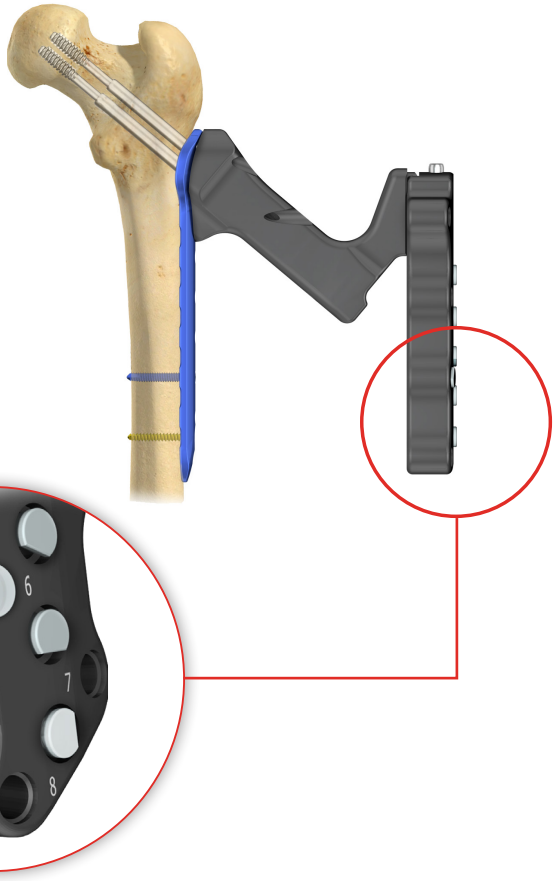
31 Remove protective guide **[40.5693.570]**.

Mark the targeter hole **[40.6602]** with targeter end cap **[40.5612]**.

40.5693.570

40.6602

40.5612



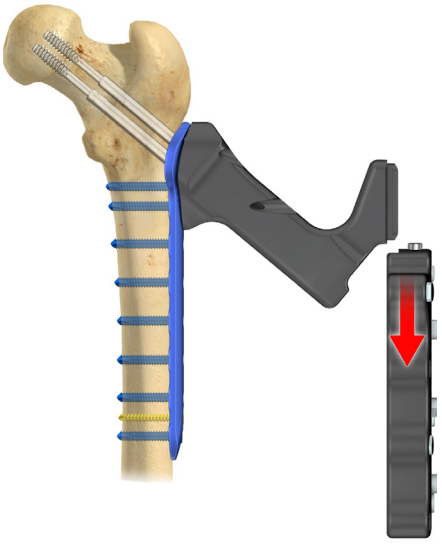
Insert other desirable locking screws in the distal part of the plate following the rules contained in section IV.7.2.B from step 25 to 31.

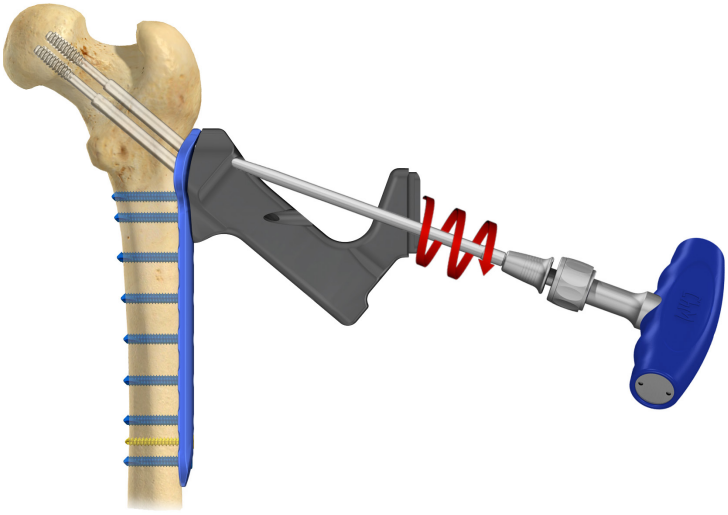
IV.8. TARGETER DISASSEMBLY

Remove the distal targeter **[40.6602]**.
Loosen the screw that secures the plate in the targeter and remove the targeter arm **[40.6601]**

40.6602

40.6601





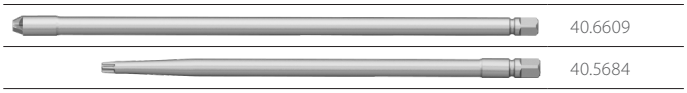
V. POSTOPERATIVE RECOMMENDATIONS

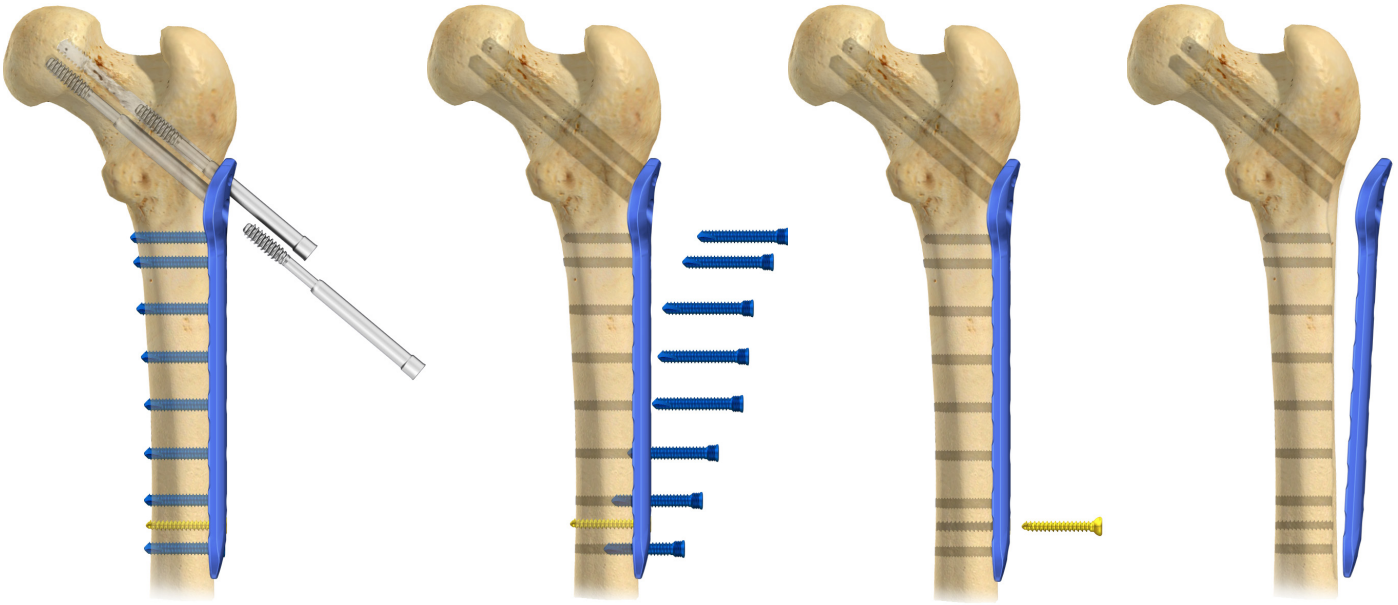
Recommendations are similar as for standard surgical techniques of internal fixation.

VI. IMPLANT REMOVAL

The implant may be removed only after full healing of the fracture.

1. Remove all the telescopic screws using wrench for 7.3 screw removal **[40.6609]**.
2. Remove all the locking screws using screwdriver tip T25 **[40.5684]**.
3. Remove the cortical screws using screwdriver tip T25 **[40.5684]**.
4. Remove the plate.





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