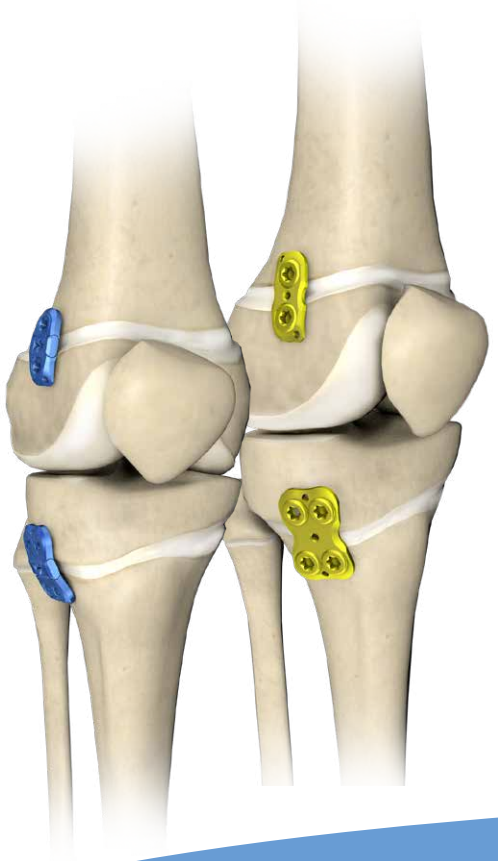
ST/80-702A

ChM®

7,0 ChM Locked Plating ChLP system

7.0ChLP HEPI plates

- *SURGICAL TECHNIQUE*
- *IMPLANTS 3.7098; 3.7099; 3.4159*
- *INSTRUMENT SET 15.0207.111*



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SYMBOLS DESCRIPTION

Titanium or titanium alloy	H length [mm]
Cobalt	Angle
Left	available lengths
Right	Available number of holes
Available versions: left/right	Thickness [mm]
Length	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	Variable angle
Hexagonal drive cannulated	Cortical
Cannulated	Cancellous
Locking	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

1. INTRODUCTION

This surgical technique applies to plates used for correction of the angle deformity of long bones by inhibiting longitudinal growth of the physis. The plates are a part of the **ChLP** locked plating system developed by **ChM**. The presented range of implants is made of materials in accordance with ISO 5832 standards.
The system includes:

- implants (*plates and screws*),
- instrument set used in the surgery,
- surgical technique.

Indications

Angular deformity of long bones of upper and lower limbs in patients with active epiphyseal plate.

Plate selection and shaping

The plates are available in different variants of screw holes spacing. This allows for optimal selection of the implant to the deformity type.
Shaping of the plates is not allowed.

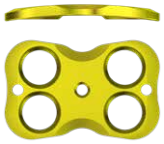
Before using the product, carefully read the Instructions for Use. It contains, among others, indications, contraindications, side effects, recommendations and warnings related to the use of the product.

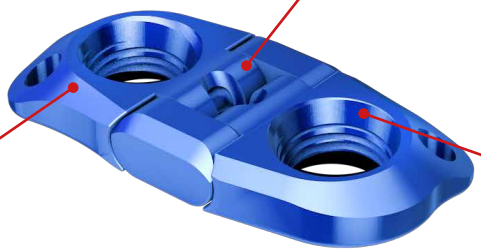
The above description is not a detailed instruction of conduct. The surgeon decides about choosing the operating procedure.

2. IMPLANT FEATURES

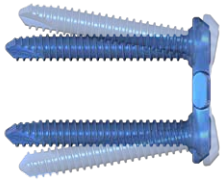
HEPI plates are compatible with screws of **7.0ChLP** system. To facilitate their identification, both locking plates and screws are blue anodized, whereas non-locking plates and screws are gold anodized.

Available plates versions

	Two-hole plate	Four-hole plate
hinged locking version **3.7098**		
non-hinged locking version **3.7099**		
non-locking version **3.4159**		

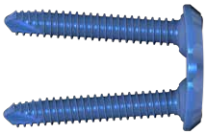


Articulation mechanism:
- the plate fits the bone shape at the implantation site.

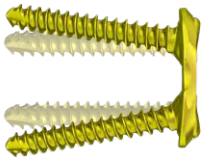


Locking hole design:
- the screws heads do not protrude above the surface of the plate what significantly reduces the irritation of periimplant tissues,
- increased strength of the screw-to-plate threaded connection,
- bottom protrusion reduces surface area of the contact with the bone..

Multi-directional locking screws positioning:
- facilitated screws positioning in relation to the epiphyseal plate.



Non-locking hole:
- the screws can be inserted at a chosen angle.

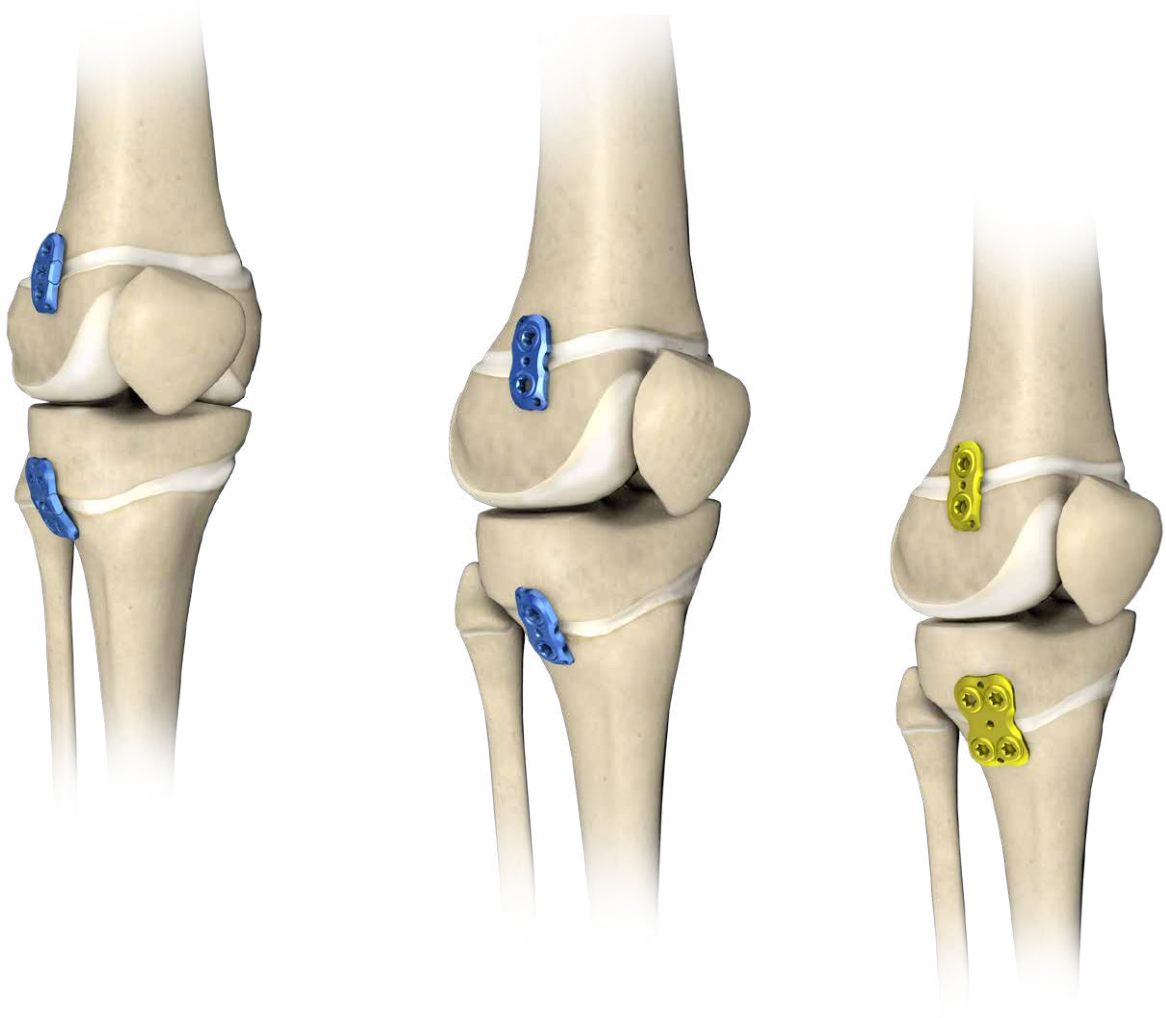


Hole for Kirschner wire:
- easier plate positioning,
- temporary plate stabilization.

Plate design:
- anatomical profile fits the bone structure.

Beveled profile of the plate's upper edge:
- limited soft tissue irritation.

7.0ChLP HEPI plate



3. SURGICAL TECHNIQUE

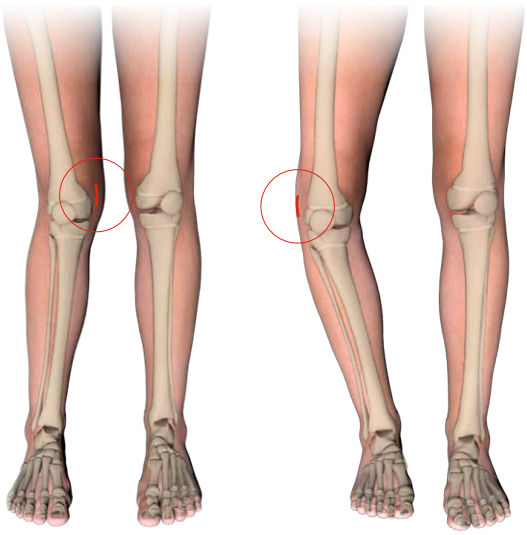
3.1. PATIENT'S POSITIONING

It is recommended to place a patient supine.

3.2. SURGICAL APPROACH

The surgical approach depends on the type and location of the deformity. Perform a longitudinal skin incision of approx. 2-3 cm above the epiphyseal plate. Retract the tissues to expose the implantation site.

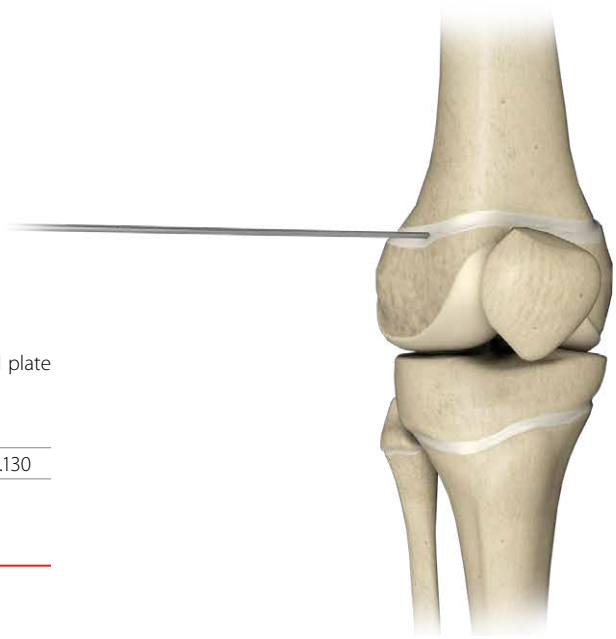
NOTE: confirm the activity and location of the epiphyseal plate using X-Ray imaging.



3.3. IMPLANT SELECTION

Select the right size of an implant to the anatomical bone structure.

The length of the plate should allow insertion of screws above and below the epiphyseal plate.



3.4. INTRODUCTION OF KIRSCHNER WIRE

Insert Kirschner wire 2.0/130 **[40.4815.130]** centrally into the epiphyseal plate to a depth of approx. 1 cm.

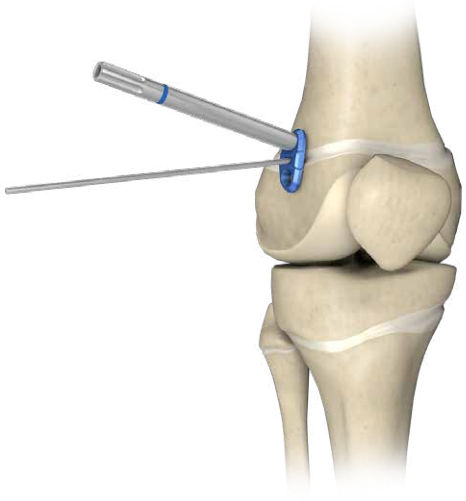
40.4815.130

NOTE: introduce the wire under X-Ray control.

3.5. PLATE INSERTION

Implant the chosen plate using the Kirchner wire 2.0/130 **[40.4815.130]**..

3.5a. LOCKING PLATE INSERTION




40.4815.130


40.6274.040

To facilitate plate insertion, enter the guide sleeve 7.0/4.0 **[40.6274.040]** into the plate locking hole and then both onto the bone using Kirschner wire 2.0/130 **[40.4815.130]**.

3.5b. NON-LOCKING PLATE INSERTION


40.4815.130

3.6. TEMPORARY PLATE STABILIZATION

If necessary, temporarily stabilize the implant position with Kirschner wires inserted into the dedicated holes in the plate.

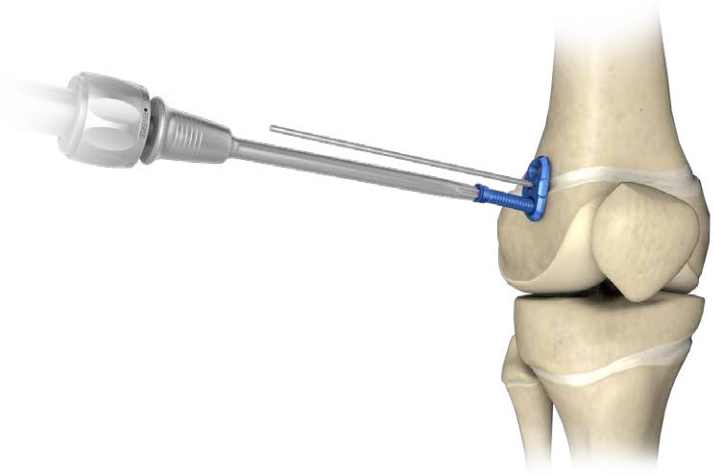
3.7. SCREWS INSERTION

Make sure the screws do not interfere with the epiphyseal plate and the articular surface.

3.7a. INTRODUCTION OF SCREWS TO A LOCKING PLATE

Insert **7.0ChLP** self-tapping screws 5.0 **[3.5210]** of appropriate length into the holes of the locking plate (*acc. to procedure 4a*). Use X-Ray imaging to verify the correct positioning of the plate and screws.

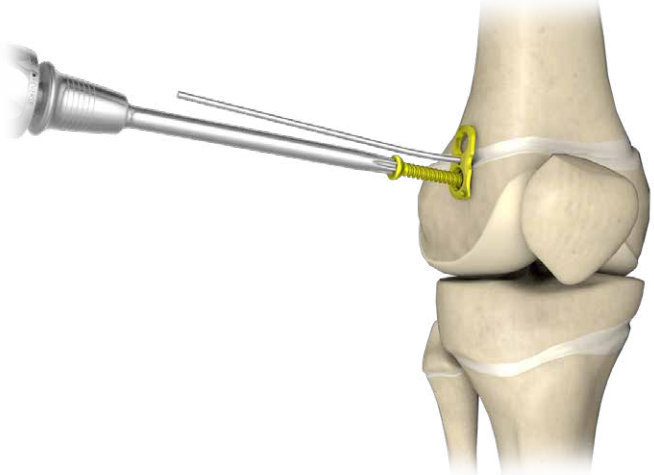
Remove the Kirschner wire.



3.7b. INTRODUCTION OF SCREWS TO A NON-LOCKING PLATE

Insert cortical self-tapping screws 4.5 **[3.1471]** of appropriate length into the holes of the plate (*acc. to procedure 4b*). Use X-Ray imaging to verify the correct positioning of the plate and screws.

Remove the Kirschner wire.



3.8. WOUND CLOSURE

Before closing the wound, take X-Ray images in at least two projections to confirm implant position. Make sure all the screws are properly tightened.

Use appropriate surgical technique to close the wound.

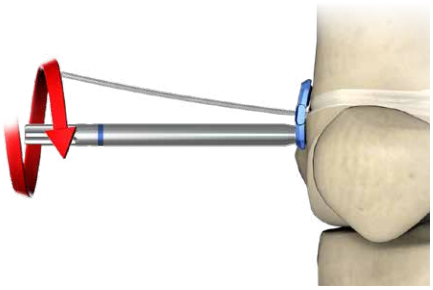
4. SURGICAL PROCEDURES

4a. PROCEDURE OF 7.0ChLP SELF-TAPPING SCREW 5.0 [3.5210] INSERTION

Guide sleeve insertion

- Insert guide sleeve 7.0/4.0 **[40.6274.040]** into a locking hole of the plate.

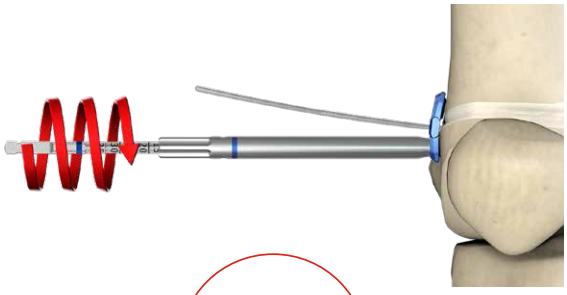

40.6274.040



Hole drilling

Drill using drill with scale 4.0/160 **[40.5651.162]** until desired depth is reached.

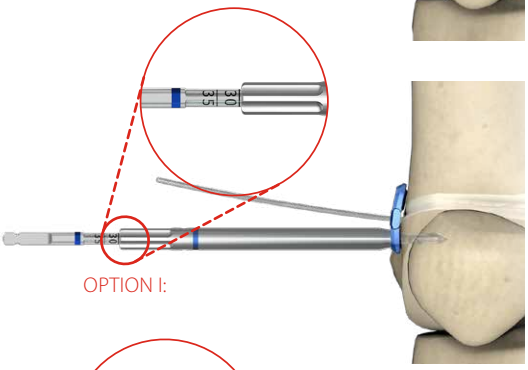

40.5651.162



Measurement of hole depth

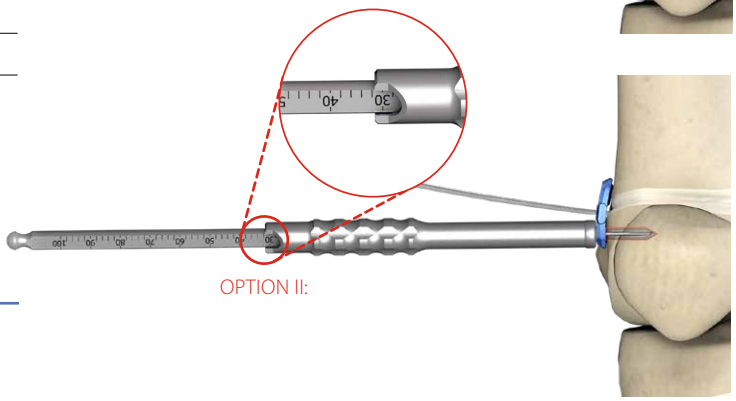
OPTION I: Read the length of the screw from the drill measure 4.0/160 **[40.5651.162]**.


40.5651.162



OPTION II: Having removed the guide sleeve 7.0/4.0 **[40.5705.740]**, use depth measure **[40.4639.550]** to determine the length of a screw.


40.4639.550



Screw insertion

Remove the guide sleeve 7.0/4.0 **[40.6274.040]**.

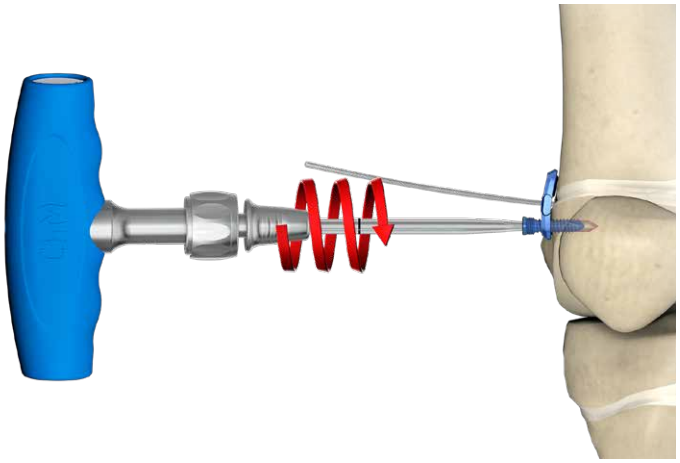
In the initial phase, insert the locking screw with quick coupling handle 1/4 **[40.6659.000]** and screwdriver tip T25-1/4 **[40.5684.210]**.

In the final phase, lock the screw with the torque limiting ratchet handle T 4Nm **[40.6660.000]** and Screwdriver tip T25-1/4 **[40.5684.210]**.

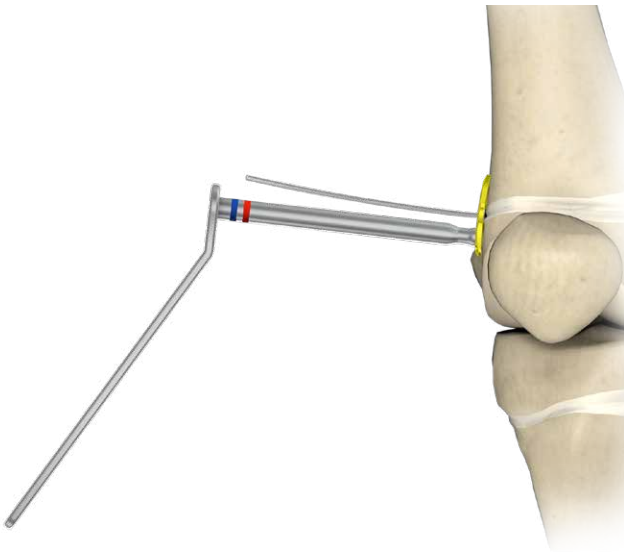

40.6659.000


40.6660.000

40.5684.210



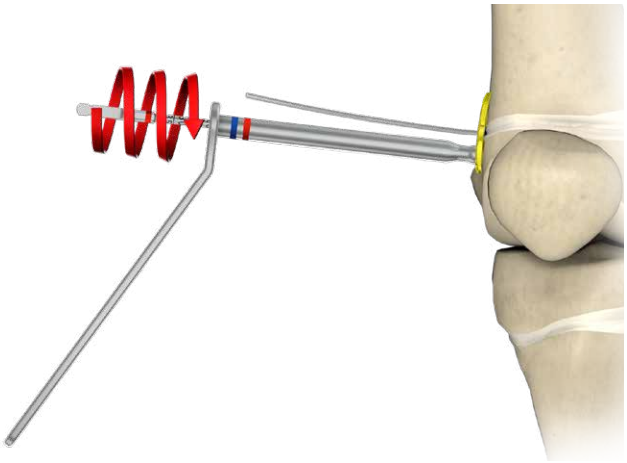
4b. PROCEDURE OF CORTICAL SELF-TAPPING SCREW 4.5 **[3.1471]** INSERTION



Compression guide positioning

Position the guide VA 4.0 **[40.8207.040]** in a desired position:

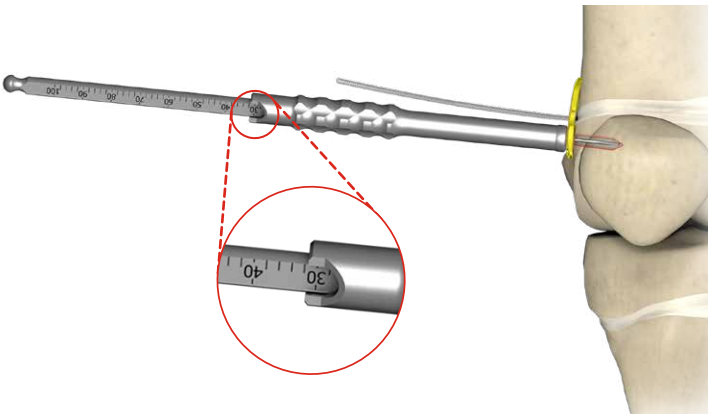
40.8207.040



Hole drilling

Perform a hole for a cortical screw 4.5. Use drill with scale 3.2/160 **[40.5650.162]**.

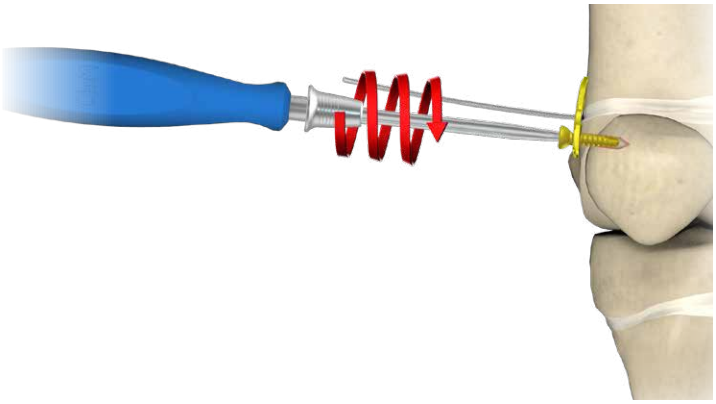
40.5650.162



Measurement of hole depth

Insert depth measure **[40.4639.550]** into drilled hole.

40.4639.550



Screw insertion

Insert cortical screw using Quick coupling handle 1/4 **[40.6659.000]** and Screwdriver tip T25-1/4 **[40.5684.210]**.

40.6660.000

40.5684.210

5. POSTOPERATIVE PROCEDURE

Introduce appropriate post-operative treatment. The physician decides on the post-operative treatment and its conduct.

6. IMPLANT REMOVAL

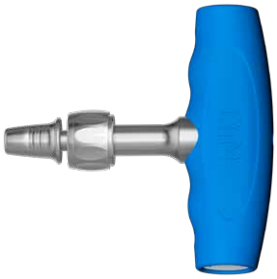
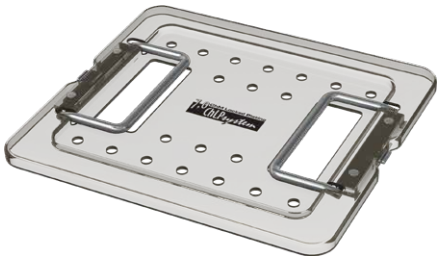
The physician decides about implant removal. In order to remove the locking plate from the body, unlock all the locking screws first and then remove them from the bone. This will prevent any rotation of the plate when removing the last locking screw.

7. CATALOGUE PAGES

7a. INSTRUMENT SET

Instrument set for 7.0ChLP 3.7098/7099/4159 4x4H

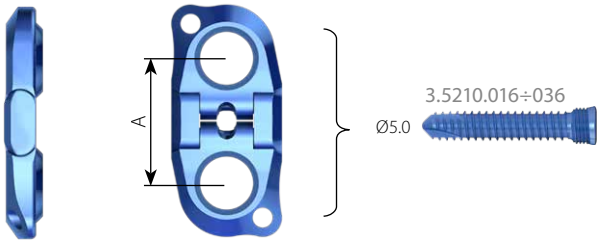
15.0207.111

	Name	Catalogue No.	Pcs
	Guide sleeve 7.0/4.0	**40.6274.040**	2
	Guide VA 4.0	**40.8207.040**	1
	Kirschner wire 2.0/130	**40.4815.130**	4
	Drill with scale 4.0/160	**40.5651.162**	2
	Drill with scale 3.2/160	**40.5650.162**	2
	Depth measure	**40.4639.550**	1
	Screwdriver tip T25-1/4	**40.5684.210**	1
	Quick coupling handle 1/4	**40.6659.000**	
	Torque limiting ratchet handle T 4Nm	**40.6660.000**	1
	**7.0ChLP** container lid 3.7098/7099/4159 4x4 H	**14.0207.106**	1
	**7.0ChLP** container 3.7098/7099/4159 4x4 H	**14.0207.111**	1

7.0ChLP **HEPI plate 2hol.**

O	A [mm]	Catalogue No.
2	12	3.7098.112
2	16	3.7098.116
2	20	3.7098.120

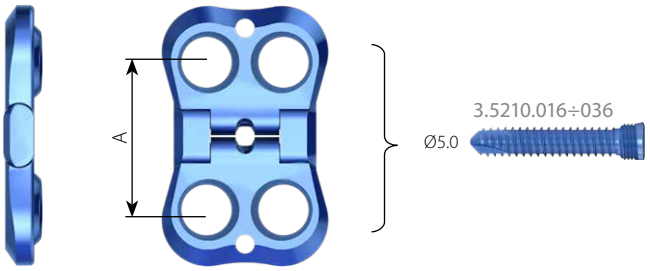
O – threaded holes number

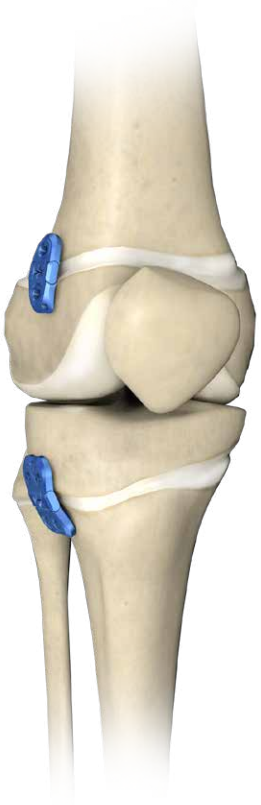


7.0ChLP **HEPI plate 4hol.**

O	A [mm]	Catalogue No.
4	16	3.7098.216
4	20	3.7098.220

O – threaded holes number





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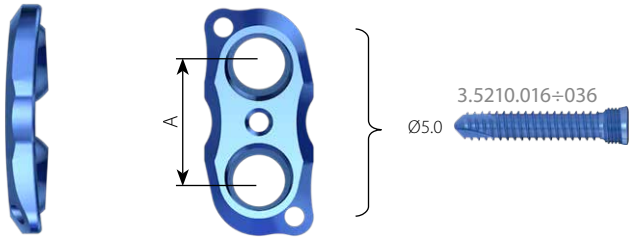
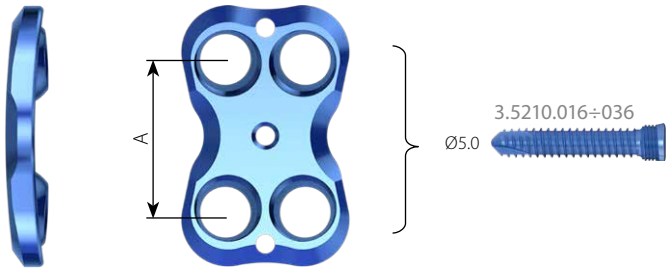


7.0ChLP **HEPI plate 4hol.**

O	A [mm]	Catalogue No.
4	16	3.7099.216
4	20	3.7099.220

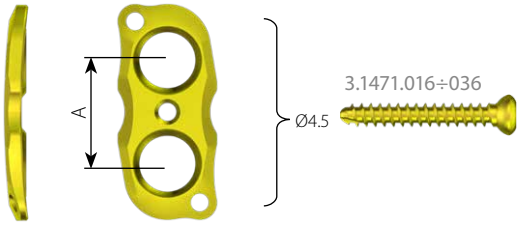
O – threaded holes number



HEPI plate 2hol.

O	A [mm]	Catalogue No.
2	12	3.4159.112
2	16	3.4159.116
2	20	3.4159.120

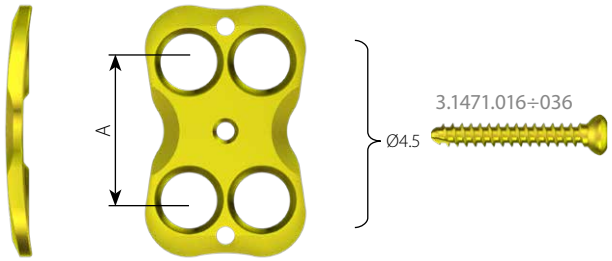
O – screws holes numer



HEPI plate 4hol.

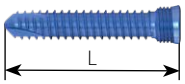
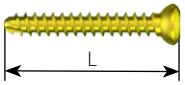
O	A [mm]	Catalogue No.
4	16	3.4159.216
4	20	3.4159.220

O – screws holes numer



Stand for 7.0ChLP implants 3.7098/7099/4159 4x2H

14.0207.601

7.0ChLP HEPI plate 2hol.						
7.0ChLP HEPI plate 4hol.						
7.0ChLP self-tapping screw 5.0						
L [mm]	16	20	24	28	32	36
Pcs	4	4	4	4	4	4
HEPI plate						
Cortical self-tapping screw 4.5						
L [mm]	16	20	24	28	32	36
Pcs	4	4	4	4	4	4

* Stand does not include implants

7c. SCREWS

Ti | Ster Non Ster

7.0ChLP self-tapping screw 5.0

Len	Ti
16	3.5210.016
20	3.5210.020
24	3.5210.024
28	3.5210.028
32	3.5210.032
36	3.5210.036

Cortical self-tapping screw 4.5

Len	Ti
16	3.1471.016
20	3.1471.020
24	3.1471.024
28	3.1471.028
32	3.1471.032
36	3.1471.036

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